

Promoting Team Resilience within the Healthcare Setting: A Mixed
Methods Approach to Develop & Test the Feasibility of an Online
Team Reflective Journal Intervention

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Abstract

Healthcare teams face on-going challenges within the workplace giving rise to work-related stress. Responding to this, organisational stakeholders at a large NHS Trust identified the promotion of positive relationships within healthcare teams as a research priority. Promoting resilient team practices can reduce the impact of workplace pressures on wellbeing through positive team working relationships, thereby maximising team functioning during experienced adversity. Overall, the central question posed by this thesis is whether a feasible intervention can be developed to promote team resilience within healthcare teams. At present, no specific theory-driven interventions promote resilient team practices within the UK healthcare setting. To address this, a theoretical framework for promoting team resilience in the workplace was developed to underpin the approach of this thesis.

A multiphase mixed methods research study was designed to firstly develop an evidence-based intervention to promote resilient healthcare team practices, and secondly to evaluate intervention feasibility in practice. Recognising the challenges associated with developing and implementing an evidence-based real-world interventional research study, a strength-based approach to engaging with senior organisational leaders, team leaders, and team members at the research site was proactively pursued throughout the course of this project. The joint outcomes of a systematic review, interviews and surveys with healthcare staff conducted in the face of challenging workplace conditions, revealed important healthcare-specific resilient team practices, as well as identifying the need to further promote team resilience within the clinical context. Based on these initial findings, several recommendations for the design of an intervention to promote healthcare team resilience were put forward and informed the development of an evidence-based online team reflective journal intervention for use by teams experiencing challenging working conditions. Two ward teams were recruited to

evaluate this work-based intervention over a four-week period, however within the real-world context of increasing workplace pressures the intervention had poor feasibility in practice. Despite contextually limiting factors, research outcomes highlighted the easy-to-use format, relevant content, and potential success of the online team reflective journal, alongside several solution-focussed recommendations to enhance user capability, opportunity, and motivation to engage with the intervention to help tackle work-related stress in healthcare teams. These recommendations further informed the developed theoretical framework for promoting team resilience in the workplace; thus, this thesis responds to real-world needs by making original contributions to both academic knowledge and occupational practice.

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CHAPTER ONE

Introduction

1.1 Thesis overview

This thesis is approached from the perspective of a researcher with an academic background in psychology, entering a broadly predefined project to develop and evaluate an intervention to enhance team relationships and resilience within the healthcare environment. From the outset it was clear that the scope of work would involve in-depth and on-going engagement with healthcare services, clinical professionals and stakeholders, and a broad range of healthcare-related academic literature. A steep learning curve in relation to the acquisition of relevant clinical knowledge, as well as practical approaches to conducting real-world research within the clinical setting was expected. Beyond this was the significant impact that the Covid-19 pandemic had on all aspects of the research. Considering the positionality of the researcher and the unique research context within which this project took place, these aspects of the research journey are referenced and highlighted throughout this body of work as well as reflected in the overall structure, to enhance the understanding of the reader by drawing attention to key learning and decision-making that has shaped this thesis. The thesis is composed of nine chapters divided into four main sections that: (a) contextualise the thesis, (b) review essential knowledge to inform research questions, (c) present the methodological design, procedures, and findings, and (d) synthesise outcomes within the research context.

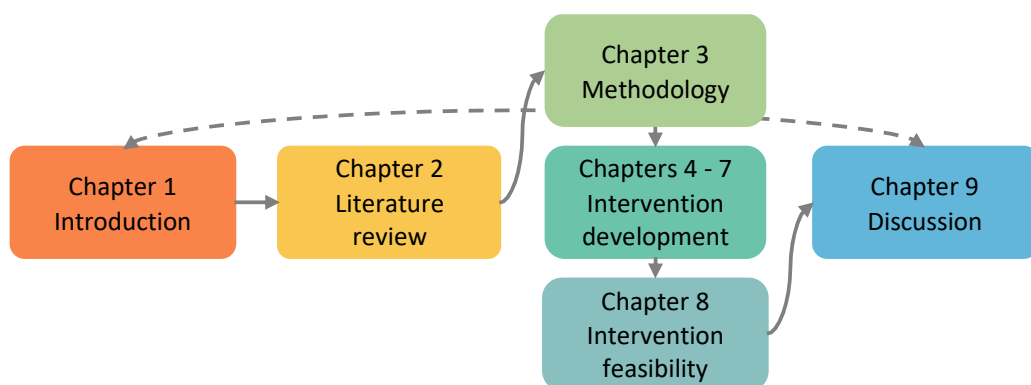


Figure 1: Illustrative overview of the thesis structure

1.2 Research Context

From late 2018, the researcher worked towards establishing a collaborative working relationship with a local NHS Trust where all research activities took place. As a large provider of acute care services in the Southwest of England, the Trust comprises two main hospital sites, both providing a range of medical and surgical care. Between March 2019 when research activities commenced and March 2022 when research activities were complete, the Trust employed approximately 8000 members of staff. Between these timepoints however, annual workforce stability decreased from 89.0 to 86.7% (lower than national average), due to a combination of increasing leavers and a decreasing number of new starters. Workforce stability challenges were particularly experienced across qualified nursing groups and care support roles (NHS Digital, 2022).

In terms of service quality and experience, the Trust received three CQC inspections during the lifespan of this research project. In October 2018 the Trust received an overall 'Good' rating observed across four domains (safe, effective, caring, well-led) but 'Required Improvements' in terms of service responsiveness. Leadership at the Trust was positively rated as well as the systems in place to support staff wellbeing (CQC, 2022). Despite this, the 2019 NHS staff survey (NHS, 2021), reported a significantly increasing five-year trend in work-related stress with 40.7% (N = 3355) of respondents reporting that during the previous 12 months they had felt unwell because of work-related stress (nationally = 40%). Reported reasons for this included strained working relationships, time pressures, and feeling pressured to come into work by colleagues or managers when feeling unwell.

In relation to the pandemic, between March 2020 and March 2022, over 12000 Covid-19 cases were recorded in the region with more than 5000 patients being admitted to the Trust. In addition to the challenges associated with treating Covid-19 patients, the Trust vaccination

drive contributed to over 1,500,000 vaccinations delivered across the region between December 2020 and March 2022 (Gov.uk, 2022). On top of this, the Trust experienced several Covid-19 hospital outbreaks between November 2020 and January 2021. Despite these challenges, an unannounced inspection visit in February 2021 focussing on infection prevention and control, highlighted positive leadership with staff feeling well respected, supported, and valued (CQC, 2022). This sentiment was broadly reflected in the 2021 NHS staff survey which revealed that teamwork was generally well rated at 6.5/10 (range: 6.0 – 7.1; benchmark group = 6.5). Moreover, respondents positively rated working relationships with their immediate manager as being ‘encouraging at work’ (69.7%; N = 3505), ‘supportive during a personal crisis’ (74.9%; N = 3502), ‘having a positive interest in staff health and well-being’ (69%; N = 3498) and ‘valuing individual work’ (72.2%; N = 3492). Despite these ratings, overall, pandemic-related workplace challenges further increased work-related stress and diminished healthcare staff wellbeing with 44% of NHS staff reporting feeling unwell because of work-related stress in past twelve months (NHS, 2021). The most recent CQC inspection conducted in April and June 2022, saw the Trust receive an overall quality rating of ‘Requires Improvement’ which was observed across three domains (safe, responsive, well-led) but rated as ‘Good’ in terms of service effectiveness and care. Overall challenges relating to leadership and workplace culture were highlighted with not all staff experiencing adequate support in the face of on-going workplace pressures (CQC, 2022).

The issue of increasing work-related stress and staff wellbeing experienced at this Trust aligns with the national picture. The Health and Safety Executive define work-related stress as “a harmful reaction that people have to undue pressures and demands placed on them at work” (HSE, 2018, p. 4). Symptoms of work-related stress manifest in different forms from physical (e.g., headaches or dizziness and muscle tension or pain), to mental (e.g., low mood and poor decision-making), and behavioural (e.g., irritability and difficulty eating and sleeping;

NHS, 2019). Excessive workloads and unrealistic deadlines, regularly being under pressure to meet targets, and a lack of job control are long-standing contributors to work-related stress within healthcare services (NHS Providers & NHS Confederation, 2021). In addition, the Royal College of Nursing (2015) highlighted long working hours, unrealistic time pressures, and unachievable deadlines as significant contributing causes of increasing levels of work-related stress and burnout. At the time of beginning this thesis, more than 1 in 11 of all NHS posts were vacant with high levels of staff turnover experienced by Trusts (West, 2019). These staff shortages contributed to workplace pressures and were invariably linked to the 2019 NHS staff survey reporting that over 50% of staff had gone into work in the last three months despite feeling unwell, because they felt pressurised by either their manager or colleagues. In addition to the workforce shortage, insufficient resources have significantly contributed to the observed rise in NHS work-related stress. For example, Thomas (2019) highlighted that funding cuts in five years previous had reduced frontline health services despite rising patient needs, thus increasing pressure on current services and workers.

The pressure within the healthcare working environment has been further exacerbated by the pandemic that has presented increased uncertainty and demanding working conditions. Self-published experiences provide a unique insight into the severe working conditions within services that have contributed to staff burnout and exhaustion. For example, Tolley and Tysoe (2020), described the: “overwhelming feeling of sadness at having to care for patients without their loved ones with them at such a scary time” (para. 5). This negative emotional impact of caring for severely ill patients within the bounds of lockdown restrictions was widely reported and a commonly shared experience as others described working during the pandemic as: “physically and emotionally demanding” (O’Neill, 2020, para. 7).

In addition to the direct effect of the virus, healthcare workers also documented commonly shared challenges of adapting to new ways of working. From the onset of the pandemic, increasing concerns were raised regarding the lack of personal protective equipment (PPE) available within the NHS. A student nurse reported that: “many healthcare workers are forced to re-use PPE such as visors and glasses because there is not enough. As a result, there are healthcare workers who are refusing to look after Covid-19 patients” (Angelini, 2020, para. 6). Tolley and Tysoe (2020) further shared that: “full PPE is not easy. One of the main problems is that no one recognises anyone, so we all have to write our names on the front of our gowns... The PPE we wear can also make care feel depersonalised” (para. 7). Tolley and Tysoe continued to share their experienced adversity as they joined new care teams: “after 25 years away from intensive care (ICU), I initially struggled to adapt to my new clinical role. There’s massive uncertainty about what we’re going to be doing” (para. 8). Similar experiences of uncertainty within the workplace were shared by O’Neill (2020): “in our team there’s massive uncertainty about what we’re going to be doing... our research studies are suddenly on pause, except ones that are part of essential treatment... we might be deployed to clinical areas to look after patients” (para. 2). Anxiety within the workplace was further raised and team functioning negatively impacted by the personal risk that the virus presented to healthcare workers, as one community nurse shared: “I also discover that our team is down 25% due to Covid-19, with staff self-isolating due to suspected symptoms in themselves or a family member” (Nursing Standard, 2020b, para. 14).

Despite these harsh and traumatic working conditions, healthcare professionals also reported positive experiences, particularly relating to teamwork: “seeing staff pull together to support each other in these unprecedented times is a privilege... traditional NHS hierarchy has been flattened, and previously strict professional boundaries have been blurred to promote effective teamwork” (Tolley & Tysoe, 2020, para. 11). Similarly, an emergency nurse

also described the positive teamwork that they experienced: “I am in absolute awe of all the people I work with – they are amazing, resourceful, intelligent, kind, funny people and I’m so grateful I get to work with them in this very special department every single day” (Nursing Standard, 2020b, para. 15). The respiratory team at St Bartholomew's Hospital documented their team experience of working during the peak of the Covid-19 pandemic, describing various changes such as increasing staffing levels, adapting rota systems, and the intake of additional non-respiratory healthcare workers to support roles on ward (White, 2020). Despite this, overall, this respiratory team conveyed a sense of positive team functioning derived from working relationships that enabled adaptation in response to experienced adversity. Nationally however, following the pandemic, 92% of NHS Trusts reported concerns regarding staff wellbeing, burnout and work-related stress (House of Commons Health and Social Care Committee, 2021). A joint NHS Providers and NHS Confederation report (2021) also noted that many care teams were burnt out and exhausted, with 41% of Trusts expecting low workforce wellbeing to be a major factor contributing to NHS running costs, lasting until the end of 2024/25 and beyond. Overall, proactive steps to address the impact of increasing job demands and resulting work-related stress within the NHS are essential.

1.3 Research Directive

In March 2019, the researcher engaged with two senior NHS Trust organisational stakeholders to explore practical methods to mitigate the impact of work-related stress in the workplace. Both stakeholders were qualified nurses working at the senior leadership level across their Trust with a focus on quality improvement. Recognising the issue of increasing work-related stress, the stakeholders identified the promotion of positive working relationships, particularly within multi-disciplinary ward teams, as a key research directive for their Trust. This focus on enhancing positive team relationships aligns with The Health and Safety Executive (HSE, 2019) Management Standards approach to tackling work-related stress

within the organisational setting. Management Standard Four, Relationships, encourages organisations to promote positive working relationships to avoid conflict and unacceptable behaviour at work (e.g., bullying & blame culture). To tackle work-related stress, the HSE recommends that organisations “encourage good, honest, open communication at all levels in work teams; provide opportunities for social interactions among workers... [and], create a culture where colleagues trust and encourage each other” (p52).

Theoretically grounding this approach to tackling work-related stress, the Job-Demand-Control-Support model of psychological stress (Johnson & Hall, 1988), proposes that job demands (e.g., time-pressure, role ambiguity and workplace conflict) may result in work-related stress (Cummings & Sanders, 2019). This is particularly the case if unequally balanced against low levels of moderating factors such as social support which is derived in positive working relationships (Luchman & González-Morales, 2013). In addition to social support, Wei et al. (2011), identify resilience as a key moderator between jobs demands and work-related stress. Emphasising the important role of resilience, the House of Commons Health and Social Care Committee inquiry published in June 2021, highlights the significant risk of workforce burnout to NHS functioning and an immediate need to strengthen resilience within the healthcare sector. Henshall et al. (2020), further note that the increasingly high demands placed on healthcare professionals working within overstretched healthcare systems highlights the need for a resilient workforce.

There is a danger of employers solely promoting individual employee resilience to divert attention away from organisational issues and shortcomings which can potentially put individuals at mental and physical risk (Lewis cited by Howlett, 2021). Looking deeper into the negative aspects for promoting workplace resilience, Diprose (2015) suggests that the accepted workplace culture of reward and celebration of success based on “overcoming-the-

odds performance” (p. 50), places responsibility on individuals to drive change (Mahdiani & Ungar, 2021). This can, intentionally or unintentionally, imply individual responsibility for failure to overcome experienced workplace challenges. This approach has the potential to fuel toxic work environments and a culture of blame within teams and organisations where individuals are blamed or criticised for mistakes and errors. Such practices may result in poor team practice, reduced work engagement, productivity, and increased work-related stress (Hardwick, n.d). In a survey of over 7500 UK doctors, Wise (2018) highlighted the prevalence of such negative workplace environments, with 95% of respondents reporting being fearful of making errors in daily practice. In addition to this finding, 78% of respondents reported that NHS resources were inadequate and that this significantly affected the quality and safety of patient services. Although promoting resilience within the workplace can positively benefit individual wellbeing and reduce work-related stress, the term, in certain contexts, can be interpreted within the workplace as “stop complaining” (Lewis, para. 7), thus paradoxically creating a more challenging work environment. Moreover, promoting resilience within the workplace can assign individuals the responsibility to achieve outcomes while tolerating unacceptable levels of workplace demands (Mahdiani & Ungar, 2021).

In its broadest sense, the aim of resilience-based research is to understand how positive outcomes are achieved when experiencing challenging situations (Bowers et al., 2017). Although no robust unifying model of resilience in the organisational setting exists, positive relationships are key at all levels to achieve outcomes when experiencing adversity. Individual wellbeing is the primary outcome at the individual level of resilience (Masten, 2001), whereas for organisations, positive outcomes include financial viability and longevity (Lengnick-Hall et al., 2011). Between these domains however, team resilience is the maintenance or return to normal team functioning when experiencing workplace challenges (e.g., achieving team goals when faced with excessive job demands that can result in work related stress; Gucciardi et al.,

2018). Within organisational systems theory, between the macro (organisational) and micro (individual) systems, meso systems such as multi-disciplinary ward teams exist which combine both perspectives to provide an integrated focus on both top-down and bottom-up processes, thus making it possible to develop theoretically rich and relevant practical interventions with multilevel implications (Kozlowski & Klein, 2000).

At present, team resilience is not as well explored or promoted within the healthcare literature when compared to research focused on conceptually linked organisational or individual resilience (McCray et al., 2016). Although individual resilience interventions have been conducted within the group setting which have resulted in secondary positive team outcomes as a desirable by-product, no specific team resilience interventions are identified within the literature. Although building individual resilience within the healthcare workforce intends to improve individual ability to thrive in stressful situations (Gallo, 2019), it does not equate to adequate support for teams. Hartwig et al. (2020), state that although the stress literature supports the study of resilience, this is mostly focussed on the individual and further research is needed to explore how team processes can facilitate adaptive responses to job demands to maintain team functioning and tackle work-related stress.

1.4 Chapter summary

Considering the research context and the specific directive set out by local NHS Trust stakeholders, the purpose of this thesis is to promote positive relationships within multi-disciplinary ward teams to tackle the wider issue of work-related stress in the healthcare setting. To this end, drawing on team resilience as the primary theoretical framework to underpin the approach of this thesis is most appropriate. Chapter two presents an in-depth examination of team resilience literature to firstly position the current work in this theoretical context, and then to inform the specific aims and scope of this thesis.

CHAPTER TWO

A Literature Review of Team Resilience

2.1 Chapter overview

The chapter presents an in-depth appraisal of team resilience, justifying it is a relevant theoretical framework to underpin the approach of this thesis to promote positive healthcare team relationships to help tackle work-related stress.

2.2 Conceptualising team resilience

2.2.1 *Defining team resilience*

Numerous definitions of team resilience are used within practice (Degbey & Einola, 2020). A frequently used definition posed by West et al. (2009), states that team resilience “provides teams with the capacity to bounce back from failure, setbacks, conflicts, or any other threat to wellbeing that they may experience” (p. 253). Chapman et al. (2018), evaluated eleven definitions of team resilience against six measures of definitional quality (Podsakoff et al., 2016), finding that all definitions fell short in at least one area. Despite this, Podsakoff et al., highly rated Morgan et al. (2013), definition of team resilience: “A dynamic, psychosocial process which protects a group of individuals from the potential negative effect of stressors they collectively encounter. It comprises of processes whereby team members use their individual and collective resources to positively adapt when experiencing adversity” (p. 552). Although further conceptual clarity is required, Degbey and Einola (2020) note that many definitions share thematic commonalities such as a stimulus (i.e., experienced adversity) and a response (i.e., positive adaptation).

2.2.2 Theoretical models of team resilience

In recent literature, several comprehensive theories of team resilience have emerged. Gucciardi et al. (2018), propose a multilevel model for the emergence of team resilience in which exposure to adversity triggers a positive adaptive response that maps onto the input-mediator-outcome-input (IMOI) framework of teamwork (Ilgen et al., 2005). This model rationalises the emergence of team resilience as a dynamic interaction between the capacity of the team (input) to change team processes in response to adversity, the process by which a team appropriately transforms inputs to outcomes (mediators), and context-specific outcomes of team interactions relating to common team objectives (output).

Like Gucciardi et al. (2018), Mistry et al. (2015), propose a theoretical model of team resilience that is guided by the IMOI framework but based on biological adaptive systems which exemplify how teams positively adapt to adversity. Mistry et al., define team resilience as the capacity of a team to bounce back from adversity, emphasising that teams perceive an adverse event at increasing severity markers, namely setbacks, hardship, and failure, based on pre-existing team capabilities. In response to this tiered categorisation of experienced challenges, Mistry et al., propose that teams engage in three corresponding adaptive processes to return to normal functioning: (a) homeostasis – motivation and confidence building in response to perceived setbacks; (b) allostasis – team learning and reflexivity in response to perceived hardships; and (c) peristasis – external system monitoring in response to perceived failure. These team processes broadly align with the multilevel model of team resilience (Gucciardi et al.), as the impact of perceived severity on team functioning manifests in several trajectories: (a) resistance trajectory - minimal impact to team functioning, (b) bounce back trajectory - initial negative effects followed quickly by recovery to competent functioning within an appropriate timeframe, and (c) recovery trajectory - deterioration in functioning followed by a gradual return to competent functioning.

Building on this framework, Hartwig et al. (2020), propose a multilevel model of workplace team resilience, adopting many of the key tenets from both Gucciardi et al., and Mistry et al., by emphasising team resilient behaviours and the interactive relationship between individual team members and the wider team. Although the focus is on workplace team resilience, input from organisational resilience literature is absent within Hartwig et al., model, denoting a reductionist approach to the concept. In contrast however, Senturk (2018), puts forward a transferable model of collective resilience placing particular emphasis on pre-existing team process and capabilities that a team requires to overcome experienced challenges and to continue normal functionality. Unlike previous models that primarily approach team resilience from a lower-order perspective, Senturk adopts a top-down approach derived from the organisational literature that adds value and context to the conceptualisation of team resilience within the organisational setting. However, this model fails to sufficiently consider contributions from individual team members, as the primary focus and the language usage relate to team and organisational system components and processes rather than individual contributions and experiences.

Advocating for multilevel interaction between teams and both higher and lower orders of resilience within the organisational context, Bowers et al. (2017), identify a range of major constructs that exist at each systemic level across each stage of the IMOI framework in terms of team resilience. Like Bowers et al., Stoverink et al. (2020), also emphasise the interaction between teams, individuals, and organisations in a model of workplace team resilience by identifying the similarities and distinctions of resilience at each systemic level in terms of function, structure, and resources. Although primarily the same authorship as of the stasis model of team resilience (Mistry et al., 2015), Stoverink et al., move in a different direction by focusing on team process through the lens of Hobfall's (1989) conservation of resources

theory, in the context of Weick's (1993) organisational resilience theory to explain the emergence of team resilience within the workplace. Overall, each of these theories provide comprehensive yet varying conceptualisations of team resilience and highlight different aspects of the process, thus demonstrating conceptual complexity.

2.2.3 Interaction between team, organisational & individual resilience systems

Each of the discussed theoretical models of team resilience interact to differing extents with higher and lower order systems of resilience. At an organisational level Vogus and Sutcliffe (2007), define this as "the maintenance of positive adjustment under challenging conditions such that the organisation emerges from those conditions strengthened and more resourceful" (p. 3418). Similarly, Luthar et al. (2000), refer to individual resilience as a "dynamic process encompassing positive adaptation within the context of significant adversity" (p. 543), "harnessing biological, psychosocial, structural and the cultural to sustain well-being" (Panter-Brick & Leckman, 2013, p. 333). All three conceptualised resilience systems within the occupational context involve key elements: (a) a functioning system negatively impacted by experienced adversity, and (b) positive adaptation strategies to return to normal functioning.

Individual resilience is a well-researched psychological concept growing out of child-focused research with a range of theoretical models seeking to provide a comprehensive framework to understand the relationship between adversity and positive individual outcomes. Compensatory models pose resilience as an independent counterbalancing factor in this relationship hypothesising that specific individual characteristics counterbalance the negative impact of adverse events (Pangallo, 2014). For example, Kumpfer and Hopkin (1993), reviewed alcohol and drug abuse prevention research and highlighted seven compensatory factors including: optimism, empathy, insight, intellectual competence, self-esteem, direction

or mission, and determination and perseverance (Ungar, 2004). Based on this conceptualisation of resilience, Connor and Davidson (2003), recognise resilience as a trait representing a “constellation of characteristics that enable individuals to adapt to the circumstances they encounter” (p. 2). Eley et al. (2013), through quantitative measures of personality traits and resilience found that resilience was positively associated with a personality trait pattern that was persevering, responsible, optimistic, and cooperative, thus recommending that personality traits be considered when seeking to enhancing resilience.

Opposing the view of resilience as a trait, protective models of resilience recognise individual resilience as an interactive process between personal attributes and adversity. In a classification of factors that promote psychological resilience, Dunkel et al. (2011), identify several main categories: (a) personality or dispositional, (b) self and ego-related, (c) interpersonal and social, (d) world views and culturally based beliefs and values, and (e) behavioural and cognitive skills. For example, in addition to the compensatory factors highlighted within alcohol and drug abuse prevention literature, Kumpfer and Hopkin (1993), also identify several protective factors that enabled individuals to moderate the effect of exposure to the experienced adversity, including: interpersonal social skills, intrapersonal reflective skills, academic and job skills, ability to restore self-esteem, planning skills, life skills, and problem-solving ability. Similarly, Grant and Kinman (2014), in a comprehensive review of resilience literature investigating how resilience among health and social care professionals could be enhanced, identified reflective skills, emotional intelligence skills, self-awareness, social support, and work-life balance, as important attributes associated with resilient individuals to moderate the effect of experienced adversity. Grant and Kinman concluded that evidence-based strategies and interventions incorporating these protective factors are required to promote resilience within healthcare professionals in the workplace.

Xiao and Cao (2017), incorporate individual promotive factors into a multilevel, multi-dimensional conceptual model of resilience within an organisational system. Xiao and Cao theorise that individuals demonstrate resilient attributes (both cognitive and behavioural) through positive relationships that embody resilient teams, which in turn through team-level processes enable organisational learning, thus resulting in the emergence of organisational resilience as indicated by positive attributes such structure, improvisation, and social capital. This understanding of interacting resilience systems can be understood within the organisational behavioural level of analysis framework that outlines the interconnectedness between the individual, team, and organisation, as a holistic perspective of resilience within the workplace (Mullins, 2016). Although only a preliminary model requiring evidence to substantiate this transactional interaction between the individual, team, and an overarching organisation, it conveys the hallmarks of well-established theories of organisational resilience.

Lengnick-Hall et al. (2011), conceptualise organisational resilience as a multi-dimensional system formed of cognitive, behavioural, and contextual elements derived in both individual employees and organisational policies and practices. According to Lengnick-Hall et al., individual cognitive attributes such as expertise, creativity, and problem-solving, contribute to positive organisational practices such as localised decision-making power, fluid team-based work and job control. Similarly, team attributes such as interpersonal connections and working relationships, sharing information, knowledge, power, and accountability; encourage social interactions, expand organisational resource networks, enhance communication systems and a culture of trust and interdependence. For example, Johnson (2010), identified that organisations positively adapt functioning to overcome experienced challenges by capitalising on social capital (e.g., utilising individual employee networks). Johnson suggests that the key interest in social capital is access to networks of social relationships that can result in collective action for organisational advantage.

Expanding on the work of Lengnick-Hall et al. (2011), Duchek (2020) proposes a new conceptualisation of organisational resilience, suggesting a sequential three stage process: (a) anticipation involving proactive action, (b) coping involving concurrent action, and (c) adaptation involving reactive action. Underpinning each stage of the resilience process are essential organisational capabilities including resource availability, social resources, and power/responsibility, respectively. With regards to the anticipation stage, resilient organisations prepare for an unexpected event through resource availability. Both accessible financial and human resources are essential for developing resilience as they provide space for an appropriate response to be implemented when an unexpected adversity is identified (Murray, 2013). During such situations, adequate reserves of resources are also a characteristic of resilient organisations, as such systems have the flexibility to cope with unexpected situations (Leveson et al., 2009). During unexpected adversity, concurrent action to develop and implement solutions is driven by social resources such as those highlighted in Lengnick-Hall et al.'s model for promoting social interactions, expanded resource networks, enhanced communication systems and a culture of trust and interdependence. Following an unexpected event, Duchek (2020) suggests that adaptation manifests in positive organisational change through reflection and learning driven by sources of power and responsibility. Resilient organisations are those with localised and shared decision-making, thereby enabling flexibility within a system to generate new knowledge and implement behavioural change within smaller organisational units in a reasonable time and effort that otherwise within a rigid hierarchical system would be unrealistic (Murray, 2013).

Both Lengnick-Hall et al. (2011), and Duchek's (2020) conceptualisations of organisational resilience positively correspond with the individual resilience literature through the recognition of the importance and responsibility of promoting individual protective factors

though organisational practices (Grant & Kinman, 2014). Lengnick-Hall et al.'s, theory identifies both individual and organisational cognitive and behavioural contributions and, although team level input is not explicitly highlighted, the attributes of the contextual dimension indicate team-level contributions. For example, sharing information, social interaction, and decision-making occur at a team level because of combined individual attributes and organisational policies and processes. Rodríguez-Sánchez and Vera (2015), also highlight the interconnection between work teams and the organisation stating that as teams are commonly understood as the basic unit of organisational research (DeShon et al., 2004), it is essential to comprehensively understand team experiences and enhance team processes and practices to promote organisational resilience. Reflecting Duchek's (2020) conceptualisation of organisational resilience and expanding on this interactive relationship between organisations and work teams, Rodríguez-Sánchez and Vera note that organisational policies and practices that focus on the individuals, such as work-life balance and career development, are positively associated with resilience at an individual and team level. This two-way interaction between higher organisation and work teams is similarly observed between teams and individual team members, as effective teamwork enhances organisational, operational, and financial outcomes through promoting individual experiences such as job satisfaction, involvement, commitment, and reduced stress (Delarue et al., 2008).

2.2.4 A framework for promoting team resilience in the workplace

Reflecting on the range of theoretical models discussed so far, team resilience is a complex psychosocial construct that incorporates a range of attributes at multiple levels within an organisational system. Gucciardi et al. (2018), provide a comprehensive theoretical model, however the work of Mistry et al. (2015), and Hartwig et al. (2020), also provides valuable insights as they highlight a range of practices that are relevant to promoting team resilience within the workplace. None of these models however provide a holistic view of team resilience

within an organisational system. Therefore, building on their strengths, a framework for promoting team resilience in the workplace is put forward (Figure 2).

The proposed framework recognises the position of team resilience within an organisational system, by presenting a multilevel construct interacting with lower-order psychological resilience and higher-order organisational resilience underpinned by the IMOI framework (Ilgens et al., 2005). The IMOI framework underpins several existing models of team resilience and reflects the conceptual process of individual and organisational resilience, thus demonstrating theoretical similarity across all resilience systems. For example, following exposure to adversity which initially results in the deterioration in functioning, adaptation is required to return to normal functioning within an appropriate timeframe (Gucciardi et al., 2018; Mistry et al., 2015; Hartwig et al., 2020). Moreover, an X-Y relationship (input to output) is also observed at each systemic level of resilience within an organisational system (individual, team, and organisation). Based on these two principles of theoretical similarity and the comparable X-Y relationship, the proposed framework for promoting team resilience in the workplace is a comprehensive multilevel theoretical framework (Chen et al., 2005). Within the context of this thesis the primary purpose of the proposed framework is to provide a holistic and comprehensive conceptualisation of team resilience to inform the approach of this thesis to promote positive team relationships in the workplace to help tackle work-related stress. Thus, individual and organisational attributes are also incorporated to emphasise the holistic nature of the team resilience process. Each proposed element is discussed in-depth in the following section of this literature review.

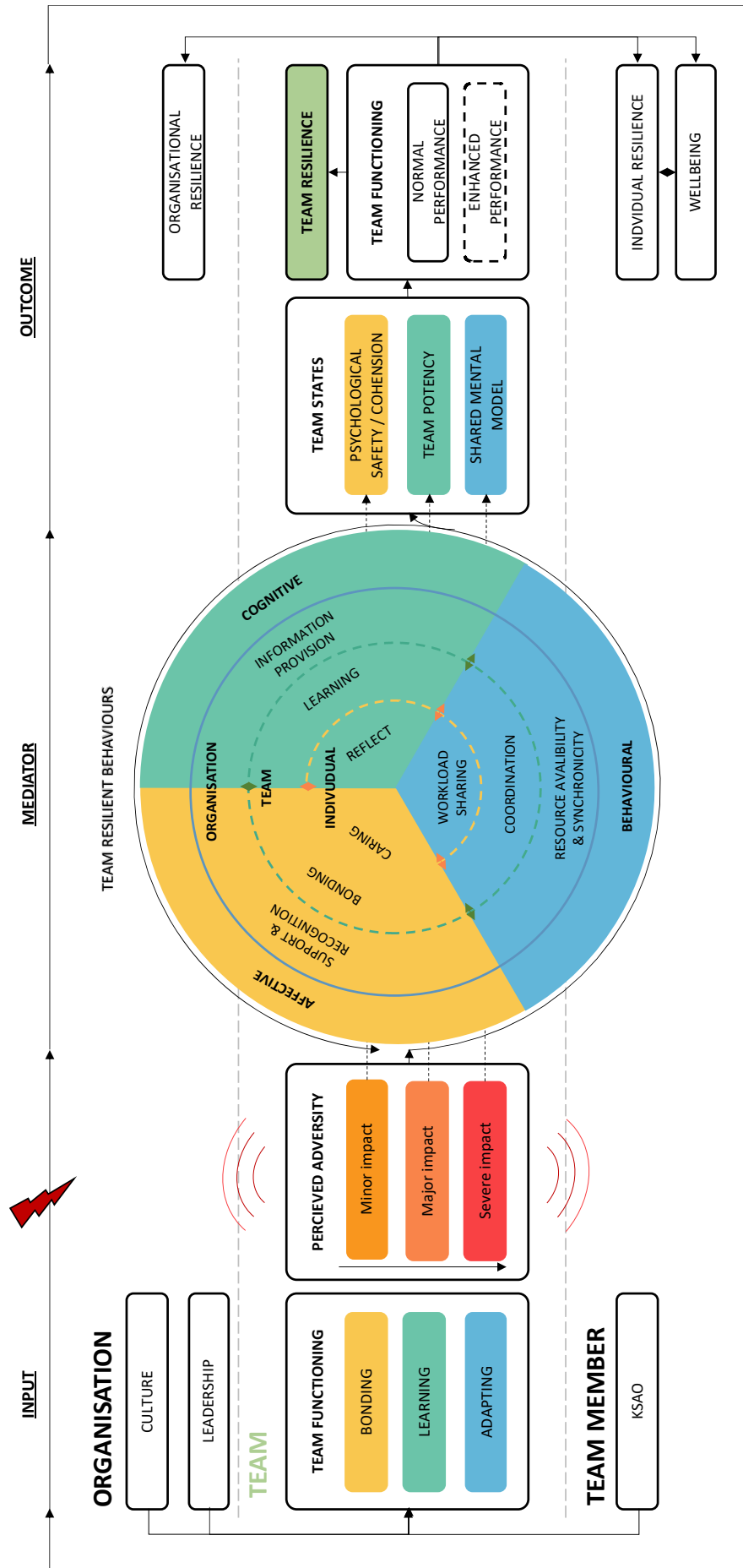


Figure 2: A framework for promoting team resilience in the workplace

2.3 Components of the proposed framework

2.3.1 *Input: team functioning*

A group of people working together can accomplish organisational objectives and meet performance targets. This however does not equate to a functioning team. Instead, a team requires members with complementary skills and a commitment to a common purpose (Katzenbach & Smith, 1993). Levi (2011), outlines key differences between working groups and teams, stating that commitment, purpose, performance, and accountability are commonly shared throughout teams but working groups have a greater reliance focus on individual contribution. The shift from the individual to the team does not diminish the individual, but rather goes beyond unitary achievements to the collective (Watson, 2011). A specific team purpose, common commitment, and mutual involvement in decision-making processes, enables teams to effectively achieve objectives. Team functioning can however vary from highly effective to disengaged teams resulting in poor performance, yet both types can emerge as resilient. To understand how to promote team resilience effectively, it is important to comprehensively understand how a team functions.

Team formation. Team functioning operationalised by performance varies across the lifespan of a team. Tuckman (1965), identifies four stages of team development: forming, storming, norming and performing; with each stage characterised by specific team features. Katzenbach and Smith (1993) associates team development with increasing team performance: working team, pseudo team, potential team, real team, and high-performance teams. Tuckman describes that during the early formation of a team no common team objectives are established or interpersonal relationships formed, thus team members are concerned with inclusion and dependency (Watson, 2011). At this pre-team stage, members still function as individuals rather than as a collective, therefore Katzenbach and Smith identify this stage of team development as a 'working group'. Team interaction here is primarily

focused on sharing information rather than collaboration, thus team outcomes are limited to the abilities of individual team members. Individual approaches to achieving team objectives can ultimately give rise to conflict within the team. Tuckman refers to this as the 'storming' stage of team development where team members compete for status and acceptance, consequently the lack of cooperation reduces performance due to individual efforts not delivering joint benefits (Tuckman & Jensen, 1977). Leadership at this stage is vitally important to focus these 'pseudo team' on common objectives and to instil processes by which members can function both independently and collectively as a team.

Looking more in-depth at team formation, the input-mediator (IM) phase of the IMOI model captures team development through affective, behavioural, and cognitive components and processes (Ilgen et al., 2005). The affective attributes of team potency and psychological safety promote team trust among members. Team potency or team efficacy is the generalised confidence in its ability or competence to perform across a variety of situations (Guzzo et al., 1993; Kozlowski, 2018). Both Gully et al. (2002), and Stajkovic et al. (2009), in meta-analytical studies found that group potency was positively related to team performance. Woodley et al. (2019), reported a similar effect, however this was not influenced by changes in team potency over time. In addition to feeling that the team is competent enough to achieve its objectives, it is also important for members to feel their team is safe for interpersonal risk taking (Edmondson & Lei, 2014). Kim et al. (2020), describe this concept, known as team psychological safety, as the 'engine' for performance outcomes. A team culture that values individual ideas and actions, enables members to adapt and take risks to achieve collective objectives and promote team learning, consequently improving team effectiveness.

In addition to establishing team trust, the second central tenet of team formation according to Ilgen et al. (2005), is planning that involves behavioural processes relating to

information gathering and strategy development. Effective communication with other team members is essential for effective information gathering and knowledge sharing, as problems with communication delays the flow of information and prevents teams from effectively functioning (Senturk, 2018). Sharing and seeking information from the external environment is also crucial to establish appropriate actions to achieve team objectives. Bui et al. (2019), in a longitudinal meta-analysis of 35 studies found that team members with different experiences were more likely to share information and communicate openly when a task required collaboration with others outside the of team. Building on this, better developed strategies that more efficiently communicate and share relevant information within teams positively influence team performance (Chan, 2009). Overall, these behavioural cooperative team working processes are essential to effective teamwork.

The final central tenet contributing to team formation is the development and maintenance of team structure, for example, norms and roles achieved through cognitive attributes such as the development of shared mental models and team transactive memory. Shared mental models (SMM), refer to the common knowledge shared by team members about tasks, working relationships, and the internal and external environment (Mohammed & Dumville 2001), which are all important categories of knowledge needed for effective performance (Senturk, 2018). SMM, formed through team communication and information gathering, enable team members to predict task needs and implement effective and timely actions based on collective knowledge, thus enhancing team performance (Bossche et al., 2011). In addition to SMM, transactive memory is also an important cognitive attribute contributing to team formation. Transactive memory refers to the collective awareness of who knows what within the team, upon which decisions can be made as to who is best placed to perform key actions (division of labour), thus suggesting that teams with more in-depth and accurate transactive memory will be more effective and efficient (Hollingshead et al.,

2012). Transactive memory systems consisting of member specialisation, information credibility and coordination process have been found to improve team performance through the mediation of knowledge transfer (Choi et al., 2010). Moreover Michinov et al. (2008), in a cross-sectional study involving 193 healthcare professionals found that transactive memory systems predicted members' perceptions of team effectiveness.

Overall, the central tenets of team formation involving various affective, behavioural, and cognitive process are all inter-connected and reliant on each other to maximise team effectiveness. As these processes are developed, team working norms and practices are established. During this norming stage, Katzenbach and Smith (1993) identifies these teams as 'performing' or 'real teams', with role clarity and purpose emerging and resulting in effective functioning and performance outcomes. Team decision-making processes and autonomous working also characterise effective functioning and commitment to the team and each other's personal growth, and success optimises performance as these high-performance teams outperform all other development stages (Katzenbach & Smith, 1993).

Team functioning. Once adequate team performance has been obtained, maintaining this level of functioning can pose several challenges. Individual team member characteristics such as age, sex, and cultural background are important to take into consideration in relation to team functioning. Teams with diverse team members have been noted to be more creative and innovative (Chan, 2011), however Kirkman and Shapiro (2001), found that cultural values have significant influence within teams and that team members from a similar cultural heritage tend to create informal sub-groups. Although the formation of sub-groups can provide similar team members with a sense of familiarity and belonging, these informal sub-groups can however detract from overall team cohesion and team identification, thus negatively impacting effective team functioning (Tiede et al., 2021). Timmerman (2000), reported a

similar observation relating to age diversity finding that tasks requiring minimal team collaboration did not affect performance however tasks that required higher team collaboration negatively affected team performance, thus suggesting that individual diversity can have a negative impact on team functioning.

Ilgen et al. (2005), refer to the mediator-output (MO) phase of the IMOI model as the functioning stage where team members maintain effective functioning through bonding, adapting, and learning processes. Team bonding, also referred to as team cohesiveness is the affective feelings that team members hold for each other and the wider team characterised by strong inter-personal team relationships such as a desire to stay together and provision of social support both inside and outside of the team context (Ilgen et al.). Strong team bonds help to manage team conflict that can arise due to team diversity, as well as significantly improve team performance, satisfaction, and viability (Tekleab et al., 2009). In addition to team bonding, adaptive behavioural attributes of teams are also important for maintaining teamwork and achieving team outcomes. Schilpzand et al. (2011), found that teams composed of members open to new experiences were associated with improved team creativity and innovation, and similarly LePine (2003), found that teams with openness to new experiences performed better in novel environments. In addition, prosocial attributes of team members such as the willingness to help others and share workloads are positively associated with effective team functioning (Atkins, 2019). The final central tenet contributing to effective teamwork is team learning. This cognitive process, according to Ilgen et al., involves both learning from high performing as well as weaker team members. Welp et al. (2018), found that teams with integrated team learning who routinely engage in reflective practices were more agile and responsive to change, thus able to continuously maintain a high-level of functioning. Moreover, on-going team learning improves team formation components and

processes such as team communication, shared mental models, and transactive memory systems (Hassall, 2009; Mo & Xie, 2010).

Team affective, behavioural, and cognitive attributes are vitally important to develop and maintain team functioning as teams consist of unique members each with individual experiences and abilities that influence the wider unit. Overall, the IMOI model provides a comprehensive evidence-based understanding of important team attributes and processes. In terms of team resilience, both Gucciardi et al. (2018), and Senturk, (2018), recognise that underpinning resilient teams are strong human capital resources held by individual team members and robust team processes that result in effective interactions within a team to maximise functioning when facing adversity. Senturk further emphasises features of resilient teams such as effective communication and information-gathering systems, social support networks, and decision-making structures, to be essential team processes for continued team functioning when experiencing challenging working conditions. These pre-existing resilient attributes align with the characteristics of effective teams that have been discussed, thus establishing the core attributes and processes that underpin generalised team functioning.

Teamwork in the healthcare setting. Considering the proposed framework for promoting team resilience in the workplace, it is important to understand the pre-existing system design of UK healthcare teams to establish the extent to which they may emerge as resilient when faced with specific workplace challenges, as well as identify areas where additional support is required to enable teams to appropriately respond to such challenges. Effective healthcare systems are dependent on effective teams, thus due to the increasing complexity of care, sole practitioners cannot sufficiently provide the best outcomes for patients therefore the need for effective teamwork to deliver high-quality care is a necessity (Babiker et al., 2014). In a review of healthcare team-working practices, Iliffe (2008), identifies three levels of

collaboration. Firstly, a nominal team where disciplines work independently but in contact, secondly convenient teams which follow a hierarchical structure and disseminate tasks accordingly, and finally, committed teams which are characterised by integrated working between team members. Corresponding with these three-levels of healthcare team collaboration, CNMTL (n.d.) outline several team models and structures that exist within healthcare systems with specific purpose, values, and features to deliver expected outcomes effectively and efficiently. Within UK practice, common team structures include multi-disciplinary teams (MDT) and inter-disciplinary teams (IDT), that focus on achieving team outcomes through differing levels of interaction in terms of task allocations, responsibility and team relationships (McCray et al., 2016).

Within UK acute health and primary care settings, MDT are the most common team structures (Drach-Zahavy & Freund, 2007), where two or more professionals from different disciplines aim to provide a broad range of services to patients through the simultaneous implementation of specific care plans from various health, care, and allied professionals (SCIE, 2018). Within this model, teams are organised with members from appropriate disciplines co-existing or working separately from each other but in parallel and responsible for different aspects of patient care (Malin & Morrow, 2007). The MDT approach to patient care is commended for delivering a broad range of services as it maximises resources and facilities (SCIE, 2018), bringing together expert knowledge for holistic patient care (Iliffe, 2008), as well as reducing the burden on acute care systems due to a focus on preventative care (Schor et al., 2019). Despite the advantages of multi-disciplinary working, this model can make members feel responsible for only their own individual contribution within their clinical discipline remit, thus leading to unequitable sharing of responsibility to achieve team outcomes (Landry & Erwin, 2015). Furthermore, Ferguson (2014), notes that these teams are less likely to develop a cohesive care plan as each team member is responsible for conducting

specialised treatment plans to achieve individual goals with limit interaction with the wider team. This lack of integration can result in reduced team commitment and shared purpose, that ultimately negatively impacts patient outcomes.

In contrast to MDT, interdisciplinary teams (IDT) work interdependently to achieve common goals through action-planning, decision-making, sharing resources as well as responsibilities (Victoria, 2003). To achieve these team outcomes, each member utilises individual knowledge, skills, abilities, and other skills (KSAO) to work towards shared goals, and through planned interaction IDT can produce evidence-based conclusions, action plans and clinical outcomes through comprehensive appraisal (McCray et al., 2016). The strength of IDT structures is that they enable team members to gather a broad range of information efficiently, provide opportunities for both consistent and contradictory findings to be critically evaluated (e.g., systematic discussions based on shared information and producing evidence-based action plans), thus leading to effective team functioning as indicated by key performance outcomes (e.g., patient recovery; Wieland et al., 1996). IDT are associated with greater team cooperation due to the required integration between professional disciplines, thereby establishing a culture of positive communication and collaboration where members contribute and modify other member's work to align with shared team goals and objectives (Nancarrow et al., 2013). Ferguson (2014), summarises the key difference between these two structures as MDT work in a team, but IDT engage in teamwork.

With reference to the three-levels of collaboration within healthcare teams, MDT broadly align with a nominal team where disciplines work independently but in contact whereas IDT incorporate integrative team working practices. Considering these two common models in terms of team resilience, at face value IDT has a more robust system design that enables teams to maintain functioning to continue meeting team outcomes when faced with

challenges within the workplace. This does not mean that MDT would be overcome by adverse situations by failing to maintain team functioning. Both MDT and IDT are designed to accumulate knowledge through planning and strategy formation by drawing on the KSAO of individual team members within specific organisational contextual environments. In addition to this both team formations can consist of resilient individual team members that would further drive teams to maintain team functioning. The pre-existing structure of IDT however does give this team model an advantage over MDT, as it inherently aligns with integrative practices such as established information gathering systems and communication channels (Ilgen et al., 2005). These collaborative practices add strength to team SMM, cohesion, and situational awareness (Senturk, 2018), thus increasing the capability and capacity of IDT to respond to perceived challenges with reduced impact to team functioning.

Through qualitative interviews with health and social care managers, McCray et al. (2016), explored team resilience within the UK healthcare setting and associated MDT and IDT structures with Hudson's (2007) pessimistic and optimistic models of team working. As such, they further characterise MDT as being more distinctive compared to IDT which is more collaborative in approach to team functioning in terms of collective knowledge, power, accountability, and culture. Although within the acute healthcare setting MDT are more common than IDT (SCIE, 2018), the limitations of this pessimistic model of team working are recognised and positive steps towards developing more organic and collaborative teams are being made to better achieve team objectives (Jessup, 2007). McCray et al., highlight the importance for considering variations in healthcare team models when seeking to promote team resilience within the healthcare setting, to maximise the benefits for healthcare teams through appropriate and relevant intervention design and practices.

In addition to variations in healthcare team models, consideration for intra-team factors is also important, due to the interactive relationship between individual team members and the team unit. Ifille (2008), states that team member differences such as professional groups, employment status, cultural differences and multiple team membership need to be considered as these can be barriers to team working, detracting from the ability of a team unit to maintain functioning when experiencing challenging situations. Sull et al. (2015), in a cross-sectional survey examined NHS staff individual resilience across several demographic factors. Based on 845 responses, Sull et al., revealed that staff working fulltime hours (37.5) or above 18.75 hours a week, rated their resilience higher than staff working fewer than 18.75 hours per week. To date no known research has explored differences in resilience based on employment hours considering reasons for various working hours (e.g., child-care, job-level offering flexible hours), however this is an important team demographic to consider as in 2021, 12% of NHS employees were not full-time employees (NHS, 2021) and over 120,000 bank workers were registered across a variety of role (NHS Professionals, 2021). Overall, this means that at present a significant proportion of the healthcare workforce would potentially benefit from interventions seeking to improve workplace resilience. Although the focus of this research study was on individual resilience, it can be inferred that team resilience would also be influenced by staff employment status as staff with flexible working contracts may not interact within teams to the same extent as full-time employees due to less engagement with team goals, identity, and other members due to reduced interaction and availability.

Another important aspect of teams to consider are inter-professional working relationships. An important collaboration is the nurse-physician working relationship in the delivery of patient care as both physicians and nurses can benefit from mutual-interdependent working relationships (Stein et al., 1990). Although distinct professions, developments in healthcare practice in combination with financial challenges and insufficient

staffing levels throughout the NHS have resulted in blurred professional role boundaries (Coombs, 2004). Consequently, it is recognised that there is a need to focus on healthcare team working relationships to foster and encourage effective and mutual-interdependent working relationships (The Health Foundation, 2017). A final important aspect of teams is the length of team membership and experience. Gillespie et al. (2009), explored the influence of personal characteristics on nurse resilience finding a modest but significant association between age, years of work experience, and resilience. Sull et al. (2015) however found a weak but significant positive association between age and resilience, but no correlation between length of service and resilience was revealed. These findings suggest that healthcare staff personal characteristics such as age, length of team membership and experience, can exert a positive influence on resilience within the workplace. Although their study did not specifically aim to explore the impact of team demographics on team-level resilience, these findings do indicate that this is an area of research that needs exploring further.

Overall, further research to explore the influence of healthcare team characteristics on resilience is needed. Although this is not the primary focus of the thesis, research activities may shed light on these areas. Having now established in-depth knowledge regarding the 'input' component of proposed framework in term general team formation, team functioning, and common team structures within the healthcare setting in relation to team resilience in the workplace, the impact of experienced adversity on team functioning is explored, followed by how teams positively adapt and return to normal functioning to emerge as resilient.

2.3.2 Trigger: perceived adversity

The term adversity is commonly used to refer to various challenging situations, however what qualifies as adversity is the subject of continual debate. The concept of adversity has been primarily explored within the context of individual resilience defined as known negative

situations associated with adjustment difficulties (Luthar & Cicchetti, 2000; e.g., catastrophic life events). Sarkar (2014), argues however that only qualifying recognised negatively labelled events as adverse is a fundamental misconception as positive events can also be associated with adjustment difficulties (e.g., moving to a new house). On this basis, qualifying an event as 'adverse' is better assessed in terms of impact that the event has on normal functioning. Adversity within the psychological resilience literature has historically focussed on events that are noted to present sufficient risk (Sheffi, 2005). Wright (2003), exemplifies the impact of adversity as resulting in poverty, homelessness, child maltreatment, political conflict, and disaster, with each of these examples and the labelled description of perceived adverse events typically denoting major or severe situations associated with significant consequences. Davis et al. (2009), argue however that most people do not experience such tragic circumstances, but rather experience localised, moderate challenges. Such challenges have been described in more recent definitions of resilience as stressors or minor adversity (Sutcliffe & Vogus, 2003). This conceptualisation amplifies the relevance of resilience beyond major tragic events to situations that are more likely be experienced in everyday life (Senturk, 2018).

Looking more closely at the severity of an event perceived by a team, as previously discussed Gucciardi et al. (2018), propose three trajectories of team functioning following an adverse event aligning with Mistry et al. (2015), characterisation of adversity experienced at increasing severity markers (setback, hardships, and failure). This tiered categorisation of the perceived event severity aligns with the individual resilience literature of severity continuum where the perceived severity of adverse events varies from person to person (Lazarus & Folkman, 1977; Chen & Miller, 2012). The impact of perceived adversity on specific team processes and attributes also varies from team to team based on team characteristics and the nature of the adversity. For example, newly formed teams which are still developing and refining affective, behavioural, and cognitive team processes, will perceive challenging

situations more severely in terms of the impact on team functioning compared to well-established, high functioning teams with robust and effective attributes and processes (Senturk, 2015). Although adverse events impact each team differently, Mistry et al.'s three-tier classification of event severity provides a common framework to inform appropriate and adaptive team responses to facilitate a return to normal team functioning. Due to the uniqueness of perceived severity on functioning, labelling an adverse event in terms of impact using generic terms such as minor, major, and severe impact is viewed as more helpful than labelling an adverse event in terms of consequence on team functioning (setbacks, hardships and failure, respectively).

Whereas Gucciardi et al. (2018), and Mistry et al. (2015), agree in terms of the tiered perceived impact of adversity on team functioning, Senturk (2018) and Hartwig et al. (2020), do not explicitly incorporate a severity continuum or explore different trajectories of team functioning. These frameworks do however concur with Green et al. (2010), who argues that adverse situations often overlap rather than occur in isolation, thus the accumulation of perceived low to moderate events additively amount to adversely impacting team functioning over time. Recognising the accumulative nature of adversity aligns with the temporal nature of team resilience as a single adverse event may occur in a short space of time (e.g., major incident resulting in high number of hospital admissions), whereas other events may gradually amount to adversity event over an extended period (e.g., recruitment challenges). Recognising adversity at increasing severity markers enables teams to implement appropriate responses when experiencing a lower level of impact on team functioning, rather than only responding when team functioning has already been severely impacted.

Adding to the conceptual complexity of perceived adversity, Gucciardi et al. (2018), state that adverse events can be understood in terms of both teamwork-based adversity, referring

to the interpersonal processes for achieving team objectives, and task-based adversity that relate to specific activities or tasks performed by the team. These two areas in which adversity are experienced by a team highlight the importance of skill and expertise in both team processes and task ability, as well as demonstrate the relationship between team and individual level resilience. For example, a task-based adversity may only be experienced by one individual team member and so only requires an individual response, thus impacting individual resilience and wellbeing. However if this experience of adversity has an impact on team level functioning, this then requires a team level response, thus initiating the potential for the emergence of team resilience. Overall situations that present a direct threat to either team level processes or individual team member activities that can be perceived as team level adversity based on the impact to team functioning, are multilevel experiences of adversity within the team context and illustrate the interactive relationship between individual team members and the wider team unit.

According to Mistry et al. (2015), the 'input' component of team resilience when mapped onto the IMOI framework is an adverse event that stimulates the emergence of team resilience. While adversity can be understood as an initiating event that triggers a response, by visualising adversity as the input, the pre-existing functioning specific to the affected team is not fully recognised within this model. Therefore, when developing an intervention to support team recovery based on this conceptualisation, this may result in activities that are too generic or lack relevance. In slight contrast to this view, Gucciardi et al. (2018), Hartwig et al. (2020), and Senturk (2018), all conceptualise exposure to adversity as an event that independently triggers a positive adaptive response guided by the IMOI process. The 'input' in these models of team resilience does not refer to the adverse event, but rather to the pre-existing functioning of the team, as previously discussed this difference in the interactional positioning between the stimulus and the response process draws out a significant variation

in how team resilience is conceptualised and influences how practical support can be provided to teams. Although predicting the impact of an unexpected event on a team is challenging due to the complexity and variability of team functioning (Chmitorz et al., 2018), an awareness of pre-existing team strengths and weaknesses about affective, behavioural, and cognitive team attributes and processes, will maximise the potential for a team to positively respond to experiences of adversity and emerge as resilient.

2.3.3 Mediator: positive adaptation

Having experienced an event as adverse based on varying levels severity, a team must positively adapt behaviours through the utilisation of individual and collective resources to return to normal functioning (Morgan et al., 2013). The effectiveness of a team's response to experienced adversity is dependent on the capability of the unit. As previously discussed, team functioning is unique to each team based on the group capacity and processes that inform shared mental models. Well-established effectively functioning teams that have strong communication, information gathering, leadership, and other inter-personal team attributes, enhance team situational awareness sensitivity (Bower et al., 2017). This subsequently enables teams to identify the severity of experienced adversity (minor, major or severe) more efficiently and accurately, allowing the team to implement an appropriate response (Senturk, 2018). In contrast, a team that does not effectively function during periods of normality (e.g., being at an early stage of team development) can have imbalanced team roles or poorly established team processes, thus struggle to appropriately respond to the experienced adversity in a timely manner, negatively impacting team adaptation (Stoverink et al., 2021). The existing capabilities of a team will determine the nature of their response, however what determines an appropriate response varies in terms of the perceived impact and deterioration that adversity has on team functioning.

During periods of normality, teams utilise a variety of affective, behavioural, and cognitive attributes and processes to effectively function. During times of crisis, for teams to maintain or return to normal functioning a coordinated collective response involving these three aspects of teams is required. Gucciardi et al. (2018), suggest that affective coordination involves expressing contextually appropriate emotions to motivate a team response, whereas cognitive coordination involves information sharing and exchange through clear communication and information systems, which facilitates the behavioural coordination of physical actions that are observable and measurable contributing to team functioning. Within this same framework Mistry et al. (2015), suggest that in response to the three tiers of perceived adversity, teams should implement three forms of graduating team responses so to facilitate corresponding resilience trajectories (resist, bounce back, and recovery).

Responding to minor adversities. For teams experiencing setbacks or minor challenges Mistry et al. (2015), suggest that simple motivation and confidence-building activities such as maintaining a positive outlook and sharing experiences of past successes will facilitate internal team stability, resulting in the maintenance of normal team functioning. Gray (2016), led group activities that involved sharing experiences to identify descriptions of the team's 'best self' and to explore team interconnectedness and interdependence, to improve resilience and wellbeing within a healthcare team experiencing workplace challenges. These simple activities resulted in participants reporting positive outcomes in relation to team functioning. Alliger et al. (2015), in a taxonomy of 40 resilient team behaviours, suggest that following challenging situations teams should express appreciation for each other and thank people outside the team. Copeland (2020), utilised this technique by encouraging nurses to demonstrate gratitude for other team members by thanking and complimenting people each workday over a six-week period. Copeland found this simple practice had a positive impact on participant ratings of teamwork, compassion satisfaction, and fatigue. Kipling (1998), identifies social

support as the most frequently used strategy to cope with work-related stress. García-Herrero et al. (2017), revealed that the support from both co-workers and superiors had a positive impact on reducing the impact of workplace challenge on team functioning. In terms of individual outcomes, Hou et al. (2020) explored the effect of social support on mental health in healthcare workers during the peak of the Covid-19 pandemic outbreak in China. Based on 1472 questionnaire responses data analysis revealed that social support was positively correlated with resilience and both social support and resilience were negatively correlated with the mental health survey scores. This study conducted during a period of significant adversity provides strong evidence for the importance of social support and its relationship with resilience and wellbeing.

As previously noted, resilience research corresponds with the Job-Demands-Control-Support model of stress (Johnson & Hall, 1988), that highlights the importance of social support as moderator or protective factor between environmental stress and the individual. Ozbay et al. (2007), state that social support and caring relationships are vital for maintaining both physical and psychological health as evident in numerous studies highlighting both the negative consequences of poor social support as well as the positive protective effect of strong social support on individual wellbeing. Based on this evidence, interventions seeking to protect worker wellbeing by improving resilience, will benefit from prioritising social support. Overall, engaging in these internal team motivation and confidence-building activities, aligns with Ilgen et al. (2005), recognition of the importance attribute of team bonding as part of team functioning. Through the exchange of affective experiences and information team members can self-motivate and encourage each other to minimise or resist the impact of perceived low-level adversity and maintain team functioning.

Responding to major adversities. For teams experiencing a major level of adversity, described as hardships by Mistry et al. (2015), learning and reflexive activities enable teams to adapt internally to maintain a stable environment, thus enabling bounce back to achieve normal team functioning. Soon and Prabhakaran (2017), state that resilient teams adopt a learning orientation by reframing perceived challenges as learning opportunities that facilitate growth. This approach enhances team creativity and reduce unhelpful activities, enabling teams to positively adapt its functioning (Sutcliffe & Vogus, 2003). Team learning behaviours such as seeking feedback and discussing errors within the team (Edmondson, 1999), strengthens resilient team attributes such resourcefulness and perseverance (McEwen & Boyd, 2018; Lengnick-Hall et al., 2011) Similarly, Alligers et al. (2015), identify that resilient teams are able to assess challenges more quickly and accurately through team learning and reflecting on experienced challenges so to identify key issues and develop an effective action plan to return to normal functioning. Common learning and reflective practices found in resilience-related literature, particularly within the healthcare context, include reflective diaries. Liang et al. (2019), utilised an action research process to encourage student nurses to participate in reflective diaries and reflective discussion groups. As a result of these activities, participants reported enhanced resilience, confidence, and competency. Copeland (2020), encouraged participants to complete a five-minute daily journal over a six-weeks period reflecting on what participants perceived went well and not so well within the workplace. Although this learning and reflective activity was individual-based, results indicated positive collective benefits and a desire to integrate such activities into normal practice.

Sonesh et al. (2015), promoted team functioning by delivering a lecture-based, interactive 85-minute programme over two sessions, demonstrating both the relevance and acceptability of sharing and shaping knowledge within group healthcare-based resilience-related interventions. McCray et al. (2016), explored team resilience within UK healthcare through

focus groups with health and social care teams and recommended the importance of team learning practices such as team reflection and evaluating team relationships so to enhance resilient team attributes. Prioritising team learning practices to enhance team resilience within the healthcare setting aligns with Ilgen et al. (2005), identification of team learning as central component of team functioning, major theories of team resilience (Gucciardi et al., 2018; Hartwig et al., 2020; Mistry et al., 2015; Stoverink et al., 2020), and is also a viable and practical option to implement within the healthcare setting as indicated within recent literature (Copeland, 2020).

Responding to severe adversities. Mistry et al. (2015), suggest that for teams experiencing severe challenges, boundary spanning and external orientated activities will allow teams to facilitate stability through both internal and external changes to the team, thus enabling recovery over an appropriate timeframe to achieve team functioning. Ancona and Caldwell (1992), in a comprehensive review identified three distinct forms of team boundary spanning practices: firstly, vertical representation (e.g., advocating on behalf of the team with higher organisational management), secondly horizontal coordination (e.g., aligning internal and external team tasks to achieve team goals), and finally horizontal general external information search activities (e.g., seeking relevant information, knowledge, and expertise from the external environment). According to Marrone's (2010) taxonomy of boundary spanning activities, each behavioural category relates to specific outcomes for both teams and the organisation. For example, teams receive higher organisational support, organisations improve strategic decision making, and both enhance reputation by teams engaging in representative activities (Lengnick-Hall et al., 2011). On the other hand, teams engaging in coordination activities benefit from lateral support and cooperation thus attaining goals, and organisations benefit from the synchronisation of efforts, workforce development and the achievement of organisational goals (Duchek, 2020). Finally, by engaging in external

information search activities teams gain informational resources and expertise and both teams and the wider organisation improve in learning and innovation (Xiao & Cao, 2017).

Within the team resilience context, Mistry et al. (2015), suggest that these boundary spanning activities are most important when teams experience severe adverse events, as external stakeholders can provide resources, information, and other forms of support that further protect teams from excessive external pressures to enable teams to recover to normal functioning (DeChurch & Mathieu, 2009; Ancona, 1990). Engaging in boundary spanning activities is however not only beneficial for when teams experience severe adversity, as the horizontal behavioural categories of coordination and general information search are noted to result in enhanced team learning which has been identified as an important orientation for teams to adopt to appropriately bounce back from experienced major adverse events. For example, in addition to internal team learning practices, Alligers et al. (2015), also identify the importance of learning from external sources where teams can obtain assistance from external team members through the provision of knowledge, experience and resources to inform the team's adaptive response. Edmondson (1999), further recognises the importance of seeking feedback and other information from non-team-members to enhance team performance. Overall, both internal and external learning behaviours are essential mediator components of the team resilience process.

In addition to responding to major adversities, engaging with external organisational stakeholders will benefit teams experiencing minor challenges and setbacks. Edmondson (2003), suggests that engaging in such activities provide teams with external legitimacy which in turn improves internal team functioning by strengthen team social bonds. Clearly, engaging in boundary spanning practices can benefit teams experiencing any level of adversity as all boundary spanning behavioural categories aligns with Ilgen et al. (2005), components of team

functioning (team bonding, learning, and adapting), however such practices are most relevant at the point of severe crisis as internal team processes alone will no longer sufficiently return teams to normal functioning. Of the three-boundary spanning behavioural categories, vertical representation practices are most appropriate for teams experiencing severe challenges as it is at this point that teams will be required to look beyond team boundaries for higher organisational solutions and support. Vertical representation activities align with the adaptation components of team functioning (Ilgen et al., 2005). This key behavioural process for engaging with higher organisational stakeholders allows teams to access additional resources and support, therefore bolstering capabilities to respond to novel working conditions, and aiding recovery to normal functioning.

Overall, the proposed framework for promoting team resilience in the workplace recognises that the positive adaptive element of team resilience is a complex process involving various forms of coordinated processes and practices. Although a team's ability to respond is based on existing functioning prior to experienced adversity it is possible for recovery to be aided through the implementation of appropriate team practices and activities, thus facilitating the emergence of team resilience. The three categories of positive adaption in response to the three-tiers of perceived adversity is supported by the literature, however this association is not exclusive, as team learning attributes draw on social bonds and relationships, and boundary spanning behaviours also rely on strong inter-personal relationships as well as a team learning orientation. In this light, the summation of the three categories of team processes in response to increasing team adversity, is a more realistic and practical approach to inform an intervention to facilitate the emergence of team resilience, thus the proposed framework illustrates this within an interactive multi-layered cycle.

2.3.4 Outcome: emerging states

Following exposure to adversity resulting in adaptation to maintain or return to normal functioning over an appropriate period, teams can emerge as resilient. Mistry et al. (2015), pose that three corresponding levels of team states emerge in relation to the levels of perceived adversity followed by the forms of appropriate team responses required for teams to return to normal functioning. Firstly, teams who have experienced minor challenges and have engaged in motivational and confidence building activities to maintain team functioning, attain the emergent state of psychological safety (Mistry et al.). Hartwig et al. (2020), also note the emergence of psychological safety as a team state following adaptive processes but suggest that increased learning processes enhance perceived psychological safety, thus facilitating the emergence of team resilience. The link drawn between learning processes and psychological safety by Hartwig et al., more closely corresponds with the allostasis adaptive response to perceived hardships or major adversities (Mistry et al.), through implementing learning and reflective practices rather than motivational and confidence building activities. Edmondson's (1999), model of team learning supports this association with psychological safety as based on a study of 51 work teams in a manufacturing company, team learning behaviour was found to be the mediator between team psychological safety and team performance. This therefore suggests that teams that experience major challenges but can positively adapt through implementing learning and reflective activities, can attain the team state of psychological safety to return to normal team functioning and subsequently achieve team goals and normal performance.

Engaging in learning activities can also result in the team state of psychological safety, thus supporting Hartwig et al. (2020), understanding of this emerging team state. Mistry et al. (2015), further suggest however that teams who have experienced hardships and have engaged in learning and reflective activities, attain the emergent state of team potency

(Kozlowski, 2018). Team potency is again another key tenet of Ilgen et al. (2005), model of teamwork that has been positively associated with enhanced team performance. Hartwig et al., also recognise team potency as an emerging team state but do not associate this with specific team adaptive processes or practices. Rather, Hartwig et al., suggest that the shared confidence in a team's ability can motivate collective effort to achieving its objectives despite experienced adversity. This team state also relates to teams that have experienced minor and severe workplace challenges but have implemented an appropriate team response thus providing a shared confidence that drives the team towards returning to normal functioning. For teams experiencing minor challenges, implementing inter-personal social activities and affective processes, result in the emergent state of team cohesion that enables teams to develop strong social bonds and enhance trust. As a result, this positively influences individual team member's willingness to demonstrate prosocial and cooperative behaviours to overcome workplace challenges (Payne, 2007; Vanhove et al., 2015; Atkins et al., 2019).

For teams that have experienced severe challenges to team functioning and have been monitored by external systems so to return to normal team functioning, Mistry et al. (2015), suggest that these teams attain the emergent resilient state of mindfulness. Mindfulness in this context refers to a team state that is acutely aware of current and potential impact of adversity on team functioning based on the strong knowledge of current team capabilities, thus resulting in the team being able to implement sound decision-making and actions to appropriately respond to future challenges (Weick & Sutcliffe, 2001). Stoverink et al. (2020), align this conceptualised team state of mindfulness with the concept of team shared mental models (SMM) which Ilgen et al. (2005), note as an important team attribute for the development and maintenance of norms, roles, and interaction as part of the team formation process. Hartwig et al. (2020), and Gucciardi et al. (2018), also identify team SMM as an important emergent state, however both authors view team adaptive processes that result in

the emergence of team states as facilitators for the emergence of team resilience. Gucciardi et al. (2018), suggest that the emerging state of team resilience is characterised through the collective team process of developing shared perceptions of team efficacy in relation to adversity. As previously discussed, developing team efficacy or team potency is an important affective attribute central to team formation that is positively associated with team performance (Stajkovic et al., 2009). Both team efficacy and the multilevel model of team resilience (Gucciardi et al., 2018), share major similarities in terms of involving the evaluation of both human capital resources and team processes to produce desired outcomes, however the emergence of team resilience is contextualised in response to experienced adversity whereas team efficacy is understood within the generalised context. This distinction suggests that following adversity teams return to normal function with no change in team efficacy under normal conditions, but that a separate, collective mental model of team efficacy in relation to adversity now exists.

Unlike Gucciardi et al. (2018), however, Mistry et al. (2015), do not explicitly draw a distinction between team attributes and processes that occur during normal team functioning compared to these emergent states in the context of adversity. Herein lies the key point of divergence, does the emerging state of resilience only relate to when teams experience adversity or can resilient outcomes impact normal team functioning. With reference to individual resilience, Seery et al. (2010), found that individuals who had experienced prior adversity, were less affected by subsequent challenging events. Alligers et al. (2015), and Stoverink et al. (2020), also suggest that following adversity teams can better prepare for future challenges if effective minimising practices and activities such as anticipating challenges, planning contingencies, understanding current readiness, and developing processes that enable early identification of warning signs are implemented within teams. These actions further characterise resilient teams, thus support Gucciardi et al.'s proposition

that a distinctive shared mental model of team resiliency emerges in relation to adversity. This position also suggests that the emergent state of team resilience has the potential to positively influence normal team functioning by strengthening core team processes such as shared mental models of team capabilities through resilient team practices. This in turn minimises the impact of future adversity or delaying the point at which teams recognise the need to implement responsive action.

Each of these emerging states relate to key affective, behavioural, and cognitive attributes outlined in the IM team formation phase of the IMOI model of teamwork (Ilgen et al., 2005). This association suggests that not only do teams return to normal functioning but that specific team attributes are further developed or refined following experienced adversity, thus the potential for enhancing team effectiveness exists. Although the literature suggests that each tiered adaptive process can broadly result in a corresponding team state, this does not however mean that there is no overlap between associated adaptive processes and team states. In fact, as team responses to severe adversity is the summation of team bonding, team learning and boundary spanning activities and practices, consequently a mix of all three team states is likely to emerge on team trajectories towards normal functioning. Stoverink et al. (2020), model of work team resilience visualises team potency, SMM, team capacity, and psychological safety as key resilient team inputs that are further refined through the cycle of experiencing and responding to adversity. This facilitates the emergence of resilience followed by reflection and learning to further enhance these initial resilient team input resources. Overall, this process suggests that these emergent states can emerge at any level of team response to perceived challenges. This understanding does not invalidate the proposed framework which conceptualises team functioning, adversity, positive adaptation, and emergent states in terms of broad tiered categories. Rather, it distinguishes the proposal as one that is grounded in evidence-based academic literature but also serves a practical purpose

by providing non-academic practitioners with a clear, accessible, theory-driven framework upon which team resilience interventions and strategies can be developed and operationalised for use within the workplace.

2.4 Operationalising team resilience

The distinction between the emergence of team resilience and returning to normal functioning has a significant influence on the operationalisation and design of research methodologies seeking to assess team resilience outcomes. Chmitorz et al. (2018), propose three variations of study designs to test the effectiveness of resilience-based interventions: implementation before, during, or after exposure to adversity. Interventions implemented prior to adversity can be seen to maximise the pre-existing systems design of teams to prevent or minimise the potential impact of experienced adversity on team functioning. Interventions implemented during exposure to adversity would have two primary objectives: firstly, to treat the observed impact on functioning and secondly to prevent further deterioration. Finally, interventions implemented after exposure to adversity would primarily focus on treatment and recovery to normal levels of team functioning. Overall, the validity of assessment tools developed and used to quantify team resilience varies significantly.

West et al. (2009), explored team resilience by randomly assigning 308 university students to 101 teams to complete four course-related projects. Following the first team project and pre- and post- the fourth team project, team members completed a short six-item team resilience questionnaire as well as measures of team outcomes such as team cohesion, conflict, cooperation, coordination, and satisfaction. Findings revealed that team resilience was a significant predictor of team cohesion and cooperation, as would be expected based on team resilience literature (Mistry et al., 2015). Although West et al.'s study is significant and has a distinctive focus on team resilience, the team resilience assessment tool incorporated

within the study does not reflect the multidimensional construct of team resilience. The six-item measure developed to assess team resilience was an adaptation of Luthans and Youssef (2004) Psychological Capital Questionnaire (PsyCap) designed to assess psychological capacity in terms of hope, self-efficacy, optimism, and resilience. Although West et al., extracted and reframed items from each construct (excluding hope) to target teams rather than individuals (i.e., 'my team' rather than 'I'), this assessment tool only focusses on the psychological capacity of teams but fails to capture team social capacity. At face value West et al.'s (2009), measure appears to capture team resilience, however it does not consider important aspects of resilient teams such as psychological safety and team efficacy which are key emerging states of team resilience (Gucciardi et al., 2018; Mistry et al., 2015); therefore, reducing team resilience to only three dimensions of psychological capacity over-simplifies the multi-faceted construct of resilient teams. In addition to these overlooked attributes, the relationship with individual resilience is an important interaction to consider. As previously discussed, individual KSAO's are integral to team capability to respond to perceived adversity, thus failure to assess the relationship between individual and team-level resiliency further reduces the construct validity of West et al.'s assessment tool.

Operationalising and assessing team resilience through such simplistic means is a common flaw of research studies designed to specifically assess team resilience. McEwen and Boyd (2018), identified seven studies exploring team resilience through the development of specific team resilience assessment tools, of which six out of seven measures consisted of less than seven items, thus demonstrating the reductionist view of the concept of team resilience. Recognising the shortcomings of team resilience assessment tools, Sharma and Sharma (2016), developed a comprehensive measurement tool based on Morgan et al. (2013) theoretical framework of team resilience. Morgan et al., through focus interview with elite sport teams identified four dimensions of team resilience: mastery approaches, group

structure, social capital, and collective efficacy. Based on this framework Sharma and Sharma developed and implemented an assessment tool to measure team resilience within IT teams and through empirical analysis produced a multidimensional 50-item scale consisting of four main and 10 sub-dimensions: mastery approach (learning orientation, flexibility), social capital (network ties, shared language, trust), group structure (composition, task design, norms), and collective efficacy (perceived efficacy of members and perceived efficacy for team action).

Sharma and Sharma's (2016) assessment tool demonstrates strong face and construct validity in comparison to short-item team resilience measures, due its firm grounding in team resilience theory and alignment with concept models of team functioning (Ilgen et al., 2005). At present no published studies outside of Sharma and Sharma's initial questionnaire development research study has been conducted utilising this measure, thus the reliability and application is limited, however Sharma and Sharma's research does demonstrate that it is possible to operationalise the construct of team resilience, thus allowing for future in-depth and robust team resilience research studies. Despite the potential, like short-item measures of team resilience Sharma and Sharma's questionnaire or study does not explore the interaction between team and individual level resilience. Failing to consider individual attributes when assessing team resilience leaves much to be desired in terms of understanding the contribution of team members towards the emergence of team resilience.

Another comprehensive measure of team resilience is McEwen and Boyd (2018) Team Resilience at Work Scale (TR@W), a 49-item scale composed of seven components. Although the TR@W does not map directly onto a theoretical model of team resilience as does Sharma and Sharma's assessment tool, the TR@W does recognise and capture key affective, behavioural and cognitive dimensions of team resilience. TR@W components 'connected', and 'self-care' clearly resonate with the social capacity of resilient teams, whereas 'robust',

'perseverance' 'resourceful' and 'capability' relate to team potency and functioning attributes. In addition to the face value correspondence with major theories of team resilience, the TR@W scale was developed as the counterpart to the Resilience at Work scale (R@W; Winwood et al., 2013); a measure of individual resilience. The R@W, similarly, recognising the complexity of the construct, identifies seven components of individual resilience relating to psychological capacity, social capacity and individual wellbeing, thus aligning with Gucciardi et al. (2018) multilevel model of team resilience. Importantly McEwen and Boyd (2018) explored the connection between individual and team resilience through factor analysis, revealing that individual and team level resilience are strongly and significantly correlated ($r = .65$), thus being one of the first known empirical research studies to specifically measure this relationship support multilevel models of team resilience. McEwen and Boyd's (2018) research further revealed that both individual and team resilience exert influence on team engagement and team performance however team resilience is more highly correlated with both aspects of team functioning, particularly with team performance ($r = 0.84$).

The TR@W and corresponding R@W measures reflect the major characteristics of team resilience such as recognising the central interaction between individual team members and the wider team, the emerging states of psychological safety, team cohesion and SMM, as well the relationship between resilience and team performance, effectiveness cohesion, and viability as outcome measures (Gucciardi et al., 2018; Mistry et al., 2015; Senturk, 2018). In comparison to the alternative specific measures of team resilience incorporated within the literature, McEwen and Boyd (2018) study highlights the TR@W scale as a robust measure with good construct validity as it validates the relationship between team and individual resilience as well as with expected team outcomes. Overall, recognising the complexity of the concept of team resilience in terms of process and emergent outcomes, comprehensive measures that appropriately reflect team resilience theory are required to accurately assess

team resilience in practice. By developing such measures, team activities, practices and interventions aiming to promote team resilience within the workplace can be accurately evaluated to best support teams to emerge as resilient.

2.5 Chapter summary, & proposed research study

This thesis is set in the context of the rising trend of work-related stress across the NHS and also within the specific NHS Trust involved in this research project. To tackle work-related stress, organisational stakeholders identified the promotion of positive relationships within multi-disciplinary ward teams as a research priority. Team resilience is identified as the most relevant principal theoretical framework to underpin the research approach of this thesis to address the overall research problem, as promoting resilient team practices can reduce the impact of experienced work pressures on wellbeing through positive team working relationships, thereby maximising team functioning during times of adversity.

The current chapter has proposed and discussed in detail a multilevel framework for promoting team resilience in the workplace. The proposed framework recognises the position of team resilience within an organisational system, drawing on a lower-order psychological and higher-order organisational resilience theories, underpinned by the IMO framework. The proposed framework represents the understanding of team resilience by this thesis and provides a clear point of reference and evidenced-based grounding for the approach of this work. The current chapter has also highlighted the issue of limited knowledge of team resilience within healthcare practice and existing interventions utilised to promote resilience at a team level in the workplace, thus underscoring the important need to understand how team resilience can be practically improved within the clinical practice. To inform the development of healthcare-based interventions, Skivington et al. (2021), commissioned by the UK Medical Research Council (MRC) and National Institute of Health Research (NIHR),

recommends a four-stage development-feasibility-evaluation-implementation process. To ensure intervention robustness and a good return on research investment, Skivington et al., emphasise the importance of the initial evidence-based intervention development and feasibility testing stages, prior to moving onto latter large-scale evaluation and implementation research. Therefore, considering this intervention development process within wider context of this thesis, a research study is proposed to address the following research question:

Question: Can a feasible evidence-based intervention be developed to promote team resilience within healthcare teams?

The research question purposefully limits the scope of the proposed research study to completing the first two stages of the intervention development-evaluation-implementation process. The third evaluation and fourth implementation stages are excluded to ensure that proper exploration of this emerging research area can inform the development of a robust and feasible intervention within the constraints of this thesis. On this basis, research outcomes and recommendations for these final stages of the intervention development process as well as for other future research opportunities are put forward with confidence. Finally, although this research study takes place within the context of the Covid-19 pandemic, the research question focuses the thesis on developing an intervention to promote team resilience with healthcare teams in clinical practice. Although this thesis is not defined by the pandemic, this real-world healthcare adversity contextualises and highlights the relevance of this research in practice. Therefore, this thesis intends to provide a new and unique contribution to knowledge by producing an evidenced-based intervention to promote team resilience in clinical practice. The research study, through the methods employed, may also shed light on team resilience theory and conceptually similar psychological constructs, highlight areas of

deficiency and other areas of research interest. However, it is beyond the scope of this study to provide outcomes that do not directly relate to the stated research question and arising aims and objectives. Overall, in addition to the contributions to academic research, this work intends to benefit healthcare teams by providing practical insights and support to enhance functioning when experiencing challenges within the workplace, to help tackle work-related stress. The following chapter puts forward the specific methodological design and several key aims and objectives of this research study.

CHAPTER THREE

Methodology

3.1 Chapter overview

Guided by Creswell and Plano Clark's (2011) research framework, this chapter presents an appraisal of the philosophical worldview, research design and specific research methods that inform the key aims and objectives of this research study. The impact of the research context on the study design, ethical considerations, and the implementation process, are also discussed to defend the robustness and appropriateness of these research methods.

3.2 Research approach

Philosophical worldviews influence research practice by providing a set of beliefs that guide research inquires (Wheeldon & Åhlberg, 2012). As the current work conceptualises team resilience within an interactive multilevel framework involving individual and organisational systems, justification for the empirical assessment of the construct must address the influence of external structures that enable or constrain observed events. To this end, the Critical Realist (CR) worldview is an appropriate approach to guide the current study. Emerging in the 1970's as a critique of positivism, diverging at an ontological level, CR (Bhaskar, 1975), poses that reality is stratified across three domains: the empirical (aspects of reality that can be directly or indirectly experienced), the actual (aspects of reality that exist but might not be observed or experienced in some way), and the real (the structures and mechanisms that cause or influence what is observed; Darracott, 2016).

Based on this stratified ontology, the CR approach is characterised by three key pillars: ontological realism, epistemic relativism, and judgemental reality. CR understands reality as intransitive wherein reality exists independently of human knowledge, whereas the

generation of knowledge is transitive, finite, fallible and dependant on the 'knower'. Although relativism at an epistemological level is a central tenet of CR, the key principle of judgemental rationality recognises the existence of multiple perspectives of reality, but highlights that certain knowledge more closely reflects reality compared to other forms, thereby endorsing a proactive critical evaluative approach to the process of knowledge-generation (Fletcher, 2017). Albeit a complex philosophy, the current thesis adopts the CR worldview arguing for the existence of a single independent reality yet recognising that this is obscured and may never be understood in its entirety (Braun & Clarke, 2013). Within this philosophical frame, observations of team resilience occur in the empirical domain shaped by real team actions contextualised by higher order processes that enabling and constraining social structures.

Approaching the current work from this philosophical position, the ontological stance of realism (stratified across the three domains) is accepted. However, unlike positivism, the epistemic perspective of objectivism which argues that reality can be impartially observed and measured, is only tentatively agreed upon. The current research study was conducted at a time when humanity experientially shared the adverse outbreak of the Covid-19. This unprecedented public health crisis resulted in significant disruption within society. From its onset, the impact and severity of the outbreak was primarily assessed via objective and quantifiable data, such as the number of confirmed cases, recoveries and deaths, which in turn informed national and localised responses. In addition to these statistics, healthcare-specific indices such as Covid-19 related hospital admissions, infection and control measures and other assessments of the indirect impact on normal healthcare functioning, were used to indicate the effect of the pandemic on healthcare teams. Major theories support the use of objective and impartial measures relating to team functioning to determine the emergence of team resilience, e.g., team performance, engagement, and commitment (Gucciardi et al.,

2018; Mistry et al., 2015), thus suggesting that through objective research the true impact of the Covid-19-related workplace challenges on healthcare team resilience can be concluded.

Although the basic premise of realism is accepted, the assumption of naïve realism arguing that reality in its entirety can be fully observed through objective or impartial methods is approached with caution. As team resilience is a psychological concept rooted in social interaction, even robust team resilience measures and other relevant team performance indicators cannot reveal reality in its entirety due to hidden generative mechanisms and structures that enable and constrain actions (Anderson, 2020). For example, the definitions and measurements used to determine team resilience are subject to interpretation and evidence-based change and yet, although they do not provide a true reflection of team resilience due to individual differences and higher-order systemic influences, they do provide a unique and deeper insight of the concept and thus expand knowledge in this area.

Through immersion in the team resilience-related literature within the context of the Covid-19 pandemic, the position of the researcher on the nature of knowledge has broadened in the direction of subjectivism. The epistemic assumptions of subjectivism align with the ontological perspective of anti-realism, stating that there is no external truth as reality is created by individuals, but rather truth only exists within an individual who imposes meaning on the external world (Darlaston-Jones, 2007). Within this worldview, the emergence of team resilience can be seen as highly subjective as it is a social construct with no concrete parameters, thus determination is created and can vary depending on who makes the judgement (e.g., individual team members, a team as a collective unit or the higher organisation). Upon reflection it is recognised that these multiple realities are indicative of the epistemic stance of social constructionism, with knowledge constructed through engagement with the world interpreted through the lens of personal, historical, and social experience

(Crotty, 1998). This stance reflects to an extent both CR and bounded relativism which meet at the centre of the ontological scale and denote challenges of gaining objective measures of reality due to the unseen influence of social structures.

Adopting the CR view that reality is obscured, and that human knowledge cannot understand reality in its entirety, the construction of multiple theories and perspectives of the external and internal world are accepted (Braun & Clarke, 2013). Marshall and Rossman (2011), note the constructionist worldview as the dominant epistemic perspective within the social sciences as this position aligns with the assertion that the study of the social world requires a research process that reflects the distinctiveness of the human nature. This constructionist perspective is an appropriate position for social research, recognising the importance of research versatility over rigidity to comprehensively explore all avenues seeking to reveal true knowledge. The CR worldview influencing the methodological design of the current study promotes a robust research process through critical evaluation as it recognises and respects individual perspectives and knowledge of reality. From this position however the assumption that all knowledge is equal is rejected, thus the right to draw inferences based on judgemental rationality through the critical evaluation of multiple sources of knowledge generated via various means is retained. Taylor (2017), suggests that this theoretical juncture between CR and social constructionism is a valid research position, albeit philosophically 'messy', and that the adoption of both CR and weak social constructionism strikes a balance that continues to seek truth, even though this may never be obtained (Taylor, 2018).

Building on the ontological and epistemic position informing the current research inquiry, this CR approach justifies the use of multiple research methods to address the central research question. Creswell and Plano Clark (2011), identify the seemingly similar philosophy of pragmatism, as a research approach that endorses the use of both objective and subjective

methods of inquiry, but also highlights the limitations of both approaches, thus aligning with CR (Hannon, 2013). Tashakkori and Teddlie (2009), argue that pragmatism provides a set of beliefs that promote a practical and applied method to guide research implemented through a pluralistic approach. Moreover, Saunders et al. (2009), further identify that this form of applied research goes beyond basic research by focusing on improving understanding, creating solutions to identified problems and developing findings of practical relevance. The purpose of the current study aligns with pragmatic principles, seeking to contribute a better understanding and knowledge of team resilience within the healthcare setting, resulting in the development of an intervention of practical relevance. Within this context the adoption of the competing worldview of pragmatism informing the current research study design at face value would also serve as an appropriate process to address the research question.

As an alternative to both CR and pragmatism, the adoption of a constructivist research approach could also be justified due to the centrality of seeking understanding as an outcome of this thesis. A constructivist line of inquiry supports the notion of multiple conceptualisations of team resilience which are derived from social interaction. This perspective aligns with social constructivism recognising that the construct of team resilience is socially situated, and knowledge is constructed through interaction with others. Within the frame of the current thesis, minimal research specifically aims to understand team resilience in the healthcare setting. In line with this, although comprehensive theoretical models of team resilience exist, these have been constructed based on non-healthcare research, therefore the applicability of the current state of team resilience knowledge to aid a thorough understanding of the healthcare team resilience is questionable, due to the uniqueness of the situation and highly context-specific environment. In sum, an inductive research approach seeking to address the thesis aims and objectives, must be the first and foremost outcome of this research study.

Reflecting on the purpose of this research study, implementing solely constructivist informed methods within the research setting, would provide rich insight into healthcare staff team resilience, but be limited in relation to the sampled NHS staff due to the subjective nature of this inductive line of inquiry. However, from a CR position, it is argued that the outcomes of the research study conducted within a sample of healthcare staff has the potential be applied to the wider population of this specific NHS Trust using objective measures. To move towards this research goal of generalisability, in addition to understanding, multiple forms of critical evaluation would be necessary to move closer to true knowledge of team resilience within the healthcare context, thus the addition of the post-positivist research approach would bolster research outcomes. The approach of post-positivism, aligning with ontological realism, utilises a deductive method of inquiry for the primary purpose of validating current understanding. Whereas positivism primarily seeks theory-validation, post-positivism more readily subscribes to Popper's (1959) notion of falsification, in that current knowledge can be refuted by contradicting evidence (Moon & Blackman, 2014). As the post-positivist approach endorses the utilisation of multiple impartial research methods, this would therefore provide a more robust critical evaluation of knowledge relating to team resilience thus enhancing the validity of the research outcomes. Having said this, a post-positivist approach would only be a partial appropriate method of inquiry to address the evaluative element of the research question. A post-positivist approach alone would be insufficient to holistically address the research question as it would only be able to address the evaluative element of the central question.

The central research question of the current thesis is viewed to be of primary importance based on the real-world challenges faced by healthcare staff teams and the recognised benefits of practical non-healthcare team resilience research. Considering the focus of the current thesis and the major philosophical positions discussed, incorporating either a CR or a

pragmatic approach continues to emerge as appropriate sets of beliefs to guide the current research inquiry. Adopting either position would promote the mixing of both constructivist and post-positivist informed methodologies and methods of data collection throughout the research process (Sekaran & Bougie, 2013). This mixed methods research approach combines elements of qualitative and quantitative research as a positive attribute of the proposed research study as it contributes to the purpose of seeking both breadth and depth of understanding and corroboration through critical evaluation (Johnson et al., 2007). Despite the similarities between these two paradigms, differences in methodology and reasoning exist (Lipscomb, 2011), thus it is necessary to further discuss key nuances and potential implications. Although the standpoint of pragmatism is the guiding philosophy that distinguishes mixed methods research from both positivist and constructivist research designs (Morgan, 2007), this relationship can be understood from several different positions. Opposing the traditional argument for one best worldview, pragmatically informed mixed methods research adopts a pluralistic approach recognising that neither quantitative nor qualitative research methods are of themselves superior to the other but rather the most salient approach is required to achieve research outcomes. As previously discussed, CR also supports the adoption of a pluralist research design for this same rationale, but in addition also endorses the critical evaluation of knowledge to obtain a better understanding of reality.

Creswell and Plano (2011), argue from a pragmatic standpoint however, that multiple worldviews can be adopted within the mixed methods approach in relation to the employed type of mixed methods research design rather than the researcher's philosophical perspective. In this light, a research method driven worldview approach enables researchers to employ the most appropriate methods of data collection to the specific research context. Although this could be advantageous from a researcher's perspective, this position of adopting multiple worldviews based on retrospective research design over the researchers

Considering the philosophical framework discussed, research procedures informed by a constructionist worldview to address the first research aim, followed by post-positivist informed procedures to address the second research aim are deemed appropriate. Adopting this pluralistic approach enables the current study to utilise a variety of research designs and methods to collect the most salient data to firstly inform the development of an intervention, and secondly test its feasibility.

3.3 Research design

Within the broad discipline of social and behavioural research Creswell and Plano Clark (2011) identify several commonly incorporated mixed methods research designs that differ in several key areas relating to (a) the level of interaction, (b) the relative priority, (c) the implementation, and (4) the procedures for the mixing of the research strands. To best achieve each research aim, a two-phase exploratory sequential research design is favoured. This design reflects an interactive and progressive approach that aligns with the intervention development-evaluation-implementation process (Skivington et al, 2021). Although an explanatory sequential design provides a similar research process, whereby the outcomes of the initial phase inform the latter, within this design priority is placed on a post-positivist informed quantitative methodology. This deductive approach is noted however not to be suitable to meet the primary research goal of this study which prioritises understanding through an explorative process to develop an intervention. An exploratory sequential research design was adopted as it emphasised the importance of the first qualitative research phase. Creswell and Creswell (2018), identify this mixed methods research design as a suitable typology for studies that are required to implement multiple research phases so to address research aims through an idiographic approach.

With regards to the extent of the interaction, a single-phase study adopting a convergent typology would consist of interaction at an independent level reflecting a research process where the data collection and interpretation of each study occurs separately, and outcomes are only mixed during the final interpretation of the overall study. Although this design would be easier and less time-consuming to implement, this form of interaction is not suitable for the proposed study as it aims to firstly develop an intervention and then secondly test the intervention. Therefore, the connecting point of integration must occur after the independent data collection and analysis of research phase one and before phase two. This point of integration through the mutual corroboration and triangulation of outcomes achieves the first research aim of developing and producing an intervention, that is subsequently tested to achieve the second research aim.

3.3.1 Research phase 1: intervention development

Stage 1: Observational research. A research design informed by a constructivist worldview due to the focus on gaining a rich contextual understanding of team resilience within the healthcare workplace so to develop an intervention, is an appropriate approach to inform the design of this initial research phase. Qualitative research designs align with the constructivist worldview emphasising exploration and understanding through corresponding methods of data collection. McCray et al. (2016), sought to understand team resilience within the healthcare context and adopted a qualitative research approach by conducting focus-group interviews with healthcare workers, consequently producing an in-depth understanding of resilience in team-working within the UK health and social care sector. The qualitative outcomes of this study provided sound credibility through the collection of rich contextual data, due to the subjective nature by which outcomes are rationalised via an inductive research approach. Due to this closeness to the data, the qualitative research approach does however lack transferability and dependability which, within the context of the current

research study, are essential elements for the successful development of an intervention. Both generalisability and reliability are however key advantages of a post-positivist research approach that advocates a quantitative research design. Although this quantitative form of data provides a broader application of the research findings, it cannot provide the same holistic richness as that of a qualitative design (Denzin & Lincoln, 2013), and this attribute is essential to inform the second research phase. To obtain the benefits of both research designs, a combination of both methodologies will be a comprehensive and suitable approach to holistically achieve the first research aim through the first three objectives. However, the goal of enhancing understanding within this first research phase remains the priority, thus greater emphasis is placed on the qualitative methods and outcomes.

With regards to the implementation timing, a sensitive and creative participant-focused research design is required to engage healthcare staff in the recruitment and data collection process. Frontline healthcare roles are fast-paced and highly pressured, even more so within the real-world context of this thesis. Implementing both qualitative and quantitative methods concurrently, rather than sequentially, is an appropriate approach as this timing provides a pragmatic process to maximise both forms of data collection as well as being sensitive to the working environment by minimising the potential detraction of participants from work roles during the research process. Considering this, and alongside the research aims, a convergent parallel mixed methods research design typology is identified as the most suitable mixed method design to inform the initial phase of the overarching research study.

Having discussed the most salient worldview and research design informing the first phase of research, the third and final key component of Creswell and Plano Clark's (2011) research methodological framework is to identify and justify the specific research methods. Although the background literature review of the current thesis has identified the limited healthcare-

specific team resilience literature base, a further and more specific examination of the literature may potentially uncover previously unidentified healthcare team resilience research. In contrast to a narrative review, a systematic method of review provides a comprehensive and strategic search of the literature based on explicit criteria to achieve specific research outcomes (Robinson & Lowe, 2015). To this end, the incorporation of a systematic review with the following objective is put forward:

Objective 1: Conduct a systematic review of the literature to identify practices that promote team resilience within the healthcare setting

Understanding team resilience within the healthcare context is central to achieve the first main aim. McCray et al. (2016), utilised qualitative focus group interviews to explore and understand resilience within the UK healthcare setting. Focus groups allow for rich data to be generated and collected through the shared experiences of multiple participants simultaneously, on the other hand although a more extensive data collection programme may be required, individual interviews provide more in-depth experiential information due to the increased anonymity and confidentiality (Breen, 2006). Although conducting focus groups with healthcare teams would be advantageous, this is too disruptive to healthcare staff working during on-going challenging workplace conditions, as it would negatively impact team functioning during the already pressured working conditions as well as present practical challenges in terms of scheduling and recruitment. Considering these practical challenges, individual interviews are identified as the most feasible and relevant method of data collection, thus the following objective is put forward:

Objective 2: Interview healthcare staff to understand experiences of team resilience in the healthcare setting

To compliment qualitative staff interviews, quantitative surveys are the most frequently used data collection tool within social research as it is an easy to administer systematic method. In addition to the convenience and user-friendly nature of surveys, this method provides the opportunity to reach a wider audience, which is an important research goal of this first phase which will inform the development of an intervention that could potentially be used by various multidisciplinary healthcare teams. Although surveys do provide numerous advantages, outcomes can be subject to biases such as receiving socially desirable responses rather than a true reflection of participant experiences. An alternative and another frequently used quantitative method of data collection are systematic observations which provide direct behavioural measures within the contextually setting. Systematic observations are noted to provide strong internal and external validity (Suen & Ary, 1989) however this method may also give rise to socially desirable behavioural biases even more so than surveys due to the researcher's presence. Moreover, it is recognised that within a fast-paced healthcare setting with access restrictions and social distancing practices in place, observing teams within practice with minimal interference is not realistic. Considering that the qualitative interviews provide rich contextual data, a third study with the following objective is put forward:

Objective 3: Survey healthcare staff to explore perceptions of team resilience in the healthcare setting

Overall, the combination of all three concurrent research methods aim to produce valuable insights and research outcomes to inform the development of an intervention to promote resilient practices in healthcare teams.

Stage 2: intervention production. This is the central point of integration where outcomes of concurrent phase one research methods are transformed into an evidence-based intervention. A broad range of interventions seek to promote behavioural change however, these are commonly developed through unstandardised processes that risk the validity of intervention designs, stakeholder and participant engagement, and the robustness of research outcomes (Michie, Atkins & West, 2014). Considering this, it is necessary to adopt an intervention design framework to guide the current development process.

The Behavioural Change Wheel (BCW; Michie et al., 2014) intervention design protocol provides a robust guide for the development of comprehensive, coherent, and evidence-based intervention designs through a three-stage, eight step, process (Figure 3). The BCW consists of an inner layer based on firstly understanding how to facilitate the target behaviour through three central tenets: capability, opportunity and motivation (COM-B). The second and third stages of the BCW encourage researchers to explore methods that can feasibly be implemented in practice, to inform specific intervention content. The BCW systematic intervention guide provides a clear and user-friendly intervention design process that has been applied to promoting both clinical and non-clinical behaviours. Truelove et al. (2020), designed an intervention to target adult physical inactivity by promoting weekly physical activities via a mobile-app. In review of the BCW, Truelove et al. (2020) noted it as a comprehensive framework that enabled the development of an appropriate and context-specific intervention using the COM-B model and other supplementary resources. Applied within a different context, Munir et al. (2018) demonstrated the application of the BCW model to develop an intervention to reduce sitting time in the workplace. Munir et al., utilised the COM-B model to guide an initial focus group method of data collection, the outcomes of which informed the selection of appropriate strategies applied through intervention functions (education, enablement and training). Ojo et al. (2019), also utilised the BCW for a similar

purpose, however incorporated a broader range of BCT based on intervention functions (e.g., training, persuasion, environmental restructuring). Both studies demonstrate the successful implementation of the BCW for guiding interventions promoting a similar specific behavioural change but tailored towards a unique target population.

Elements of the BCW have also been utilised in conjunction with other intervention development frameworks. Hadjiconstantinou et al. (2020), in the development an NHS digital self-management programme for people with Type 2 Diabetes utilised the COM-B alongside the intervention mapping framework (IM; Bartholomew-Eldredge et al., 2016). The IM framework is a six-step decision-making protocol that has been applied to guide behaviour change interventions at multiple levels (e.g., individual, interpersonal and organisation). For example, health-related interventions such as tackling adolescent obesity through the incorporation of several relevant theoretical perspectives during the intervention design process leading to the identification of suitable opportunities to incorporate physical activity programmes (ten Hoor et al., 2017). For Hadjiconstantinou et al., the IM framework was identified as a useful and robust tool however a primary limitation was the complexity and time-consuming nature of the process.

Reflecting on the needs of this research stage, the required intervention framework must integrate the key principles of the proposed framework for promoting team resilience within the workplace, individual phase one study findings, and organisational stakeholder objectives and parameters. Overall, the adoption of the BCW intervention protocol is the best-fit model. Therefore, the following final phase one objective is put forward:

Objective 4: Utilise the Behavioural Change Wheel to design an evidence-based intervention to promote resilient practices in healthcare teams

This integration process involves each phase one sub-research study producing key recommendations based on research findings discussed with reference to the literature review presented in Chapter 2, to inform the development and design of an intervention to promote resilient practices in healthcare teams. To enhance reader understanding, recommendations are presented at the end of each corresponding chapter. The researcher reviews each recommendation within the BCW intervention framework, specifically the first two steps, to produce combined evidence-based principles to underpin the intervention to promote resilient practices in healthcare teams. Individual recommendations are grouped based on similarity in relation to both theory and practice. The researcher discusses key outputs with academic supervisors and organisational stakeholders throughout the BCW intervention design process, to strengthen and add value to the production of an intervention to promote team resilience in healthcare teams.

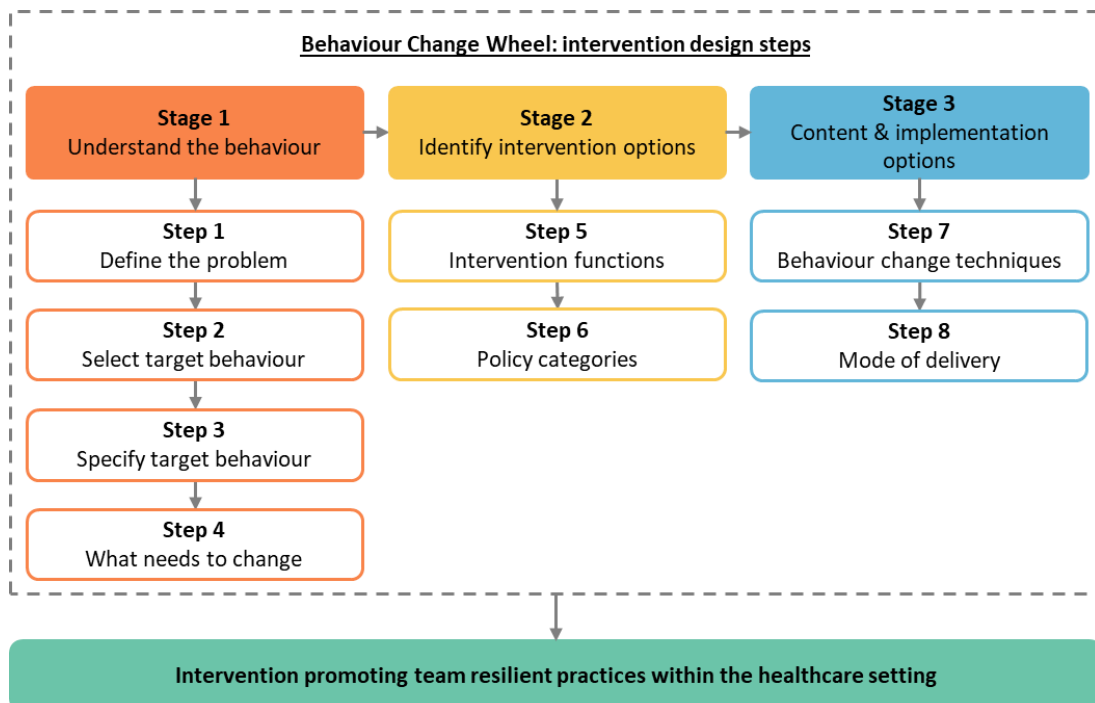


Figure 3: Intervention development process

3.3.2 Research phase 2: intervention testing

The second stage of the adopted intervention development process is to test intervention feasibility (Skivington et al., 2021), that is captured by the second research aim to evaluate intervention feasibility in healthcare practice. Despite the significant threats to the viability of this sub-research study within this real-world challenging research context, this methodological design is the most appropriate method by which to holistically assess the feasibility of intervention processes. Orsmond and Cohn (2015) agree that feasibility studies are to be initially implemented to assess the internal research and interventional processes of novel interventions, prior to pilot and full-scale studies that focus on intervention effectiveness. To holistically determine intervention feasibility, Orsmond and Cohen (2015) set out five intervention processes to assess: (a) recruitment, (b) data collection, (c) acceptability, (d) resources and management, and (e) preliminary effectiveness. A comprehensive review of intervention processes allows for areas that require improvement and amendments to be identified early in the research stage, with minimal disruption to participants, organisational partners, research time and budgets, thus maximising the potential success and effectiveness of the intervention during future full-scale implementation (Arain et al., 2010). With this in mind, a feasibility study is adopted to enable the development of a novel intervention to be thoroughly evaluated through a formalised learning process to maximise the success of both short and long-term goals.

As previously discussed, the most appropriate approach to address the second research aim is from a post-positivist theoretical perspective. Aligning with this worldview is a quantitative interventional design that emphasises robust testing of interventions and the generalisability of outcomes through its methods of data collection. Experimental research designs are commonly undertaken to determine cause and effect relationships within social research and is a suitable design for conducting intervention evaluation (Braun & Clarke,

2006). The random assignment of participants to both experimental and control conditions are utilised to emphasise internal validity of the research study by exerting maximum control over experimental conditions so to minimise the impact of external influences (Creswell & Plano Clark, 2011). As the purpose of this research study is to assess aspects of feasibility rather than the effectiveness of the intervention, a true experimental research design involving the random assignment of participants to both experimental and control conditions is not necessary during this testing stage. Although these design features would enhance the internal validity of the research study by exerting maximum control over experimental conditions, in the context of the current stage of the intervention development process, testing whether intervention processes hold up in practice is considered most important. To this end, the sequential implementation of the intervention followed by post-test evaluation measures provides an opportunity to assess the intervention in terms of acceptability, feasibility, engagement, transferability and relevance. Although a quantitative methodology would achieve verification of the intervention, to comprehensively assess feasibility a qualitative assessment in addition to the quantitative outcome measures allows for an in-depth and user-focussed understanding of the intervention's feasibility in practice as well as provides future scope for the use of the intervention to promote team during to real-world challenges (Creswell & Plano Clark, 2011).

To obtain the benefits of both the quantitative and qualitative outcomes, a combination of both methodological designs is again considered to be an appropriate approach to address the second central research aim. In addition to the benefits of mixed methods research providing a more holistic account of healthcare team resilience through the triangulation of the findings, the credibility and utility in practice of the research outcomes are also improved (Tashakkori & Teddlie, 2009). Creswell and Creswell (2018), highlight the mixed methods experimental design as a suitable typology for conducting intervention evaluation as a primary

quantitative experimental study is embedded with qualitative research methods to enhance the rigor and understanding of intervention feasibility. In terms of the implementation timing, a concurrent typology would provide a detailed understanding of participant engagement, acceptability and interaction within an intervention, however this closeness can introduce bias and negatively affect the internal validity of the quantitative experimental trial. To avoid this, a sequentially embedded research design collecting qualitative data after post-intervention quantitative measures is more suitable, as this variant maximises the benefits of the design features previously discussed, as well as allowing for an in-depth understanding and assessment of intervention feasibility. Therefore, considering the advantages and disadvantages of various forms of data collection discussed throughout this methodology chapter, a research study with the following objective is put forward:

Objective 5: Test intervention processes during on-going workplace challenges experienced by teams in the healthcare setting

Research phase two involves the implementation of a quantitative-focussed embedded experimental mixed method research design that incorporates both post-intervention evaluation questionnaire measures and follow-up qualitative focus group interviews with participating teams. In combination these methods provide a robust and comprehensive approach to achieve the final research aim and conclude the overarching research study.

3.4 Ethical considerations

Throughout the development and implementation of all study activities, research guidelines such as the British Psychological Society code of ethics and conduct (BPS, 2021), UKRI research integrity key principles (2021), and NHS Health Research Authority guidelines (2021), were carefully considered to safeguard the dignity, rights, safety and wellbeing of all

participants and to uphold research integrity. Research involved a range of methods; however, several ethical considerations informed the researcher's approach to all activities.

Firstly, from the beginning of this research project engagement with organisational stakeholders and participants in all research activities was approached from a position of mutual respect. This approach involved recognising the value of organisational stakeholders' contributions to ensuring the relevance and acceptability of study recruitment processes and data collection procedures, as well as providing feedback on research outcomes and actively taking on board input throughout the research process. This interactive approach with key stakeholders was vital for viability of this research project as data collection had to be postponed and rapidly adapted to continue within the context of pandemic-related restrictions. This position of mutual respect also influenced participant involvement as all aspect of the research was voluntary with significant effort made to ensure that all involved were explicitly informed of what the research study entailed through stakeholder engagement meetings, participant information, consent documents and briefing presentations. Respect for participant data was also a priority to protect and protect individual confidentiality, anonymity and data privacy throughout the entirety of the project. Actions such as removing personal identifying features from interview transcripts, allowing participants to create a unique anonymous participant identifier, and consideration for safe data management were implemented and adhered too (see Appendix 1 for data management plan).

Participant wellbeing and safety was another key ethical consideration. All research activities took place with participants working in long-term pressurised and challenging working environments. Due to the high-pressured setting, low intensity research recruitment and data collection procedures were developed to minimise disruption within the workplace. The researcher actively engaged with organisational partners and participants to ensure that

a positive culture was promoted throughout the study and that participants were aware and comfortable of how to report any arising issues. This approach included proactively developing virtual data collection procedures to minimise the risk of Covid-19 transmission so to promote participant health and safety in line with hospital guidelines. Consideration for the safety of participants also influenced the intervention development process by placing greater priority on virtual social interaction and encouraging the use of digital technology.

A further key ethical consideration was for perceived coercion by research participants particularly during the feasibility testing of the intervention. As all research activities were implemented in partnership with organisational partners there was a potential risk that healthcare staff may feel coerced into participating. To minimise this risk careful considerations for study recruitment procedures took place to ensure that the research was implemented in a considerate manner that did not place undue pressure on staff or individual team members who did not wish to participate in any aspects of this research project. Healthcare staff were informed through research advertisement, briefing presentations and study specific documents that participant was voluntary and would not have an impact their work role. For the intervention, organisational partners identified specific teams to approach as potential participants, again participation remained optional, and for staff who wished to participate in the intervention but no complete research data, this was also possible through well-planned intervention design and implementation procedures. Overall, as a research study implemented in real-world practice various ethical decisions were made throughout the lifespan of the project with all research activities conducted in accordance with relevant guidelines and principles in the best interest of all those involved.

3.5 Chapter summary

Chapter one identified the need and purpose of this thesis to promote positive relationships within healthcare teams to help tackle the wider issue of work-related stress in the workplace. To underpin the approach of this thesis, chapter two discussed and proposed a theoretically driven multilevel framework for promoting team resilience in the workplace to inform the central research question of this thesis: can a feasible evidence-based intervention be developed to promote team resilience within healthcare teams? To operationalise the approach of this thesis, the current chapter has justified the need for an exploratory-sequential, two-phase, mixed methods research study design. A range of considerations have been discussed to provide a comprehensive understanding to the reader of the researcher's positionality and approach to conducting this research study within the unique research context. In aid of this, Figure 4 presents a diagram of the methodological framework underpinning this research study based on Moon and Blackman's (2014) research guide, and Powell's (2020) methodological map. Alongside this, Figure 5 illustrates the integration of employed research methods within the overall body of the thesis through a visual framework of the central research question, aims, and objectives. Moving forward, chapters four to six present the specific procedural details and findings of each phase one study, culminating in the development and feasibility testing of an intervention to promote healthcare team resilience presented in chapters seven and eight, respectively.

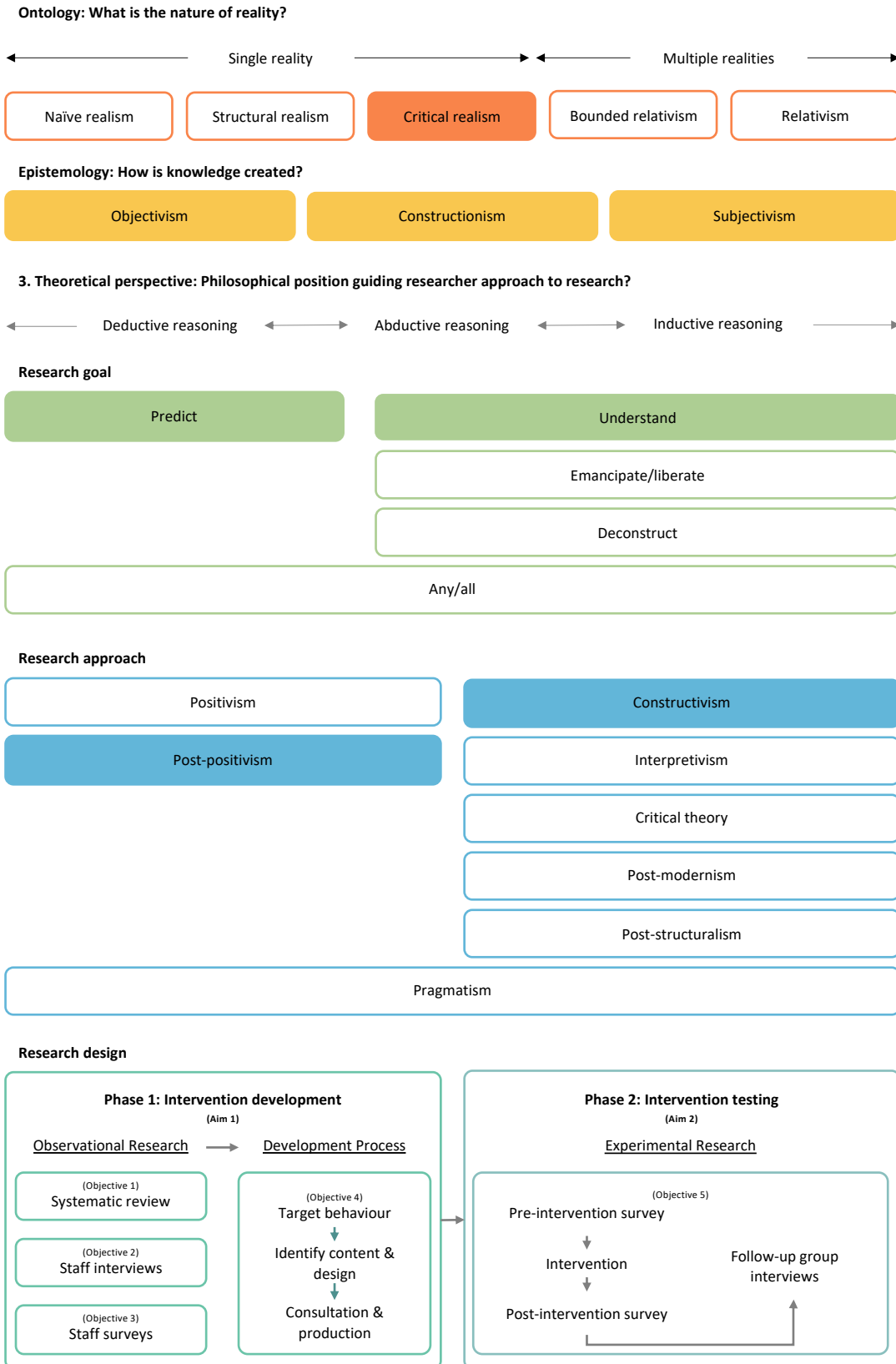


Figure 4: Research study methodological framework

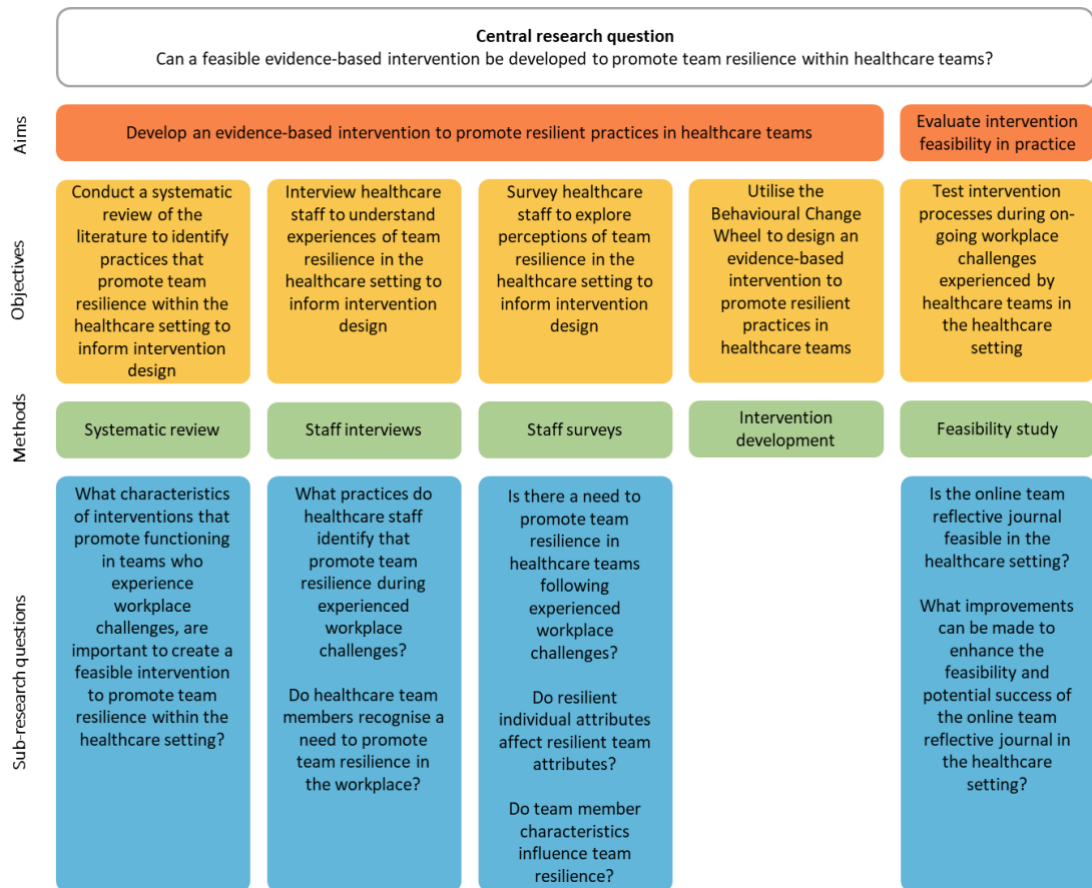


Figure 5: Thesis research questions, aims, and objectives

Chapter Four

Practices to Promote Team Resilience within Healthcare Setting

4.1 Chapter overview

The current chapter presents the data collection procedures, findings, and interpretation of the first, phase one sub-research study.

Objective 1: Conduct a systematic review of the literature to identify practices that promote team resilience within the healthcare setting

No practical interventional research specifically promoting team resilience within the healthcare setting have been identified so far within the literature. However, individual and organisational resilience research can provide relevant insight to team-level resilience, as these related organisational systems incorporate elements of the general conceptual process of team resilience. For example, study of group-based interventions that facilitate an individual response to experienced adversity, will provide relevant insights to inform the development of a feasible healthcare team resilience-specific intervention. To this end the following sub-research question is put forward:

Sub-question 1: What characteristics of interventions that promote functioning in teams who experience workplace challenges, are important to create a feasible intervention to promote team resilience within the healthcare setting?

4.2 Methods

A systematic search was undertaken from January 2020 to June 2020 and further updated between the October 2021 to April 2022, across five electronic databases: PsychINFO,

ScienceDirect Journals, Scopus, Medline, and the Cumulative Index to Nursing and Allied Health Literature (CINAHL). To maximise the capture of relevant studies, key words relating to the phrase 'team resilience interventions in the healthcare setting'. These key words were searched in combination with conceptually similar terms and synonyms to account for the variations in the relevant terminology used within the literature. The example search strategy below was appropriately modified for individual databases indexing systems using Boolean connectors to combine search terms:

1. Team resilience OR Group
2. Adversity OR Challenge OR Hardship
3. Health* [team or group or staff] OR Nurs* [team or group or staff] OR Physician [team or group or staff]
4. Intervention OR Training OR Development OR Program*
5. Resilien* OR Wellbeing OR Coping OR Stress
6. Performance OR Outcomes OR Improvement
7. Limits: none

The study search eligibility criteria outlined in Table 1 below focussed on study design, participants, interventions, and outcomes (SPIO; Robertson et al., 2015). Studies were included if they were: (a) based on either quantitative or qualitative methodological designs involving a form of intervention that specifically incorporated measures of team performance or contextual performance outcomes, (b) based on a population sample of healthcare teams including clinical and non-clinical staff directly working within the healthcare environment and have explicitly stated adverse or challenging working conditions negatively impacting team functioning (e.g., identified team needs), and (c) peer-reviewed papers published in the English language, with title and abstract available online. Including studies based on the stated

criteria ensured that the literature search identified relevant papers, thus allowing for a robust evaluation and enabling context-specific conclusions to be drawn.

Table 1: Systematic review inclusion and exclusion criteria

	Inclusion Criteria	Exclusion Criteria
Study Design	Quantitative and qualitative studies	Literature reviews, systematic reviews, meta-analysis
Population	Healthcare teams including clinical and non-clinical staff directly working within the healthcare environment experiencing challenging working conditions negatively impacting team functioning (e.g., identified team needs or challenges)	Non-healthcare teams. Teams not identified as exposed to adverse or challenging working conditions negatively impacting team functioning (e.g., identified team needs or challenges)
Intervention	Interventions designed to address the identified team needs.	No intervention. Simulated training/other training designed to solely improve team performance without specifically identified team needs.
Outcome	Measures of team performance or contextual team outcomes	Non-team performance measures (e.g., individual performance outcomes)

The quality of the included articles was assessed using the JBI Critical Appraisal Checklist for Non-randomised Experimental Studies (Tufanaru et al., 2017), the Critical Appraisal Skills Programme (CASP) qualitative research checklist and the CASP Randomised Controlled Trial Standard Checklist (Critical Appraisal Skills Programme checklists, 2013; see Appendix 2 for quality assessments). Information on study design, methodology, participants, intervention design and reported outcomes were systematically extracted from selected papers. To ensure robust reporting, the current study adhered to the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) guidelines (Liberati et al., 2009).

4.3 Results

4.3.1 Search outcomes

The electronic database search yielded 188 studies. After duplicate removal, 158 papers were removed during title and abstract screening. Reasons for exclusions included: non-research articles, studies with a non-healthcare team focus, and studies involving teams with no identifiable adverse or challenging working conditions negatively impacting team functioning (e.g., simulated team performance training). The eligibility of the remaining 19 papers were evaluated based on a detailed full-text review, consequently 12 papers were rejected. Studies involving teams that did not explicitly state adverse or challenging working conditions negatively impacting team functioning was the primary excluding criterion, followed by non-interventional research (see Appendix 3 for the study selection process flow diagram). Overall, seven papers were included in the subsequent analysis: Bruschein and Gettle (2020); Colgan et al. (2021); Gray (2016); Grymonpre et al. (2016); Huis et al. (2013); Nancarrow et al. (2015) and Sonesh et al. (2015). The systematic search yielded a heterogeneous sample, thus study findings are presented in a narrative form.

4.3.2 Characteristics of included studies

Participant demographics. All studies were published between 2013 – 2021 and were conducted in several countries (Canada, The Netherlands, UK & the USA). Across the studies a total of 84 healthcare teams participated with sample size ranging from a single team of five members (Gray) to 67 teams totalling 933 individual members (Huis et al.). Overall, the median team size = 12 members. A range of healthcare team specialisms were included, for example: orthopaedic surgery, internal medicine, palliative care and geriatric day hospital teams (Grymonpre et al.), in-patient nursing (Huis et al.), clinical obstetric (Sonesh et al.), an interdisciplinary adult cystic fibrosis care team (Bruschein & Gettle), an NHS ‘front-line’ project delivery team (Gray), interdisciplinary community-based teams (Nancarrow et al.) and

primary healthcare teams (Colgan et al.). Where stated, nurses formed the largest professional group (>85%).

Adversity/needs impacting team functioning. Included studies identified exposed to various adverse or challenging working conditions negatively impacting team functioning (e.g., identified team needs). Gray, explicitly identified the participating team as experiencing unusually adverse working conditions as they had been publicly identified as having 'serious failures in care quality', Similarly Bruschein and Gettle identified that the participating team had lost 50% of members in the past year, thus a need for resilience-based strategies for team members was required. Colgan et al., identified the high risk of burnout in primary healthcare teams. Using assessment tools, Sonesh et al., revealed a detraction in team functioning during emergent situations and each interdisciplinary team participating in Nancarrow et al., study self-identified team issues including clarity of vision, improving external communication and relationships, enhancing joint working, service development activities, improving internal communication, management, leadership, decision-making and autonomy. Grymonpre et al.'s, participating team, also through self-identification, highlighted educational needs in response to involvement as mentors in clinical placements, and Huis et al., identified a workplace culture requiring improved hand hygiene compliance.

Intervention format & delivery. Interventions implemented in response to the identified challenging working conditions were diverse, ranging in length and delivery from high-intensity facilitated training of up to 8 hours per team in a single workshop (Grymonpre et al.), to an 85-minute programme divided into two sessions (Sonesh et al.), to eight 60-minute weekly sessions (Colgan et al.). In a similar manner, Gray, delivered a three-part programme over 10-weeks, whereas Huis et al., delivered a three-part programme of 1 - 1.5hrs each guided by the team manager and an external coach over the course of six months. Nancarrow

et al., also utilised trained facilitators to deliver a six-month intervention consisting of 6 facilitated sessions and 3 half-day events as well as a resource guide to encourage individual practice. Also incorporating a multilevel intervention design Bruschein and Gettle delivered a multipronged intervention over a 3-month period with weekly intervention meetings and encouraging low-time commitment daily individual activities.

Intervention content. To promote team member resilience, Bruschein and Gettle engaged the participating team in three distinctive interventions, firstly a multilevel activity encouraging individual team members to identify three positive aspects of each person's day recorded daily in individual journals and, in addition, members shared one 'good thing' with the team on a weekly regular basis. Alongside this team activity, team members were encouraged to participate in facilitated meditation practice and a guided 10-day meditation mobile app as well as participating in short mindfulness exercises during team meetings. Finally, the participating team received a presentation on strategies to work more efficiently with less stress was delivered to the team. Grymonpre et al., also offered tailored training to meet specific team needs focussed on interpersonal and communication skills and collaborative decision making, roles and responsibilities, as determined by an assessment of interprofessional team collaboration. In a similar vein, Sonesh et al., provided team interactive training sessions (an adapted TeamSTEPPs programme) in response to pre-intervention observations, interviews and chart reviews revealing challenges to teamwork, situational awareness and decision-making. Gray, utilised both one to one and group-based coaching sessions involving a range of group reflective learning activities to explore team interconnectedness and interdependence throughout their intervention. Nancarrow et al., also used both individual and team practice to encourage teams to reflect on and action plan interdisciplinary teamwork practices in terms of individual, team, service user and

organisational outcomes. A resource guide was provided to teams that included reflective information and exercises to encourage teams to explore individual issues and actions.

Colgan et al., implemented a mindfulness-based intervention to increase resilience by engaging care staff in body scan, mindful breathing, sitting meditation and mindful-movement as well as discussions and research presentations on how to integrate informal mindfulness practices into the workday to create the structure and consistency needed to develop and maintain new responses to stress and adversity in the workplace. Huis et al., however, designed and delivered their intervention on a significantly larger scale with all teams (including control) received educational support to improve relevant knowledge and skills, reminders, and feedback on current behaviour. In addition to this, the experimental Team and Leaders-Directed strategy (TD) focussed on social influence in groups and strengthening leadership by gaining active commitment and initiative of ward management, modelling by informal team leaders, and setting norms and targets within the team. Overall, although all interventions were offered in response to various team needs and adverse conditions, content focussed on team reflection and reflective learning in practice, team communication, situational awareness, leadership and collaborative skills were most common throughout all reviewed interventions (see Appendix 4 for study intervention description summary).

Study design & findings. The research design of the included studies varied between the seven identified papers including a group-randomised controlled quantitative methodology (Huis et al.), a non-randomised controlled mixed methodology (Grymonpre et al.), quantitative (Colgan et al.; Sonesh et al.; Bruschein & Gettle) and qualitative methodologies collecting post-intervention data only (Gray; Nancarrow et al.). Sonesh et al., revealed that perceptions of teamwork, knowledge of communication competencies and situational awareness did not significantly improve, however in terms of patient outcomes a marginally

significant reduction in infants' length of stay was observed, thus indicating intervention success. In a novel approach, Huis et al., intervention was also deemed to be successful as operationalised hand hygiene through direct observations of compliant behaviour revealed a significant improvement in compliance between the SoA and the TD strategy from pre- to post- intervention and follow-up measures. Huis et al., also noted that nurses were most compliant with hand hygiene after direct contact with the patient. Also using a novel approach to promote resilience in an interdisciplinary care team, Brusche and Gettle observed that 7 out of 8 team members scored perceived stress and work exhaustion lower post-intervention, also and no non-significant decreases in the mean burnout sub scores were observed. Of the three interventions used in combination to promote resilience the 'Three Good Things' team activity received the most 'very helpful' ratings for reducing stress, increasing resiliency and increasing fulfilment at work.

In contrast to these studies, Grymonpre et al., reported higher scores on subscales of an assessment of interprofessional collaborative practice for the non-interventional control group suggesting a negative impact of the intervention. However qualitative outcomes based on post-intervention reflective evaluation, revealed several emerging themes relating to team functioning including the value of sharing skills and supporting goal attainment. Colgan et al., also reported several emerging themes relating to positive team functioning post-intervention including improved adaptive coping, enhanced team cohesion, enhanced quality of patient-provider communication and increased quality of life. Gray, reported positive qualitative outcomes relating to team functioning and identified that the programme facilitated improved team wellbeing as well as enhanced team identity, team culture and contributed towards an overall sense of team purpose. Similarly, Nancarrow et al., reported positive outcomes following intervention implementation such as teams developing and actively put into action creative strategies to address identified issues. The following themes also emerged

from team focus groups, interviews, and survey outcomes: improved team identity and situational context, improved team communication, role clarity; focus on goals and outcomes, leadership and personal development.

4.4 Discussion

The objective of this systematic review was to identify practices that promote team resilience within the healthcare setting to inform the intervention development process of the wider thesis. The systematic search identified seven papers that met the search criteria and contributes meaningful outcomes in terms of understanding practical methods that improve the conceptual process of team resilience within healthcare practice.

4.4.1 Main findings

Intervention content. A range of individualised team-based interventions were implemented in response to experienced adversity within healthcare working practice. Although interventions were tailored for each team, all interventions promoted common attributes of team capacity (i.e., knowledge skills, abilities and other attributes, KSAOs). For example, technical and educational knowledge (Huis et al., 2013; Nancarrow et al., 2015; Sonesh et al., 2015), and team processes such as team decision-making, situational awareness, reflective learning, collaborative practices, and communication, (Colgan et al., 2021; Gray, 2016; Grymonpre et al., 2016; Huis et al., 2013; Nancarrow et al., 2015; Sonesh et al., 2015). This observation that each tailored team intervention incorporated and promoted attributes of team functioning to improve team outcomes, aligns with the proposed framework for promoting team resilience in the workplace as underpinned by the IMOI framework (Ilgen et al., 2005). For example, enhancing team inputs: team affective, cognitive, and behavioural attributes (Gucciardi et al., 2018), through mediating activities: social support, reflective learning, and boundary spanning activities (Alligers et al., 2015), produces

team output emerging states to enable a return to normal functioning: team cohesion, psychological safety, and enhanced SMM (Hartwig et al., 2020; Mistry et al., 2015; Stoverink et al., 2020), thus facilitating the emergence of team resilience (chapter 2.2.4).

Although targeting common team attributes, the intervention activities of these selected studies vary significantly. For example, intervention activities included individual and team-based coaching, interactive lectures, practice-based action, video demonstrations as well as individual and team-level reflective learning discussions (Colgan et al., 2021; Gray, 2016; Grymonpre et al., 2016; Huis et al., 2013; Nancarrow et al., 2015; Sonesh et al., 2015). This observation for utilising interactive group-work as well as encouraging individual practices to promote team-level capacity and processes, appears to be an important design feature of these interventions to promote behavioural change. As perceived team adversity requires a contextual and appropriate team response, actively involving team members in the team resilience intervention development process is an appropriate and effective method to promote resilient team practices through deeper engagement with staff teams. Liang et al. (2019), conducted a resilience-promoting intervention that engaged nursing students in group reflective discussions and individual reflective diaries through a participatory action research design. Study outcomes demonstrated the effectiveness of active participatory involvement as a useful strategy for facilitating competence and resilience. Furthermore, the authors recommend active participant involvement and reflective practice as a positive contribution to the exploration, development, and implementation of future resilience-related programmes. Gray (2016), utilised a combination of individual and team-based involvement as part of their intervention to engage individual team members and the participating team in reflective learning in practice. In a similar manner Nancarrow et al. (2015), engaged participating teams in a combination of facilitated team reflective learning sessions as well as encouraging individual reflective practice through the provision of

informational resources. Moreover, adding to this, Brusshwein and Gettle (2020), encouraged reflective learning at both the individual team member and team unit level through short and simple reflective learning discussions and journal writing exercises.

Although the effects of engaging in reflective learning at either the individual or team level, and differences between oral reflection and written reflection, are not explored within these studies, reflective learning in clinical practice is well-established to positively improve both individual and team-level performance, effectiveness, and innovation (Nicol & Dosser, 2016). Carter (2013), state that reflective groups offer practitioners exclusive opportunities for learning that are not available through individual activity, such as the potential to challenge practice, bring about change and encourage new skills and knowledge. Such positive outcomes in team functioning within the context of adversity is the primary goal of an intervention to promote team resilience in healthcare practice. Although no specific clinical interventional research has implemented reflective learning tools to improve team resilience, team resilience theory supports the use of reflective learning as a positive team adaptive attribute in response to experienced adversity (Mistry et al., 2015). In addition to this, incorporating a multilevel approach to promote reflective learning at both the individual and team level to facilitate team functioning within the clinical setting supports Costa et al. (2013), recommendation that multilevel thinking and research is beneficial in terms of implementation in practice as organisations are organic integrative systems that require multilevel interventions to holistically address and explain phenomena (Roberts et al., 1978).

This shift in focus from the individual to the team does not diminish individual contribution or recognition, but rather goes beyond individual functioning and achievements to the collective (Watson, 2011). As healthcare services rely on effective team functioning, not simply groups of individuals working together (Katzenbach & Smith, 1993), the positive

benefits of promoting components of team resilience rather than only individual resiliency are demonstrated in the included studies. To move beyond the primary focus on individual resilience within healthcare training to team resilience is a necessity to appropriately and holistically equip and support healthcare teams to function during experienced workplace challenges. McCray et al. (2016), highlight the need to develop effective workforce development interventions to promote team resilience within the healthcare sector. Although the included studies in the current review are not specifically focussed on team resilience but rather only include key components of team resilience, they provide an important starting point to assess practical implications and to build effective future resilient team interventions.

Intervention format & delivery. Orsmond and Cohn (2015), state that intervention format and delivery are just as important to consider as intervention content when seeking to design a feasible intervention to implement within the healthcare setting. The reviewed papers incorporated interventions ranging from a brief 85-minute programme divided into two module sessions (Sonesh et al., 2015) to 1 – 1.5-hour sessions delivered over several weeks (Colgan et al., 2021; Gray, 2016) and even over a six-month period (Huis et al., 2013; Nancarrow et al., 2015). Cleary et al. (2018), in a systematic review of resilience intervention effectiveness observed that interventions with enhanced length (i.e., eight sessions or more), were more likely to demonstrate significant improvements in team resilience-related constructs (e.g., Mache et al., 2016; Werneburg et al., 2018). Despite varying intervention lengths, all included studies in the present work reported improvements on contextually specific team performance indicators. This observation lends weight to the proposal by Mistry et al. (2015), that due to the highly contextual nature of adversity perceived by teams the response must also be appropriate and proportionate to the nature of the team. For example, team size, availability, and commitment need to be taken into consideration. Although intervention length is not observed to have had an impact on outcome measures, the

feasibility of an intervention in terms of acceptability and retention are important to keep in mind as an extended intervention length may have a negative effect (Ingham et al., 2013). Overall, in terms of intervention length, although the evidence base does suggest that enhanced intervention length can be a feasible option, a tailored team specific and pragmatic approach to designing a work-based intervention is required to ensure interventions are acceptable, accessible, and practical for all relevant healthcare team members to engage in and benefit. This is a particularly important consideration for a team resilience interventions that intend to involve an entire healthcare team with minimal interference in the workplace.

In addition to length and duration, intervention delivery is important to consider. All included studies incorporated the use of facilitators or experts to guide and engage participants in intervention content. Salas et al. (2008), recommend that team interventions include facilitators to guide sessions, share knowledge, best practice, and ensure focused and purposeful discussions. On the other hand, Allen et al. (2018), recommend that self-guided interventions can be effective if they incorporate detailed instructions and clear processes to maximise the effectiveness of self-administered reflective tools. Nancarrow et al. (2015), and Colgan et al. (2021), each utilised a combination of facilitated sessions and self-administered practice. Nancarrow et al., noted that intervention success in terms of effectiveness, participant engagement, and acceptability was enhanced using facilitated sessions but that individual practice and engagement with activities outside of the dedicated interventional programme was positively associated with feasibility in practice. These outcomes align with a meta-analytical review that found a significant proportion of highly effective team reflective interventional studies incorporated a facilitatory role (Lines et al., 2021), however, this only accounted for 7 out of 24 studies included in this review paper. Although this finding indicates that using a facilitator to deliver reflective interventions can improve effectiveness, it also

suggests that the inclusion of a facilitator can negatively impact the feasibility of implementing workplace team interventions due to the additional resources.

Overall, the included studies within the current systematic review provide useful insight for the development of a team resilience intervention, however somewhat limited details are provided of the practical implementation and impact of interventional programmes within healthcare services. For example, although Gray (2016), provided a description of the rationale for utilising coaching methods and the general format of the 10-week programme, details for how the programme was integrated within the workplace setting are absent (e.g., coaching frequency, coaching length, was dedicated time set aside for coaching during the working day, did the programme detract from 'floor' working hours). Similarly, Colgan et al., Grymonpre et al., and Sonesh et al., do not outline these details, which are important to consider in the assessment of feasibility and external application of interventional programmes. Huis et al., provide more details about the format of the intervention and roles and responsibilities encouraged by formal and informal team leaders, however, this falls short of openly discussing challenges presented during the practical implementation of their programme. The lack of detailed methodological reporting in the included interventions limits the impact and useful application of these studies within the workplace. However, overall the diversity of these interventions strongly indicates that the solution to overcoming practical implementation challenges is through a tailored team-specific approach.

Intervention measurement tools. The key characteristics of intervention content, format, design, and delivery highlighted so far, are important to inform the development of an intervention intending to improve team resilience within clinical practice. The rationale underpinning the use of these specific interventional practices in response to perceived adversity is also important to consider when determining their potential success. A diverse

range of assessment tools were utilised to identify adversity including both external and internal measures of patient outcomes, team and individual interviews, surveys, and observations. Although a variety of assessment methods were used across the included studies, only Sonesh et al. (2015), utilised multiple methods of assessment (e.g., interviews, observation, and retrospective chart review), thus providing a holistic understanding of the adversity upon which their team intervention was based. Grymonpre et al. (2016), and Huis et al. (2013), conducted needs assessments formed of generalised, non-context-specific questionnaires and Gray (2016) only referenced external ratings, therefore the appropriateness of the subsequent corresponding interventions is unclear based on the limited insight into the extent of experienced team adversity provided.

Luthar and Cicchetti (2000), state that utilising context-specific methods of assessment more clearly reveal the nature of the experienced challenges and enable an attuned and appropriate response. For example, the pandemic has presented common challenges to healthcare teams and services across the country, such as increased care needs, resource and staff shortages (White, 2020). However healthcare teams have experienced and responded to these challenging circumstances differently based on pre-existing team capacity, thus the commonly experienced challenges presented by the pandemic uniquely impact team functioning. Despite this variability in terms of perceived team adversity, a comprehensive assessment of team experiences viewed through a standardised framework such as a proposed framework for promoting team resilience within the workplace that incorporates three tiers of perceived event severity (Mistry et al., 2015), can provide an effective basis upon which to identify and implement tailored support to specific team needs in a timely fashion. As discussed in chapter two, team bonding practices that adapt team affective processes such as social support can aid teams to maintain team functioning when experiencing minor adversities by enhancing the team state of cohesion (Mistry et al., 2015). The addition of

cognitive processes such as team reflective learning practices can further encourage teams to return to normal team functioning when experiencing major adversities by enhancing the team state of psychological safety (Hartwig et al., 2020). Moreover, the further addition of behavioural processes such as external boundary spanning practices can encourage teams to return to normal team functioning when experiencing severe adversities by enhancing team SMM (Gucciardi et al., 2018). An intervention based on these general categories of perceived team adversity in terms of impact severity, has the potential to be quickly adapted and implemented to support teams by enhancing or emphasising practices that improve specific team attributes. At face value, the proposed framework for promoting team resilience within the workplace provides a practical process to underpin a team-resilience specific intervention due to the focus on flexibility and adaptability within practice.

Keeping with intervention measurement tools but with regards to the impact of interventions on team performance outcomes, positive effects on a variety of quantitative assessment tools as well as qualitative outcomes reporting team functioning were included (Colgan et al., 2021; Nancarrow et al., 2015; Gray, 2016), alongside several context-specific performance outcome measures such as patient outcomes and desired improvements in staff behaviours (Sonesh et al., 2015; Huis et al., 2013). These positive findings from each of the reviewed papers that differ significantly in terms of team adversity, team characteristics and intervention delivery and format, yet commonly promote team level psychosocial skills, consequently resulting in improved context-specific team performance outcomes, indicate the emergence of team level resilience. These positive findings support discussed theories of team resilience in that promoting team functioning processes as well as team capacity will result in improved team performance outcomes within the context of adversity, thus indicating the emergence of team resilience (Hartwig et al. 2020; Senturk, 2018).

The heterogeneity of experienced team adversity and team performance outcome measures highlight the dynamic nature of team level resilience. Robertson et al. (2015), in a systematic review of individual resiliency interventions noted that several measures were incorporated that were related to resilience but were conceptually distinct. Robertson et al., recommends future resilience research not to utilise too broad a range of measures that may potentially divert attention from examining the true nature of resilience. Although context-specific team performance outcomes have been identified as appropriate indices of team resilience, the inclusion of specific team resilience assessment tools are required to enhance the construct and internal validity of results from non-specific performance measures as otherwise findings only indicate the emergence of team resilience at face value. For future interventions comprehensive and robust assessment tools should be implemented to assess team resilience in practice, such as the Team Resilience at Work scale (TR@W; McEwan and Boyd, 2018). The associated link between McEwan and Boyd TR@W scale and Winwood et al. (2013) individual Resilience at Work Scale (R@W) will further highlight the interactive multilevel nature of team and individual resilience and the impact of intervention that utilise a multilevel approach (e.g., individual and team-level reflective practice). The implementation of these combined measures both prior to and following the implementation of an intervention aiming to improve team resilience during on-going workplace challenges within the healthcare setting will holistically and robustly indicate the potential emergence of team resilience, thus indicating the success of an intervention in practice (Chmitorz et al., 2018).

4.4.2 Study limitations & recommendations

The number of research papers that met the eligibility criteria negatively impacts the external validity and application of the findings beyond the context of the wider research study. The inclusion requirement for papers to explicitly identify team adversity or team needs, particularly led to the exclusion of several relevant papers that met the other the

inclusion requirements. While acknowledging the limiting effect of this specific inclusion criteria, this is the distinguishing theoretical component between the linear improvement of team performance and promoting team resilience as operationalised by team performance outcomes. While interventions improving team outcomes within the healthcare setting through simulated training is common practice, papers explicitly reporting improvements in team outcomes in response to experienced adversity (thus indicating the emergence of team resilience), is less common, as highlighted by the inclusion of only seven papers in this study.

Although several papers may have been excluded in relation to this criterion, it is recognised that poor methodological quality reporting also contributed to the exclusion process. A general observation of the literature search results is that insufficient details regarding participating teams and the contextual conditions of the research studies were provided, thus increasing the risk of human error in the study selection process. This quality issue reflects the findings of Robertson et al. (2015), who, in their guidelines for future resilience training research, recommend that studies need to improve methodological reporting. More detailed and clearly stated background and participant information will enhance the team resilience literature and enable more robust reviews in this area. Overall, despite the limited sample, the papers included in this systematic review highlight the need for further team resilience-specific interventional research. Promoting healthcare team resilience practices will provide essential team support, however such interventions require sensitivity to identify specific team challenges and flexibility in the design and delivery of appropriate team resilience interventions to effectively enhance this multidimensional construct through a robust team response. To achieve this, the following recommendations are put forward to inform the subsequent development of a feasible intervention to promote team resilience in multidisciplinary healthcare teams:

- R1:* Create a standardised intervention framework that can be tailored to meet individual team needs based on the perceived severity of adversity
- R2:* Utilise a multilevel approach to intervention development and implementation within clinical practice to enhance healthcare team engagement
- R3:* Develop an intervention that promotes reflective learning through individual and team-level practices
- R4:* Consider individual team demographics such as size, structure, and team availability to inform intervention content delivery, format and time commitment
- R5:* Incorporate the TR@W and R@W scales to assess the impact of team resilience interventions on team and individual resiliency
- R6:* Develop monitoring and feedback processes to enable the intervention to adapt content and delivery to meet team specific needs based on progression
- R7:* Consider whether a facilitator is required to engage, deliver, and drive the intervention or whether a self-led intervention is sufficiently feasible in practice

4.5 Chapter summary

This chapter has presented the first phase one sub-research study highlighting important characteristics and methodological considerations for the design of an intervention to promote team resilience within healthcare teams. Findings also align with the proposed theoretical framework for promoting team resilience within the workplace. Therefore, creating an intervention that can be tailored to meet specific team needs through engagement at the individual and team-level involving reflective learning content and practice, has the potential to form the basis of a feasible evidence-based intervention to promote team resilience in the workplace. The recommendations put forward are combined with the outcomes of the staff interview and staff survey sub-research studies, to inform the development of the intervention, as presented in subsequent chapters.

CHAPTER FIVE

Healthcare Staff Experiences of Team Resilience

5.1 Chapter overview

The current chapter presents the second sub-research study with the following objective and specific sub-research questions:

Objective 2: Interview healthcare staff to understand experiences of team resilience in the healthcare setting

Sub-question 1: What practices do healthcare staff identify that promote team resilience during experienced workplace challenges?

Sub-question 2: Do healthcare team members recognise a need to promote team resilience in the workplace?

5.2 Methods

5.2.1 *Materials*

A participant study pack consisting of information and questionnaire sections was developed. Firstly, to inform and confirm study participation, the information section consisted of the University of Worcester's participant information sheet (PIS) and consent form (Appendix 5). The PIS was adapted to contain study-specific information for participants including study procedures, ethical considerations, GDPR privacy notices and contact details of the researcher, academic and clinical supervisors. The consent form was used to explicitly confirm that participants understood the study procedures, what was involvement if they decided to take part, and how their data would be used. A demographics questionnaire was included in the participant study pack (Appendix 6). The demographics questionnaire

consisted of five questions developed to gauge key participant characteristics, including both general and context-specific questions to identify relevant key factors that may influence healthcare team resilience, as indicated within the literature.

A semi-structured interview schedule was created that consisted of five primary interview questions (Appendix 7). The interview schedule included an introductory brief, interview questions and interview debrief. Interview questions were constructed to firstly encourage participants to explore and share experiences of team functioning within the context of workplace adversity through the initial three questions. Building on this context, the final two questions sought to explore and understand team resilience and practices that promote team resilience within the work environment. This tiered structural design of the interview questions reflected the aims of the current study. All materials were created in Microsoft Word for the printing and distribution of hard copies. An electronic version was also replicated and hosted on Microsoft Forms for electronic completion (University of Worcester REP code: CBPS19200004-R2; NHS No. 19/072/GHT).

5.2.2 Participant sampling, recruitment & study procedures

All research activities were restricted to online methods only. Participant recruitment commenced from August to November 2020 through non-probability purposive and snowballing sampling methods. Although both sampling techniques provide an efficient method for recruiting participants, it is noted that as participants were selected based on recommendations from stakeholders and other participants as well as individual availability and willingness to participate, this did introduce the risk of selection bias and social desirability that could potentially skew the research findings. Despite these risks, purposive and snowballing sampling were appropriate and feasible recruitment methods due to limited access to the participant population. Determining an appropriate sample size to recruit for

the current study was challenging as sample size information is often absent from relevant previous research utilising interviews to inform an intervention development process. O’Cathain et al. (2015), suggest that a sample of between 5-20 is adequate for small-scale qualitative research in feasibility studies. As the current study outcomes are mixed with other phase one research outcomes and considering the challenging recruitment context, a target sample size of between 5-8 participants was deemed adequate.

An electronic invitation that included a short study summary of research involvement was disseminated to all NHS staff in a bi-weekly email bulletin via Trust stakeholders. Healthcare staff who wished to participate in the study could contact the researcher directly via email to arrange convenient interview dates. Participants were invited to a virtual face-to-face interview hosted on the video conferencing platform Microsoft Teams. Interview proceedings were initiated by an introduction to the research study followed by the researcher providing a weblink for the participant to access the participant study pack hosted on Microsoft Forms. Participants were encouraged to read the study information pack, ask any questions relating to study participation and to complete the electronic consent form to either agree to continue or terminate the interview. Participants were reminded that participation was voluntary, confidential, and that they could decline to participate or withdraw at any time throughout the interview. Upon completion the researcher received an immediate notification and copy of the participant study pack including the consent form. Following consent to continue, the interview recording was started, and the researcher proceeded through the interview schedule questions, inserting prompts if required, followed by the interview debrief set out in the schedule. Interviews lasted 20– 45 minutes. Following interview debrief, the video recording was stopped, and participants were thanked for their involvement and reminded of their rights to withdraw data up to 14 days after the interview date. Where it was not possible

to conduct the interview via Microsoft Teams, the option to conduct the interview via an audio-only call was offered and followed the same procedure as described above.

Interview video recordings were automatically saved to the Microsoft Teams platform in the MP4 file format and similarly when interviews were conducted via phone call the audio recording was saved in the MP3 file format. Both forms of recordings were subsequently downloaded and transferred to the researcher's computer for safe data management.

5.2.3 Data analysis

Transcribed text from audio recordings were thematically analysed via a deductive approach. Thematic analysis is of primary use when seeking to understand experiences and behaviours (Braun & Clarke, 2012). Adding to this, a deductive approach to the theme identification process is effective for honing in on specific findings within the context of pre-existing frameworks (Braun & Clarke 2006). Willig (2001), notes that an approach to qualitative data analysis consistent with underpinning worldviews is important and at face value an abductive approach can be viewed as most relevant to the adopted Critical Realist (CR) worldview due to its grounding in pragmatist (Tavory & Timmermans, 2014). CR however advocates for the selection of most relevant methods to attain knowledge (judgemental reality) over naïve pragmatism, thus as deductive thematic analysis stands out as the most relevant form of qualitative analysis as it supports and directly links to the specific sub-research questions and overall objectives of this sub-research study.

In this light, Braun and Clark's (2006) guidelines for thematic analysis were implemented initiated by the researcher verbatim transcribing interview recordings to effectively utilise the transcription process for data immersion and familiarisation. During this process transcripts were annotated with initial ideas that through continuous review generated initial codes.

During the third to fifth stage of Braun and Clarke's (2006) guidelines for thematic analysis when collating codes into potential themes and further reviewing and defining these themes, specific attention and active engagement with pre-existing team resilience concepts and theories was made. Through this deductive process observations were connected with appropriate theoretical concepts thus providing the opportunity to better understand the reality of team resilience within this specific context. Overall, data analysis procedures were considered complete when themes emerged that appropriately embodied the codes and captured the essence of the observed data.

With regards to participant demographic surveys, these were collated in Microsoft Excel and analysed using SPSS 22. To aid data analysis, numerical values were assigned to each demographic variable depending on the numerical categorical levels (e.g., age: 1 = 18 – 29; 2 = 30 – 39; 3 = 40 – 49; 4 = 50 – 59; 5 = 60+). The free text response item for participant profession was categorised into common professional groups (e.g., nurse or community nurse = nurse) and assigned corresponding values. Exploratory descriptive analysis was conducted to summarise respondent demographic information.

5.3 Results

A total of five interviews were conducted with healthcare staff including two senior managers (SM) and three frontline ward staff (FWS). Participant demographic characteristics are outlined in Table 2 below. Several themes grouped under an overarching theme of 'team resilience' emerged and are detailed below alongside a thematic map illustrated in Figure 6.

Table 2: Participant demographic characteristics

Variable	N	%	Variable	N	%
<u>Age</u>			<u>Years working with current team</u>		
30 – 39	3	60%	0 – 1	2	40%
40 – 49	2	40%	2 – 5	3	60%
<u>Sex</u>			<u>Ward</u>		
Female	4	80%	Medical	1	20%
Male	1	20%	Surgical	1	20%
			Other	3	60%
<u>Profession</u>					
Nurse	2	40%	Radiographer	1	20%
Cardiologist	1	20%	Social worker	1	20%

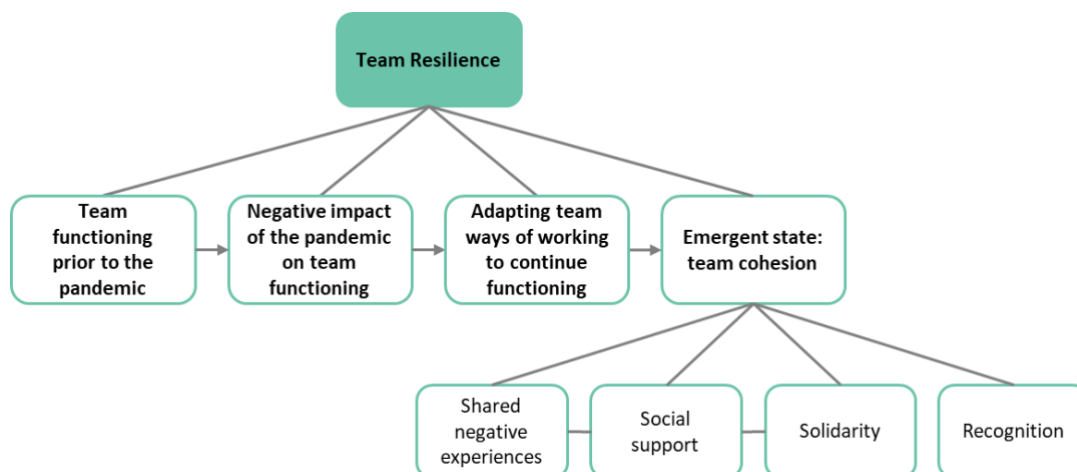


Figure 6: Thematic map

5.3.1 Overarching theme: team resilience

Four main themes capture the conceptual process of team resilience. The first three themes embody the bounce back trajectory of team functioning within the context of adversity leading to emergent outcomes described in theme four.

Theme one: team functioning prior to the pandemic. Participants described good team functioning when asked about whether teams could achieve their goals prior to the pandemic:

“Yeah certainly, there's evidence of this. It's not on a hear-say basis, we produce figures daily about our discharges. So yes, my team performance is pretty good.” [SM 1]

“We get on well we're a good team very adaptable very agile.” [SM 2]

“Well, I think we do work very well, because everybody knows what their role is in the team, so it's not like you will be overlapping, when we need something for someone to do, there's a job for everybody to get involved. So you know, when I'm here, this is what I'm doing, when this happens this will be my role and we do have team briefing as well as the beginning to say okay these things are emerging please can I take that role, even if we are operating we don't even do that, everyone knows their role” [FWS 1]

One participant describes however that although their team worked well together, being able to meet objective and targets was not ways the case.

“It's really tricky. We work hard, we work together, but at the end of the day, most times no [do not achieve goals].” [FWS 2]

Theme two: negative impact of the pandemic on team functioning. This theme captures the challenges that negatively affected team functioning. During the initial onset of the pandemic participants described communication challenges:

“Well, I would say effective communication for sometimes, you know, I think there's a delay in actually communicating the next steps of things that are happening, I mean for the managerial perspective down to just regular team members I think effective communication is one thing that needs to be, you know, done a bit better.” [FWS 2]

“They could of improved maybe something to put on paper. You could be told nicely because sometimes, you're told something else or it's something different your like this change is changing every hour, and like, every hour! So people had to be checking every few seconds just to make sure that things haven't changed.” [FWS 1]

“There's something about the very early part, not quite being clear about roles and responsibilities but that very quickly got ironed out and it didn't cause conflict it just caused a bit of misunderstanding and duplication of work.” [SM 2]

Communication challenges also arose due to the use of PPE:

“And a lot of it is that we're very guided by our uniforms as to where we are. Now, we didn't have any of that in the pandemic, we had to be in scrubs and, you know, it might be we ran out of scrubs at one point and we were having them bought in from the community. So actually, you don't really know who you're talking to. So you all gowned up, you've got your PPE, so you could be talking to a nurse, you could be talking to a healthcare assistant, but it wasn't quite clear.” [SM 1]

Working in PPE negatively impacted team functioning and performance:

“I mean some people had to wait, for instance myself a long time to get the right masks. Some new people that are coming they haven't been fitted they can't do some procedures, which puts a little bit of strain and annoyance on other people knowing that its them that have to do it you know, because they're waiting for someone else to get fitted to do this... and my team have had that issue, that person can't just work.” [FWS 1]

Theme three: adapting ways of working to continue functioning. To overcome experienced challenges participants described how technology allowed them to creatively change their ways of working so to achieve aims and objectives in the face of experienced challenges.

“So it impacted my team massively. So from being very visible on the wards, I've got staff with underlying health issues that had to go into shielding pretty early on, so I lost members of the team physically in the team and there was some members of my team whose anxiety was through the roof and I felt the best thing to do rather than actually lose them was to start having members of my team work remotely to see if actually we could do this. So I didn't waste any time I was probably one of the first departments to have my team working from home, and of course, thanks to Microsoft Teams and our own Digital team, we managed to access all the systems we need from home.” [SM 1]

“I think people are being creative. What can I do? Am I going to make just a telephone call, would that be enough? Everybody's constantly thinking and finding new ways, to make this work in terms of how do we get the best possible outcome for the people we're working with, without actually, seeing them, if we are not able to see them, and if you think it's necessary for me to go into see this person, if I can't see them, nothing's going to happen, then, how do I keep myself safe? How do I keep the other person safe? So, it's almost constantly being creative and thinking outside of the box really. The team are quite good at doing that.” [FWS 2]

“I've been going every day so, a bit more challenging for things, a be different in terms of, how you move freely between wards, the things you're able to do things and are not able to do, you can't just get up and go say you want to go and see someone one, you have to, carefully consider where you're going, is there a need to go in there, do I really have to be there, if I don't

have to be there, then can I do it over, you know, via technology, FaceTime, video conferencing; How can I make things work, unlike before you would have been face to face there's no question about that. But now the things that you think, can I work, can I work without actually seeing that person face to face, and then we are going into the ward the PPE is, you know, each level is something different, you know, we have to be careful about going into the wards being careful about coming out, so here, it is a big challenging in that aspect.” [FWS 2]

In addition to creative use of technology, organisational changes to team structures were made. These changes had a positive impact on inter-professional relationships:

“We changed to a different way of hub working and we brought in nurses that weren't experienced in specific areas, what we did was we used them as bay nurses to do the basic patient care, so we had people that lacked in confidence on the wards that would be looking to even the health care assistant to help because they've been out of nursing for so long so I would like to think that as a result of all of that, relationships have changed.” [SM 1]

“There's a real sense of collaboration and what the other thing that I think we saw was a removal of traditional kind of hierarchies. We have very senior doctors acting in nursing type roles, we had admin people acting in other types of roles, there was a real sense of we're all in it together and we're having to forget about titles and who we are and what we do, but we are fundamentally all focused on caring for the group of sick patients.” [SM 2]

Reflecting on changing ways of working, participants described attitude towards how teams and team members had to deal with the new ways of working during the pressurised conditions of working during the pandemic.

“I think our team has for the most part been resilience in dealing with the pandemic because everybody has worked very hard and taken on extra shifts erm because people have been for the most part happy to do that.. I think for the most part people have worked hard and everybody has done their best that we can with within these circumstances.” [FWS 3]

“The coming months will be really challenging, everybody will be under pressure, but one thing I know is that everybody gives it their best shot. Whether that would be good enough time will tell. But definitely, this is special time we are already feeling it already. Everybody's stressed. You know what, at the end of the day everybody gives it their best as soon everybody put in 110 most times, just to ensure that we're doing the right thing, working together to get the best possible outcome for the people we're meant to be serving, people will give it their best but you know there will be lapses, defiantly will be lapses.” [FWS 2]

Overall, this theme captures descriptions of how teams adapted ways of working to maintain functioning in the context of adversity. In combination themes one to three embody the trajectory of team functioning within the conceptual process of team resilience.

Theme four: emergent state of team cohesion. Collectively several sub-themes capture participants descriptions of increased cohesion within healthcare teams as inter-personal relationships existing among team members were strengthen following working during the pandemic. Themes linking to team cohesion emerged at the individual level in terms of personal experience, prosocial behaviours and a shared experience with other team members. At an organisational level, the importance of recognition in terms of providing support and showing appreciation for team functioning during such challenging times was also highlighted and had a positive influence on team cohesiveness as an emergent outcome when viewed within a theoretical framework of team resilience.

Sub-theme one: shared negative experiences. Participants described how working during the pandemic had a negative impact on individual wellbeing. In terms of mental wellbeing participants described the fear and anxiety experienced relating contracting the virus.

“When it was just started, you just didn't know if they even though we know, airborne, or whatever it is, it was so scary that you didn't even want to speak, I wouldn't eat at work myself, I didn't want to even eat at work.” [FWS 1]

“It's been quite challenging the pandemic, especially, I don't know if it's a fact or the notion that people who are non-white seem to be affected more by the pandemic seem to be dying more than the native British people, the thought of that has been a worry really. And just working you know knowing that potentially I could get the virus it has been a worry.” [FWS 3]

In addition to personal concerns, participants described negative experiences of having to care for Covid-positive patients and dealing with loss.

“We were sending this hospital and these nurses, sub-acute patients, and they did not know how to look after them and the fear on their part was enormous and they were they, they had seven resignations and they were probably in tears for the most time that I saw them and I was dealing with that, I mean, I worked a full month stretch without a day off to pick that up, because I would either have somebody ringing me at seven o'clock in the morning, crying because they were scared, they didn't know what to do these patients didn't know how to patient die on them, but yet we were sending them palliative patients, there were things like this that hadn't been considered, and I think their resilience was just smashed.” [SM 1]

“And the other thing that a lot of the ward teams struggled with was there fear if they weren't, if they didn't have any respiratory experience dealing with the Covid patient and the dying patient and how that was dealt with that was very difficult having to let go not allowing loved ones. And I know that that has a massive impact.” [SM 1]

Working during the pandemic also had a negative impact on healthcare staff physical wellbeing and personal life.

“I think I lost sight of everything else, I didn't see my children for a month their father had them, I was literally shut off, I couldn't see anybody it was lockdown, so I was either at work or on my own and I think I got completely shut off from the world and lived in this bubble of Covid.” [SM 1]

“Sometimes you know you leave work and you're tired and you know if there has been a few tensions it doesn't, when you get home you sometimes find it hard to relax because you're still worrying about what happened at work so it's not, it's not good for well-being it's not good because when you when you get home and you're still worried about what happened at work you can't relax you can't sleep properly it affects the ability to rest is compromised, so yes I think it can have a negative impact.” [FWS 3]

On top of the already experienced negative impact of working during the pandemic, participants described uncertainty about the future and the impact on team functioning.

“So the common goal has sort of well has gone although there's clearly lots of trepidation about what the wards is gonna look like.” [SM 2]

“So my inner fear and anxiety at the moment is, as you've mentioned, we're not certain we're not going to get another wave. We don't know what the winter holds for us. Don't know if this is really going to take off again over the winter, or if it's going to be, you know, quieter and we've returned the business as usual, but my anxiety is that we have to then do what we did with the surge and do everything at fast pace, change processes again, and I'm not certain my team, or even the ward teams are geared up to do that again.” [SM 1]

Sub-theme two: social support. This theme captures the importance of team members being alert and aware of other team members who were experiencing the negative impact of working during the pandemic as described in the previous theme. In response, team members verbalised their experience of team care and support.

“There were occasions during the Covid response where probably all of us were caught by somebody as we fell. And I mean that kind of metaphorically when we might have wobbled around all over the place and there was just a member of the team there to catch you and help and then put you back together again and get you back out again I can certainly recall a couple of those occasions where that happened to me. Bearing in mind that none of us have ever dealt with a pandemic.” [SM 2]

“What I think stands out is actually being about to speak about the difficulties, you're sitting there you've just finished a phone or you dropped the phone there's already somebody on the other end saying Oh, are you okay? We know because people can hear what you're saying on your own and they can see your facial expression and know that things are not going right, there's somebody there to say what is going on and then there's always somebody else saying how about try this, how about do that, how about do this.” [FWS 2]

Participants described simple informal ways in which they showed or had been shown care by other team members both in and outside of the workplace:

“I sent a text message to one of their respiratory consultants say, you know what, I and I think this was through the surge, and I said erm, do you know what I think you've got one of the worst jobs in all of this so if you need anything again, I mean if there is aircon in it you but again you having to be in PPE or that so you need anything the food, drink whatever just texted me I'll run it down to you.” [SM 1]

“Well I think is just checking up on each other really for you know for people like me that live alone, you know like now I before a lot of people didn't have my number but now people do have my number and they just check on me you know time and again and the other day one of my colleagues brought us breakfast to work, little things like that I think they just err, and sometimes we'll order lunch and eat together yeah I think small things like that just help you know take go a long way.” [FWS 3]

“I was so stressed actually, and because team members on the team members did see me and they encouraged me, they would send me text messages, how are you doing? you're doing fine, and for me, I think that has really impacted on the wellbeing.” [FWS 2]

Sub-theme three: solidarity. This sub-theme builds on the previous two themes by capturing a sense of solidarity and unity experienced by teams when working during challenging working conditions.

“My resilience nearly went at that point because I was, you know, I was basically permanently on call leading my team, then having to lead another team that wasn't even my

team and owned by a different hospital and this could be up until 10 o'clock at night. So, you know, again, everyone felt that they were in the same club, we might not all be dealing with it the same way. But we're all in this situation.” [SM 1]

“So I think during Covid erm there was a really high degree of kind of inter-team really good relationships between teams everybody was focused on the ask, it was a bit kind of like the Dunkirk spirit where we're all in the trench together fighting the Covid. So there's our strong sense of one big team. Although the chief exec will always describe it as we were in the same storm but perhaps on different boats. And so we are all experiencing Covid slightly differently erm and that would depend I guess on whether we were personally worried about getting it whether we got it, the different responsibilities and requirements that we had.” [SM 2]

“The pandemic has pushed ward teams to their limits and have brought them closer together. So there has been this element again of solidarity.” [SM 1]

One participant also described how the negative impact of experienced workplace challenges radically improved team dynamics.

“Within my team, I took over a very dysfunctional team that hadn't been properly managed and it took me a while to sort of gain control over that. I would say that the pandemic, we've had two tragedies in the team, two of my team lost their husbands to Covid, and I think that in a way bought the team closer together. And so the dynamics now post Covid are far closer and more considerate of each other than they were prior the pandemic. It's the old adage of, you know, there's nothing like a crisis to pull everyone together and that's kind of the sentiment that my team had and because, you know, they don't all like each other and that's an unrealistic model that we should like each other and sometimes there are elements of a lack

of professionalism because of this, but post Covid and this journey that we have ridden together, and we've all dealt with it very differently, but the one thing that's come out at the end of it is the solidarity.” [SM 1]

Participants also verbalised the importance of strong team relationships to unify the team.

“I think the length of time that they've been together as a team was an important one. So going back to that ward issue we did say to some of the teams want to come off the ward and we'll you know give you some time away from all this end of life stuff and they were like No we've been together as a team we want to stay as a team, so the length of time a team has been together.” [SM 1]

“Well, I think we've got, the key strength would be the people really, you know people pulling together, people helping one, another people supporting one another, so I think the people is key strength of the team.” [FWS 2]

Participants described different ways by which team members strengthened their bonds including sharing experiences, and by creatively developing an inclusive team culture:

“Absolutely. You've been through the same thing. You've only been through it with your colleagues, you can't share that experience, I mean, you can share different experiences with friends and family. But you can't specifically share that day to day aspects of it and what [name] did in our, he, we had meetings, but their monthly meetings at the senior nurse midwifery meetings, they called it different something that else at a senior nursing forum, erm that we did on teams, and people were asked to share their experience of Covid, very, very powerful. Very powerful. You know, one of the nurses had cancelled her, well, she was due to

get married, you know, all of this and that didn't happen and you know, what they had to deal with on the wards and, yeah, some really powerful stories.” [SM 1]

“There’s this girl she has two friends, and she drew a tree, and now the leaves of the branches of the tree are fingerprints in different colours, and its and it's beautiful. Every staff member in the department has got a fingerprint on it. Our fingerprint is a leaf, it’s so beautiful, you know in, it’s so nice when you go in, it’s like we are in this together kind of” [FWS 1]

Reflecting on team relationships, participants expressed the desire for further team activities to build stronger relationships, team awareness and unity.

“Yeah, maybe have more team building activities, it doesn’t have to be anything formal it can just be something you know quite informal it could just be quiz a kind of quiz night or people stopping to learn about cultural differences, what makes this message different to me? Or what are the similarities that this person has too me? And having that, you know, I would always go back to cultural competency, because I think that is everything and it doesn't have to be one way or the other, it could be me, as a member of the BAME community, gaining more understanding, or getting myself more acclimatised to the culture of other people” [FWS 2]

“There are things that I would like to do. I'd like to do some team building but again, we're in the NHS, that's that takes funding.” [SM 1]

Sub-theme four: recognition. This theme captures participant descriptions of the importance of recognition in terms of both support and appreciation towards healthcare teams from an organisational level and how this contributed to team cohesiveness. In terms

of support, participants described how organisational practices recognised and responded to the need for additional psychological support.

“Our 2020 hub has been on hand offering psychological support with that, because that was very difficult for a lot of the ward teams.” [SM 1]

“Yeah it is and I think there are a whole range of examples here where we have tried to maintain both individual and team resilience. I mean just a couple of things that springs to mind we had something called we still got PP safety officers. So these are a wide range of individuals multi professional individuals who have some additional responsibilities around keeping people safe so we call them PP safety officers. And again the feedback we've had from our staff is that they, they made them feel safe, so I think part of your resilience is also about your own personal safety so attempting to keep people safe that kind of helped. The other thing so one other example is we developed what we call the yellow lanyard team the respiratory nursing team who worked alongside our ward nurses to provide additional support for caring for complex for respiratory patients. And again that sense of we're not throwing you into the deep end without some support I think I think help maintain personal wellbeing emotional and mental wellbeing that sense of safety that sense of you're not going to be made to look stupid or you're not going to you're not going to harm a patient. So that's all about your personal resilience and team resilience.” [SM 2]

“So we during Covid we invested fairly heavily in psychological wellbeing. We continue to do that going forward so we have a team-based psychologist supporting the team.” [SM 2]

In addition to the importance of recognising the need for psychological support, recognition in terms of appreciation for team effort was also identified as an important practice to promoting team resilience.

“How well senior leaders recognise their contribution, contribution was a really important part of our response, we needed to, often quite frequently go out of our way to recognise teams because they need that additional kind of recognition.” [SM 2]

The importance of recognition and appreciate for teams was identified both in terms of formal as well as informal practices.

“Erm, I send regular thank you out to them. And I like them to be involved in recognition, so if we get an emails from our chief operating officer or somebody saying, you know, you've done a really good job, they all get to know about it.” [SM 1]

The positive effect of receiving tokens of appreciation from the wider organisation and local community was also verbalised.

“The canteen offered us free drinks, but we only paid half the meal, the car parking people stop charging us. So those sorts of things, I think help the ward teams help the whole, all the staff realize, actually this is a really important job and the people are showing their appreciation in the only way that they can. And we've got loads, loads of donations from companies, the community, people we've got, schools sent us, they've drawn us pictures, and I think that's what supported everyone through.” [SM 1]

The need for continued recognition and appreciation was identified.

“I'd love to be able and I will do this, I've been saying it for a long time, but yeah, order pizza or in or that sort of thing, that's the only thing really that's in my gift to do to sort of just make them feel appreciated.” [SM 1]

Organisational practices that providing both formal and informal support and show appreciation for teams, in combination with individual and team caring behaviours directed towards other team members, all contribute to this final main emerging theme of team cohesiveness.

5.4 Discussion

The objective of this sub-research study was to understand staff experiences of team resilience in the healthcare setting. The findings relating to the two specific sub-research questions are discussed and several recommendations are raised to inform the development of the intervention to promote team resilience in healthcare practice.

5.4.1 Main findings

Practices that promote team resilience. The four main emerging themes align with the proposed theoretical framework of team resilience put forward in chapter two. The themes reflect a deterioration in team functioning following exposure to adversity (pandemic-related workplace challenges), followed by a return to normal team functioning through positive adaptation and the emergent state of team cohesiveness. In response to the first sub-research question regarding practices that healthcare staff identify to promote team resilience, several activities highlighted by participants (e.g., providing social support, sending encouraging messages, and showing gratitude and appreciation for other colleagues), enhanced the identified emergent state of team cohesion and had a positive impact on both team

functioning and individual wellbeing. These simple activities correspond with Alliger et al. (2015) matrix of forty resilient team behaviours, highlighting that while experiencing workplace challenges resilient teams engage in practices that support members who have been adversely affected by events. As previously discussed, social support represents social capital and can be derived from team members or supervisors who provide emotional support, expertise, assistance, and advice (Nahapiet & Ghoshal, 1998). Sources of social support however differ in value as Ng and Sorensen (2008) found that co-workers were identified as more helpful for coping with work-related stress than supervisors, whereas supervisory support was identified to be more valued and consistent over time (Luchman & González-Morales, 2013). Teams fostering an environment that encourages social support reduce the impact of work demands on individual work-related stress, thus limiting the impact of perceived adversity on team functioning as members are better able to cope and continue functioning. The proposed framework for promoting team resilience in the workplace, alongside all major theoretical models of team resilience, emphasise the importance of social support within the team resilience process (Hartwig et al., 2020; Mistry et al., 2015). The coordination of affective team behaviours is a key tenet for teams to recover to normal functioning and emerge as resilient.

In addition to socially supportive activities and practices as a form of team self-care, participants also noted the important role of expressing appreciation and gratitude through simple gestures such as sending a text message or sharing thanks and encouragement with other team members. Alliger et al. (2015), highlights the importance of expressing gratitude for helpful actions taken by team members during stressful events and thanking both internal and external team members for their contributions. Copeland (2020), utilised this technique by encouraging nurses to demonstrate gratitude for other team members by thanking and complimenting people each workday over a six-week period and found that this had a positive

impact on participant ratings of teamwork, compassion satisfaction, and fatigue reduction. Engaging in these internal team motivation and confidence building activities (Mistry et al., 2015), aligns with Ilgen et al. (2005), recognition for the importance of team bonding to achieve team functioning. Through the exchange of affective experiences and information, team members self-motivate and encourage each other. This minimises the impact of the perceived adversity and deterioration to team functioning, thereby facilitating the emergent states of team cohesion and psychological safety (Edmondson, 1990).

Clearly, building strong team relationships is vital for team functioning as well as individual wellbeing. Related social activities can occur both within the work context as well as outside the workplace. The findings of the current study indicate the positive experience that participating in informal social activities (e.g., sharing a meal) or receiving support from work colleagues (e.g., supportive text messages/calls outside of work) had on individual wellbeing and resilience. Schetter and Dolbier (2011), identified the importance of interpersonal and social relations as vital promotive factors of psychological resilience, highlighting the importance of social support, social cohesion, and social integration. Hou et al. (2020), further support the importance of the social environment by finding that social support was positively correlated with resilience and both social support and resilience were negatively correlated with the mental health issues in healthcare workers during the peak of the Covid-19 pandemic outbreak in China. Engaging in non-work-related conversations and activities can also enable team members to explore and discover common interests, personal strengths and areas of expertise. This in turn, strengthens bonds and inter-personal relationships within work teams, as well as team SMM and team potency, thus positively impacting team functioning and contributing to the potential emergence of team resilience (Bossche et al., 2011; Choi et al., 2010; Mohammed & Dumville, 2001; Hartwig et al., 2020).

This interactive relationship between team resilience and individual resilience that has been revealed through the current research also extends to organisational resilience-related practices. The current study research findings highlight the importance of organisational leadership through the provision of clear purpose and direction as well as resources for teams in terms of staff redeployment, PPE equipment, and psychological support. These interactions between teams and the higher organisation, support Stoverink et al.'s (2020) recommendation for teams to engage in boundary spanning practices to aid recovery from perceived adversity. All three-boundary spanning behavioural categories (representation, coordination, and general information search) align with participant descriptions as well as with organisational resilience theory. Duchek (2019), propose a sequential three stage process of organisational resilience: anticipation involving proactive action, coping involving concurrent action and adaptation involving reactive action, with each stage underpinned by essential resilience processes including resource availability, social resources, and power/responsibility, respectively. Developing and implementing solutions when experiencing adversity are essential to protect the organisation. Successful solutions include the effective management and distribution of resources throughout an organisation so to bolster the capability and functioning of smaller team units (Marks et al., 2000).

Resource distribution includes physical assets or staff redeployment, as well as social resources such as promoting social interactions, expanding resource networks, enhancing communication systems and a culture of trust and interdependence, which can facilitate clear goals and vision, information sharing, and a coordinated organisational response (Lengnick-Hall et al., 2011). Participants shared how the organisational response of restructuring teams and redeploying staff, positively impacted inter-professional relationships as traditional hierarchical social structures were somewhat flattened with consultants, nurses and HCA working together towards a common goal. Prior to the pandemic participants described inter-

professional relationships as task-orientated and in some cases limited or even non-existent (e.g., between consultants and HCA). The dynamics of inter-professional relationships changed however due to the experienced adversity, as organisational actions such as team structuring, and redeployment created a working environment in which traditionally social structures had to be adapted for teams to achieve performance outcomes. These actions implemented at the organisational level contributed to participant descriptions of positively adapted team functioning and the emergence of team resilience. This interactive relationship between the team unit and the organisation aligns with boundary spanning team behaviours such as positive working relationships between teams and non-team members, as senior organisational management were described as an important part of participant experiences that enabled teams to receive relevant and appropriate support (Ancona & Caldwell, 1992).

Although participants generally described positive interactions between teams and organisational management, participants also shared instances of organisational challenges particularly at the beginning of the pandemic where guidelines and other actions were not effectively communicated, thus leading to initial confusion. This situation highlights the importance of effective boundary spanning activities such as coordinating processes to maintain team functioning. These observations demonstrate the importance of communication and information gathering systems at an organisational level and the impact that this can have on team functioning. The interactive relationship between team and organisational functioning is further supported by Xiao and Cao (2017) theoretical model of organisational resilience that visualises a direct relationship between the organisation and team units, and between teams and individual members. In addition to this, team leadership is an important aspect of team resilience in terms of providing an essential link between the team and the wider organisation to effectively communicate and share information. This results in the effective distribution of resources to meet team needs during experienced

workplace challenges (Ancona & Caldwell, 1992). Furthermore, leaders play a key role in motivating the team and keeping team focussed on achieving key performance outcomes and returning to normal functioning. Overall, the importance of a multilevel approach involving individual, team, and organisational systems to facilitate team resilience emerges from the current research study findings. This observation aligns with Khatri et al. (2009), recommendation that to address pressurised working environments within the healthcare setting positive change is required from the top-down, thus corresponding with Kozlowski and Klein (2000) multilevel approach to organisational systems.

The need to promote team resilience in the workplace. Having identified several practices that promote team resilience in the healthcare setting, the second sub-research question aimed to identify whether healthcare staff would recognise the need to further promote team within the workplace. The first three main themes indicate that participants positively adapted team and individual functioning in response to experienced workplace challenges through the team activities and practices already discussed. Despite this recognition of positive team adaptation, research outcomes also highlighted concerns for the ability of teams to respond to future workplace challenges. Senturk (2018) suggests that well-functioning teams have strong communication and information gathering systems that enhance team situational awareness sensitivity. This enables a team to identify the severity of the experienced adversity (minor, major or severe) more efficiently and accurately, thus allowing the team to implement an appropriate response. The anxiety raised by participants about the severity of future challenges, highlight the existence of robust resilient team process as the concerns raised are appropriate within the context of the pandemic-related adversity. These concerns also indicate acute team situational awareness sensitivity, contributing to a collective mental model of the current condition and ability of individual healthcare staff and teams, and likely impact on functioning if perceived severe challenges arise.

Identifying the vulnerability of healthcare teams through critical reflection, is an important resilient team process. This process enables teams to effectively delegate resources and strengthen capacity to positively adapt functioning to continue its trajectory of recovery as well as maximising its ability to withstand or minimise the impact of future challenges (Ilgen et al., 2005). Learning from experience and team adaptation are essential for team recovery. To achieve this, Alligers et al. (2015), identified that following adversity, resilient teams firstly regain situational awareness by establishing what is going on, what is expected to happen next, and designating responsibility. Next, teams debrief involving reflection on what went well, what did not and identifying learnt lessons, which are important team activities and discussions that enable specific team actions and recognise areas for improvement. Building on this, resilient teams address immediate risks through adjusting team processes and procedures as well as strengthening relationships that may have been negatively affected through friction points that emerged within the team due to the severity of the experienced adversity. As discussed previously, Alligers et al. (2015), also identified that resilient teams demonstrate gratitude and appreciation for each other to further cement inter-personal relationships. This in combination with other identified practices enhance team resilience system processes and procedures ahead of future challenges. The existing team practices that have emerged from the staff interviews, in particular social support and expressing appreciation both inside and outside of the workplace, and the team building activities that participants indicated would be beneficial to engage in to further promote healthcare team resilience, align with Alligers (2015) resilient team practices. These also relate to Mistry et al. (2015) and Hartwig et al.'s (2020) recommendations for teams to engage in learning and reflective activities to adapt internally, thus facilitating positive team trajectories towards achieve normal functioning. Based on these findings, healthcare teams do recognise the need for additional support to enhance team resilience within workplace, however, is it possible

further promote and encourage teams to engage in such pre-existing activities through a team-based intervention.

In terms of promoting team resilience in the healthcare setting, developing an intervention to improve identified resilient team behaviours and activities in healthcare practice would be feasible and potentially successful if capitalising on the existing practices and activities that are already acceptable within current team and organisational culture. Designing an intervention that creates or manipulates the social environment to facilitates such practices has been demonstrated to be feasible in healthcare context. Copeland (2020), designed a hospital-based intervention to address clinical staff burnout, compassion fatigue, and teamwork, where nurses were randomly allocated to several experimental groups, one of which included demonstrating gratitude by thanking three people and complimenting another three people each workday over a six-week period and another included completing a short five-minute daily reflective journal over the same period. As a result, positive experiences of engaging in these team practices were shared by participants as well as an observed positive impact in measures of team communication, mutual support, compassion, and staff burnout. Overall, Copeland (2020) noted that nurses were willing to engage in positive team practices each workday for a short period of time, thus demonstrating that it is feasible to manipulate the social environment within the healthcare setting through the introduction of simple social practices and that these have the potential to be effective at improving teamwork. Although these were team-based activities, in particular demonstrating gratitude, they were proactively driven by individual team members, thus making the team-activity accessible to a wider range of staff teams that consist of variable working patterns and team structures. Designing a team-based intervention that is accessible to different team designs is essential to maximise participant acceptability, uptake, and retention.

Returning to Copeland's (2020) healthcare-based team intervention, although the reflective journal activity had a positive impact on healthcare staff this was an individual rather than a team-based activity. Individual journalling or reflective diaries are utilised within the healthcare setting are primarily focussed on professional development (Liang et al., 2019), but overall, the benefits of work-based reflection are well-known and even recommended to be part of interventions to promote health and wellbeing across community nursing teams (Rogers, 2021). In addition to individual reflective practice, team-based reflective learning, primarily within the form of stand-alone or weekly group reflective discussions are associated with having a positive impact on team performance and functioning (Nancarrow et al., 2015; Loo & Thorpe, 2002). A team-based journal that includes collective reflective activities such as reflective writing as well as reviewing and interacting with other team members reflective experiences would provide an opportunity for team members to collectively reflect and share experiences with other team members thus promoting a culture of support and learning within a team. Teams engaging in such activities during experienced challenges would encourage group learning and foster closer inter-personal relationships, thus aligning with resilient trajectories of returning to normal team functioning (Mistry et al., 2015). Despite these potentially positive outcomes team-based journals are not common-place in practice. The key challenges for implementing a team journal is the practicality of finding time and space for a team to collectively reflect and contribute to a team journal over a period of time due to varying work patterns and commitments. Overcoming these challenges, Stephens (2012) delivered an online Twitter-based intervention to increase resilience and support for nursing students, where over a six-week period the researcher posted questions and comments to encourage participants to engage in online conversations. As a result, the experimental group demonstrated an increase in resilience from pre- to post-intervention and a decline in perceived stress. This novel interventional study suggests that online social media networks can be utilised to enhance team support and learning which were highlighted during

staff interviews. Although this study did not utilise a reflective journal or diary, the novel intervention design does demonstrate that the creative utilisation of digital technology can make team-based activities more feasible and acceptable within the healthcare setting.

In addition to facilitating internal team relationships, an online journal can also be used to facilitate boundary spanning activities particularly representation practices by inviting higher organisational representatives or other non-team member to take part in this team activity. Although based on job role alone team leaders most naturally assume many boundary spanning activities, Marrone (2010) suggests that team members engaging in boundary spanning activities can further aid team recovery to normal functioning. Adding to this, Morgeson et al. (2010), suggests that external leaders can positively impact team resilience through encouragement, motivation and ensuring team focus on common goals. By involving such participants, team members can develop and enhance positive working relationships with external partners. This strengthens important communication processes and information-gathering systems that in turn facilitate more efficient functioning. In addition to this Marks et al. (2000), suggest that team boundary spanning with external leadership can enhance functioning through gaining access to relevant training, support, and other resources. Overall, a shared social environment can enable teams to strengthen internal as well as external relationships, thus enabling teams to return to normal functioning which in turn can facilitates the emergence of team resilience.

5.4.2 Study limitations & recommendations

A key challenge of this study was that the recruitment and interviews were initially planned to be conducted in person, however due to social restrictions this was limited to online recruitment and data collection only. This access restriction negatively impacted participant recruitment as no responses were received from online through hospital-wide advertisement.

In response the sampling strategy was adapted to non-probability convenience and purposive methods to recruit and engage participants. As a result, a sufficient sample was recruited but it did introduce bias particularly in terms of representation as two out the five participants also had a pre-existing vested interest in the research project. In addition to this sampling bias, the quality of interviewing was impacted due to having been adapted to run online rather face to face. Although virtual interviews were quick and flexible to set-up, establishing a good rapport with participants was challenging and this may have limited the extent to which participants were willing to open and share. This effect has been previous noted in studies conducting online interviews in comparison to face-to-face interviews (Meijer et al., 2021), however, although this effect could not have been avoided entirely, it was minimised by the clear line of questioning set out in the interview schedule. Despite these procedural challenges an adequate sample was recruited during challenging research conditions, producing insightful research findings at an unprecedented time. Overall, the objective of this study was to contribute to the development of an intervention to promote team resilience in the healthcare setting, thus several recommendations are put forward:

- R8:* Create an intervention that expands on pre-existing team building activities, practices, and norms to enhance team acceptability and engagement
- R9:* Utilise reflective team activities that take place either inside or outside of the workplace to provide an opportunity to develop inter-personal team relationships.
- R10:* Develop flexible intervention content and design to enable team members of diverse professions to participate in a collective activity at individual convenience
- R11:* Creatively use digital technology to provide a social environment that engages teams in motivation and confidence building, learning and reflective, and boundary spanning activities that are feasible and acceptable within the healthcare setting

5.5 Chapter summary

Study outcomes capture and endorse the proposed framework for promoting team resilience in the workplace, as well as highlight a range of resilient behaviours that individual team members and teams engage in within the healthcare setting during real-world adversity. Moving forward, recommendations are combined with those presented in the systematic review and the staff surveys presented in the next chapter, to inform the intervention development process presented in chapter seven.

CHAPTER SIX

Healthcare Staff Perceptions of Team Resilience

6.1 Chapter overview

This chapter presents the third, phase one sub-research study with the following objective, specific sub-research questions and hypotheses, informed by the literature:

Objective 3: Survey healthcare staff to explore perceptions of team resilience in the healthcare setting

Sub-question 1: Is there a need to promote team resilience in healthcare teams following experienced workplace challenges?

Hypothesis 1: Healthcare staff will rate team resilience and individual resilience as lower than established mean scores

Sub-question 2: Do resilient individual attributes affect resilient team attributes?

Hypothesis 2: A positive relationship will be observed between team resilience and individual resilience

Hypothesis 3: Individual resilience will be a significant predictor of team resilience.

Hypothesis 4: Interpersonal components of individual resilience will be positively associated with team resilience

Hypothesis 5: Interpersonal components of individual resilience will be significant predictors of team resilience

Sub-question 3: Do team member characteristics influence team resilience?

Hypothesis 6: Length of team membership will moderate team resilience

6.2 Methods

6.2.1 Materials

To inform and confirm study participation a research study pack consisting of an information and questionnaire section was developed. The information section consisted of the same University of Worcester participant information sheet and consent form used in the previous qualitative research study. These documents were revised to contain current study specific information (Appendix 5). To collect participant data the questionnaire section also consisted of the same demographics survey used in the qualitative research study (Appendix 6), as well as incorporating the Team Resilience at Work Scale (TR@W) and Resilience at Work Scale (R@W; see Appendix 8 for resilience measures).

The Team Resilience at Work scale (TR@W; McEwan & Boyd, 2018) was utilised as a comprehensive measure of team resilience in conjunction with the Resilience at Work scale (R@W; Winwood et al., 2013) assessing individual resilience (refer to chapter 2.4 for an in-depth review of resilience measures). The TR@W scale is a 43-item measure consisting of seven dimensions (robust = RO, resourcefulness = RE, perseverance = PE, self-care = SC, capability = CA, connected = CO & alignment = AL). This measure of team resilience was developed alongside the R@W scale a 20-item tool that consists of seven resilience dimensions (living authentically = LA, finding your calling = FC, maintaining perspective = MP, managing stress = MS, interacting cooperatively = IC, staying healthy = SH & building networks = BN; see Appendix 9 for TR@W & R@W subscale definitions). Both the TR@W and R@W scales demonstrate high internal consistency ($\alpha = 0.95$ & $\alpha = 0.84$, respectively) and are moderately correlated ($r = 0.65$). Both the TR@W and R@W scales capture participant ratings of resilient team and individual attributes on a seven-point Likert scale ranging from strongly disagree to strongly agree. All materials were formatted in Microsoft Word and an electronic version of the survey was replicated on Microsoft Forms for electronic distribution.

6.2.2 Participant sampling, recruitment & study procedures

Participant recruitment was limited to online methods only, running from August 2020 to the November 2020. An electronic invitation that included a short study summary and a direct weblink to the participant study pack hosted on Microsoft Forms was disseminated to all NHS staff in a bi-weekly email bulletin via organisational stakeholders. Participant selection through this form of non-probability convenience sampling was a reliable and efficient method to recruit participants and, as the entire target population were provided with equal opportunity to participate, risk of bias to the data was minimised. Determining an appropriate sample size to recruit for the current study was challenging as power calculations and even basic sample size information are absent from the limited relevant previous research that utilise surveys to inform the intervention development process. For the current study to achieve power = .80 (alpha = .05), a statistical power analysis calculated that a projected sample size of approximately N = 84 was needed (G*Power 3.1; Faul et al., 2009).

The electronic format of the survey presented the participant information section followed by a forced-choice participation consent question; the survey only continued if participants provided consent by selecting the 'I agree' option. If participants selected the 'I do not agree' option, the survey terminated by presenting participants with the debriefing information. All items within the survey section of the participant study pack did not require a response, thus providing participants the freedom to choose not to respond to specific questions. The electronic format of the questionnaire presented ten questions in a seven-point Likert scale table on each webpage and was moved to the next set of questions by a 'next' button presented at the bottom of each webpage. After the final set of questions participants were presented with a 'submit' button to complete the questionnaire. Following submission, debriefing information was presented thanking participants for their involvement. Overall, the

average time to complete the survey was 11 minutes. (University of Worcester REP code: CBPS19200004-R2; NHS No. 19/072/GHT).

6.2.3 Data analysis

Raw data was collated in Microsoft Excel and analysed using SPSS 22. The demographic survey was prepared in the same manner described in chapter 5.2.3 and the TR@W and R@W questionnaires were pre-assigned numerical values ranging from 0 = strongly disagree to 6 = strongly agree. Missing values were assigned the numerical value '999' for easy identification within the data analysis. Overall, this scoring system reflects the standard practice of relating to Likert-scale responses and categorical data (Sullivan & Artino Jr, 2013). To assess the data the following analyses were planned:

1. Participant descriptive statistics for demographic and resilience assessment tools
2. Descriptive statistics of resilience scales and Cronbach analysis to test the inter-item reliability of the TR@W and R@W measures (H_1)
3. Simple linear regression analysis to assess the relationship between the R@W and TR@W scales and identify whether individual resilience is a predictor of team resilience ($H_2 - H_5$)
4. A series of one-way Anova analyses with Bonferroni post-hoc pairwise comparisons to identify whether any participant groups had a significant impact on either the TR@W or R@W scales (H_6)

6.3 Results

A total of 103 responses to the team resilience questionnaire were electronically submitted. Preliminary analysis revealed a complete dataset with all items answered and minimal missing data points ($N = 49$), of which 3 were from the same item. As missing values

on variables were less than 5% and appeared randomly rather observed to be a result of a systematic process, no data concerns were raised, or further action required. Questionnaire item normal distribution was also approximately symmetric as confirmed by the assessment of skewness and kurtosis values ranging from -1.56 to .16 for skewness and from -1.52 to 5.26 for kurtosis, for which all values were observed within an acceptable range (skewness: $< \pm 2$; kurtosis: $< \pm 7$; West et al., 1995). A further examination of questionnaire item box and whisker plots revealed minimal outliers and extreme values; thus, no datasets were excluded from the proceeding statistical tests at this point.

6.3.1 Demographic survey

Descriptive statistics. The five-item demographic questionnaire included in the study questionnaire pack collected participant characteristics including: age, sex, profession, ward, and team length. As demonstrated in Table 3 below presenting participant demographic information, the respondent sample had fairly equal distribution with regards to age and team length. The participating group was majority female (77.5%), however this disproportionate ratio is approximately representative of the general NHS healthcare population (NHS Employers, 2019). Similarly, the centrality of ward distribution was primarily indicated as 'other', however a fairly equally distributed sample appears between medical and surgical wards. This force choice option was incorporated to explore differences between these two allocations as indicated by the literature. Nurses were the largest respondent professional group (48.5%), with the remaining 50% of respondents being: HCA (13%), Doctors (8%) and a broad range of clinical and non-clinical staff professional groups (>5% per group). Finally, with regards to team length, descriptive statistics suggest teams are generally stable with 85% of respondents being part of a team over 1 year, of which 30% and 40% having been part of their team for 2-5 years and 11 and over, respectively.

Table 3: Respondent demographic characteristics

Variable	N	%	Variable	N	%	Variable	N	%
<u>Sex</u>			<u>Years working with current team</u>			<u>Ward</u>		
Female	79	77.5	0 – 1	19	18.4	Medical	27	26.5
Male	22	21.6	2 – 5	31	30.1	Surgical	17	16.7
Prefer	1	1	6 – 10	12	11.7	Other	58	56.9
Missing	1		11+	41	39.8	Missing	1	
<u>Age</u>			<u>Profession</u>					
18 – 29	14	13.6	Nurse	49	48.5	Dietitian	2	2.0
30 – 39	19	18.4	HCA	13	12.9	Practitioners	2	2.0
40 – 49	24	23.3	Doctor	8	7.9	Biomedical	2	2.0
50 – 59	39	37.9	Managerial	5	5.0	Occ Therapist	2	2.0
60+	7	6.8	Radiographer	4	4.0	Other	8	7.9
			Psychologist	4	4.0	Missing	2	
			Physiotherapist	2	2.0			

6.3.2 Resilience surveys

Hypothesis 1. Descriptive statistics. Preliminary testing was conducted to determine the inter-item reliability of the TR@W and R@W scales and subscales prior to main analyses. Cronbach analysis revealed TR@W scale $\alpha = .97$ indicating that the scale has an excellent level of inter-item reliability. The R@W scale and all TR@W and R@W subscales, excluding: LA, MP, and IC, had alpha level's ranging from $.7 > \alpha \geq .9$ indicating an acceptable to good level of inter-item reliability. For the remaining subscales alpha levels ranged from $.4 > \alpha \geq .7$ indicating an unacceptable to questionable level of inter-item reliability. Further analysis revealed that deleting items on the LA subscales would significantly improve inter-item reliability from $\alpha = .63$ to $\alpha = .82$, however considering that this subscale consisted of only three items, reducing this number would weaken this factor. For subscales MP and IC deleting items would not improve reliability scores. Overall, the inter-item reliability analyses conducted suggests that both the TR@W and R@W scales have strong internal reliability.

Addressing hypotheses 1, initial inspection of descriptive statistics for both the TR@W and R@W scales revealed higher than expected range of scores: $M = .65$, 95% CI [.62 - .69] and M

= .67, 95% CI [.65 - .70], respectively (Table 4). This finding suggests that healthcare staff have good individual resilience as well as healthcare staff team resilience. Further inspection highlights the importance of inter-personal characteristics within teams and for individuals as the TR@W subscales CO and R@W subscales IC and BN were highly rated. Descriptive statistics also revealed pronounced team qualities captured by TR@W subscales RE and PE and the importance for individual resilient attributes LA and FC. No subscale scores appear considerably different from main scale averages, however R@W subscale MP was noticeably lower, suggesting that working within the context of the pandemic-related adversity had a negative impact on individual ability to maintain a solution focus and manage negativity. Overall, the ratings and proximity of the TR@W and R@W scores suggest that healthcare team members have moderately strong individual and team resilience (see Appendix 10 for TR@W & R@W question item ratings).

Table 4: Descriptive statistics for TR@W and R@W scales

Scale	M	SD	95% CI	
			LB	UB
Team Resilience at Work (TR@W)	0.65	0.17	0.62	0.69
<i>Connectedness (CO)</i>	0.74	0.18	0.71	0.78
<i>Resourcefulness (RE)</i>	0.69	0.18	0.65	0.72
<i>Perseverance (PE)</i>	0.68	0.18	0.64	0.71
<i>Alignment (AL)</i>	0.66	0.20	0.62	0.69
<i>Capability (CA)</i>	0.65	0.18	0.61	0.68
<i>Robustness (RO)</i>	0.61	0.19	0.57	0.65
<i>Self-care (SC)</i>	0.59	0.23	0.54	0.63
Resilience at Work (R@W)	0.67	0.13	0.65	0.70
<i>Living authentically (LA)</i>	0.79	0.13	0.76	0.81
<i>Finding your calling (FC)</i>	0.75	0.18	0.72	0.79
<i>Building networks (BN)</i>	0.72	0.23	0.68	0.77
<i>Interacting cooperatively (IC)</i>	0.71	0.19	0.67	0.74
<i>Maintaining perspective (MP)</i>	0.50	0.19	0.46	0.54
<i>Managing stress (MS)</i>	0.63	0.21	0.59	0.67
<i>Staying healthy (SH)</i>	0.61	0.25	0.56	0.66

Hypotheses 2 -5. Simple linear regression: assumption testing. The assumptions for a linear regression analysis were examined and resulted in the removal of one dataset due a violation of the regression analysis normality assumption. A predicted-probability (P-P) plot was produced to test data normality and revealed that the data mostly conformed to the diagonal normality line but with a positive deviation in the second quartile, thus suggesting that the data was slightly non-normal. In addition to this, a scatterplot of predicted values and standardised residuals indicated mild heteroscedasticity as the data was condensed within the centre of the plot suggesting an unequal distribution; furthermore, several anomalous cases were observed (Figure 7 left).

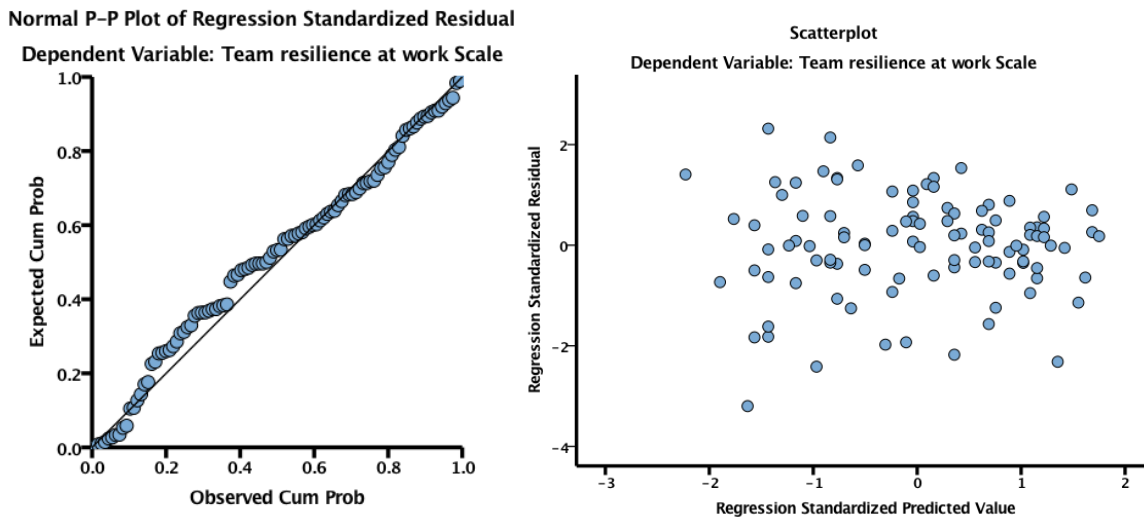


Figure 7: Normality testing – P-P Plot (left) & scatterplot (right)

Due to the sensitivity of the regression analyses, a further investigation to identify influential observations was conducted to confirm the integrity of the regression model. Firstly, a scatterplot of the centred leverage values and the standardised residuals was produced and revealed seven observations with standardised residuals outside ± 1.96 and one extreme outlier with standardised residuals outside ± 3 (Figure 7 right). All leverage values were under .058 which was the identified threshold for large leverage values at 3 times

$((k+1)/n)$. Secondly, to assess whether any of the identified outliers had leverage to exert an undue amount of influence on the regression line, Cook's distance values were assessed and revealed $M = .10$ ranging from $0 - .20$. Although no values exceeded 1.0 , nine observations were found to exceed $.039 (4/n)$, suggesting that these observations exerted significant influence on the regression model (Stephanie, 2016). Finally, to further explore the extent of this influence, a bar chart of Cook's values was produced and revealed that eight observations were not substantially different from the majority cluster of cases, however one observation was significantly distant with a value = $.20$. Based on these multiple forms of evaluation this observed case was removed from the analysis as it was deemed to exert an undue amount of influence on the regression line. Moving forward it can be assumed that homogeneity of variance and linearity are approximately normally distributed within the amended dataset. The assumption that observations are independent was also confirmed as the Durbin-Watson value = 2.30 , well within normal range ($1-3$), indicating that the errors in the model were independent of each other. Overall, it can be assumed that the regression model is a good fit.

Simple linear regression: analysis & interpretation. An initial inspection of the Pearson's r coefficient correlation matrix revealed very strong, positive, and statistically significant correlations between the TR@W scale and its seven subscales (Figure 8). This finding was expected and closely reflects the factor loading coefficients reported in the development of the TR@W scale (McEwen & Boyd., 2018), thus confirming the importance of these attributes of team resilience and supporting scale validity. The association between the R@W scale and its seven subscales was more variable however, finding statistically significant, positive, correlations ranging from moderate $r = .53$ to strong $r = .72$ correlations. Generally, this finding also reflects McEwen and Boyd (2018) and Winwood et al. (2013), exploratory factor analysis of the R@W scale reported a range of moderate to very strong factor loadings.

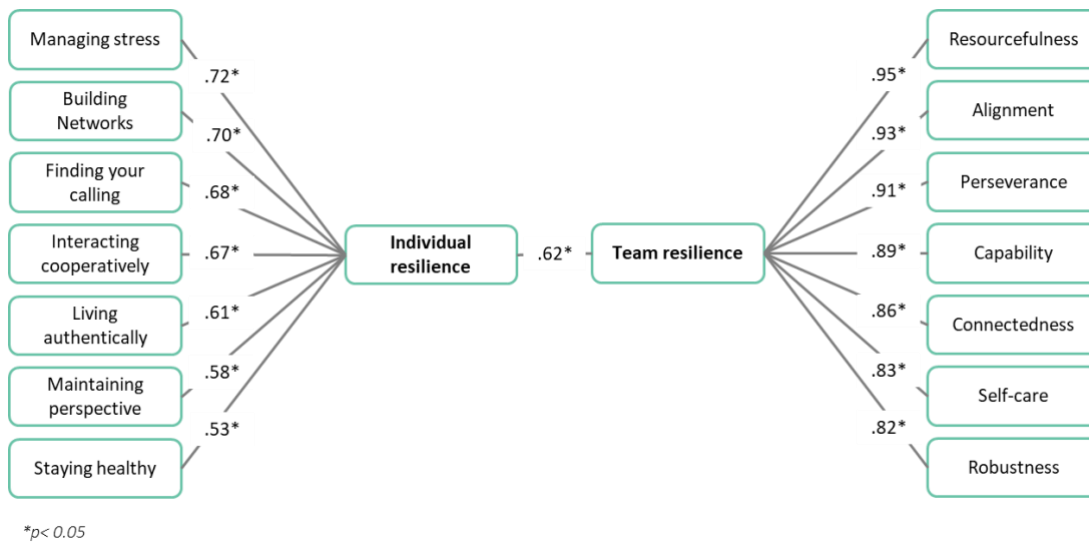


Figure 8: R@W & TR@W scales and subscale correlations

Hypothesis 2 is supported as a significant, strong, positive relationship is observed between TR@W and R@W ($r = .62, p < .001$). Hypothesis 3 is also supported by simple linear regression revealing that healthcare staff team member ratings of R@W did statistically and significantly predict TR@W ($F(1, 101) = 62.24, p < .001$), with R@W accounting for 38% ($R^2 = .38$) of variation in TR@W scores. The slope coefficient for TR@W scores increased by .83 for each incremental unit on the R@W scale if all other variables were held constant. Overall, these findings confirm that there is a strong interactive relationship between individual and team-level resilience. Looking more in-depth at the relationship between ratings of individual and team resilience, statistically significant, moderate correlations were observed between the R@W scale and all TR@W subscales, highlighting the importance of individual resilience on each core aspect of team resilience (Figure 9). Team SC, AL, and PE emerged as most associated with individual resilience, suggesting that the common features of optimism and coping skills that underpin these components are derived from individual resilient attributes.

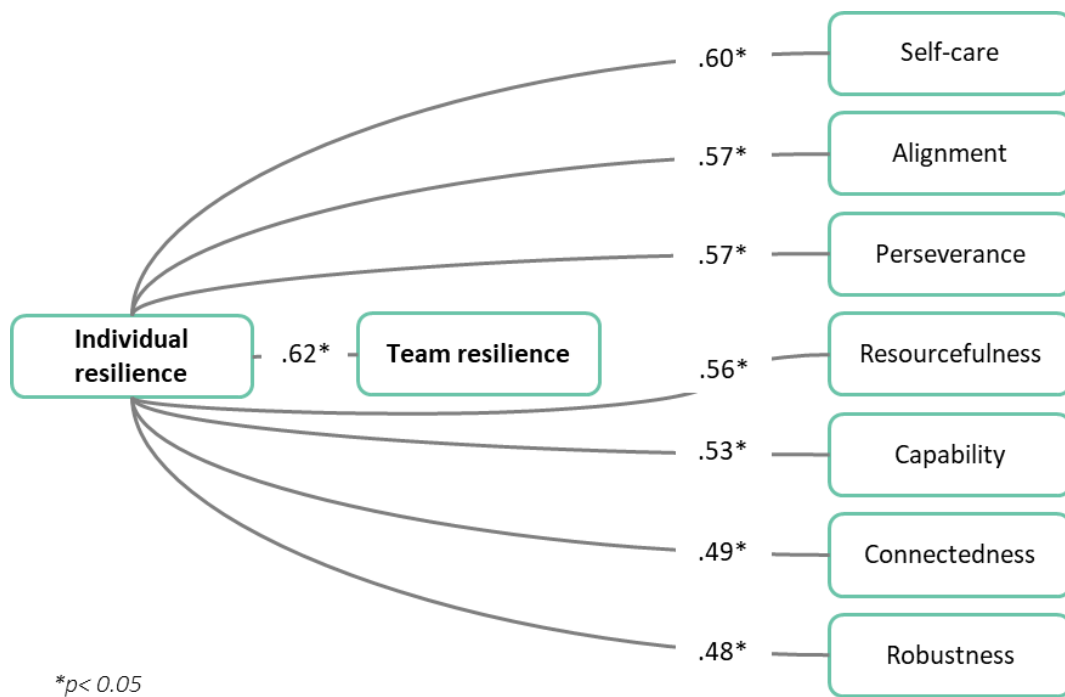


Figure 9: R@W scale and TR@W subscales correlations

Significant small to strong correlations were also observed between six R@W subscales and the TR@W scale (Figure 10). Although both BN and IC subscales were significantly associated with team resilience, as would be expected, the subscale FC was most highly correlated with team resilience, suggesting that finding work that has purpose, a sense of belonging and a fit with core values and beliefs are strongly related to team resilience. As expected no-significant relationship was identified between the SH subscale and team resilience as this component is uniquely an individual quality, however weak associations were also found between subscales MS and MP with team resilience. These weak associations suggest that team resilience does support individuals to manage stress and maintaining perspective during challenging times, however the severity of the pandemic may have further exacerbated individual stress thus outweighing the positive impact of the team. Overall, the association between the key components associated with individual and team resilience

highlight the interactive relationship between individual resilience and team resilience and further indicate the influence of individual resilience on team resilience.

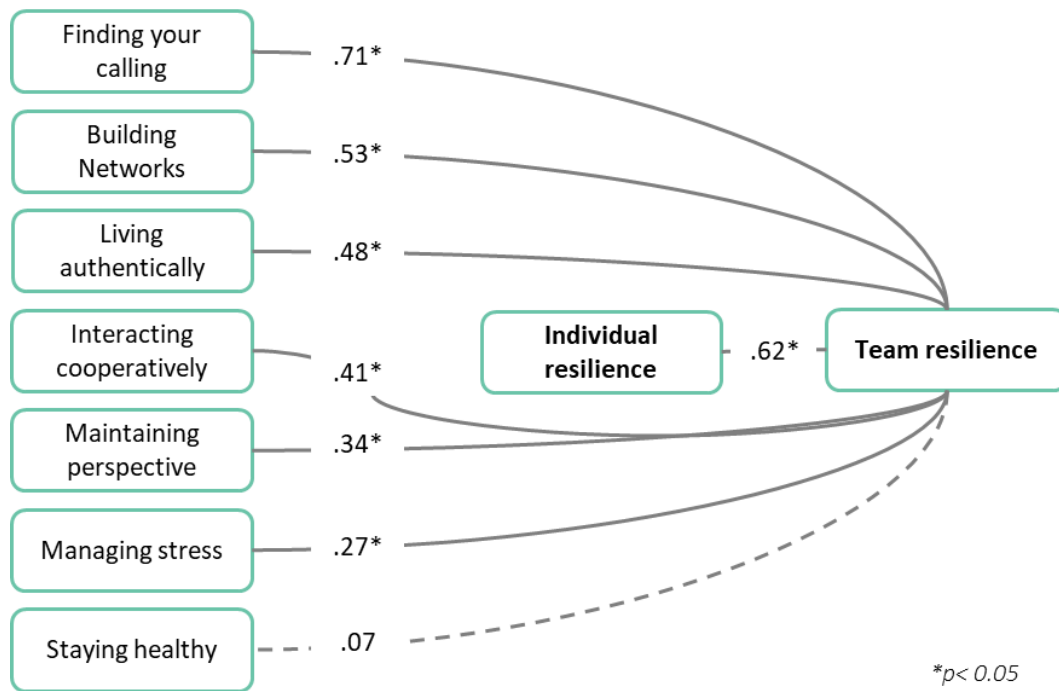


Figure 10: TR@W scale and R@W subscales correlations

At the subscale level all components of TR@W were significantly and highly correlated with each other (coefficients ranging from $r = .50$ to $.89$), however varying inter-subscale correlations were observed. Associations between FC, BN, LA, and IC were all moderately correlated, however inspection of the correlation matrix also revealed moderate to strong and statistically significant correlations between each of these four R@W subscales and at least six TR@W subscales (Table 5). Moderate correlations were also observed between the remaining three R@W subscales: MS, MP, and SH, however no obvious interaction with TR@W subscales were observed except on the MP subscale which reported moderately significant correlations with four TR@W subscales. Overall, inspection of the correlation matrix suggest that the R@W scale consists of two underlying latent component groups, of which one group consisting primarily inter-personal attributes of individual resilience (FC, BN,

LA, and IC), strongly interacts with attributes of team resilience. This observation partly addresses hypothesis 4 demonstrating that interpersonal components of R@W are positively associated with TR@W. However the need for further exploration to clarify whether the R@W scale contains two latent dimensions that capture components of common variance and their relationship with team-level resilience was warranted.

Table 5: TR@W x R@W subscale correlation matrix

Scale	SC	PE	CA	Ro	AL	RE	Co
Finding your calling (FC)	0.48*	0.63*	0.65*	0.61*	0.65*	0.74*	0.55*
Building networks (BN)	0.47*	0.40*	0.44*	0.43*	0.52*	0.50*	0.50*
Living authentically (LA)	0.32*	0.46*	0.33*	0.39*	0.52*	0.51*	0.36*
Interacting cooperatively (IC)	0.30*	0.37*	0.38*	0.42*	0.40*	0.35*	0.26*
Maintaining perspective (MP)	0.40*	0.33*	0.30*	0.29*	0.28*	0.22*	0.32*
Managing stress (MS)	0.45*	0.26*	0.24*	0.12	0.23*	0.22*	0.21*
Staying healthy (SH)	0.18	0.14	0.03	0.04	0.04	0.01	0.03

* $p < 0.05$

Principle component analysis: assumption testing. Principle component analysis (PCA) was utilised to reduce the number of variables in the R@W and TR@W dataset into common components. This process involved creating new variables to preserving as much information as possible (Jolliffe & Cadima, 2016). Alternative data reduction techniques were considered, such as exploratory factor analysis (EFA) which aims to reduce the variation of the items based on component variation. However, as PCA takes a formative approach to component construction based on item variation this data reduction technique was most appropriate (Korstanje, 2020). Expanding on this, the PCA conducted at the subscale level was required as the need for further exploration was identified based on the R@W and TR@W subscale correlation matrix. Although conducting PCA at the questionnaire item-level is common practice, data reduction at the subscale level is also justifiably used within the psychological literature to produce condensed meaningful data for interpretation (Ferguson, 2001; Scott, 2011). The suitability for conducting a PCA was met based on the observation of numerous

correlations between components of the TR@W with R@W components greater than .3 as described above. The Kaiser-Meyer-Olkin measure of sampling adequacy indicated that the strength of the relationships among variables was high (KMO = .88) which is above the recommended KMO = .60 required to proceed with the analysis (Pallant, 2007). In addition to this, Bartlett's test of sphericity was significant ($\chi^2(91) = 1115.99, p < .001$), indicating that at least one significant correlation between variables had been identified, thus it is assumed that an oblique relationship between factors exists. Furthermore, all item communalities exceeded .48, confirming that each item shared common variance with other items. Based on these indicators the factorability of the 14 resiliency components was confirmed.

Principle component analysis: analysis & interpretation. All 14 TR@W and R@W components were extracted utilising an oblique rotation and based on the Kaiser (K1) criterion for extracting factors with eigenvalues greater than 1, three factors were identified. Although this extraction method is widely used within PCA, it has been critiqued for extracting too many factors (Hayton et al., 2004), which in this instance the extraction of three factors was unexpected as inputted variables were based on two resilience scales. To confirm the extracted factors a parallel analysis was conducted as it is recommended to be a more accurate method of extraction (Wood et al., 2015). Parallel analysis involved the comparison of randomly generated eigenvalues (based on the same sample size) to observed eigenvalues and factors with higher values than those randomly generated were retained. This factor extraction method confirmed the K1 method as it also extracted three factors.

Between the three extracted factors weak to moderate correlations were revealed: $F_1:F_2 r = .18$; $F_1:F_3 r = .45$; $F_2:F_3 r = .20$, however the assumption of an oblique relationship between factors was not rejected as Tabachnick and Fidell (2007) suggests that correlations exceeding .32 indicate that enough common variance exists to justify an oblique rotation for subsequent

factor extraction. The three extracted factors collectively explained a total of 72.15% of the total variance. F_1 was robust with a high eigenvalue of 7.21, accounting for 51.5% of the variance in the data was extracted. F_2 and F_3 reported eigenvalues of 1.72 and 1.17, respectively, together accounting for a further 20% of the total variance. To identify variables related to each factor, loadings with magnitudes greater than .30 was deemed acceptable, furthermore as the mean factor loadings for each factor was greater than .60 (range = .60 to .70), this indicated that the modest sample size was sufficient to draw robust conclusions from the current analysis (Guadagnoli & Velicer, 1988).

A pattern matrix (Table 6) revealed that all seven TR@W components highly loaded onto F_1 with very good (.63) to excellent (.71) loading values (Tabachnick & Fidell, 2007). The R@W components MP moderately loaded onto this factor as well, but was highly cross loaded with F_2 . Similarly, FC highly cross-loaded with F_3 . F_2 contained three very good to excellent highly loading R@W components: MS, SH, and MP. TR@W components SC very poorly loaded onto this second factor. The remaining R@W components: IC, LA, FC and BN highly loaded onto F_3 . The variables loaded onto both F_2 and F_3 confirm the observations derived from the correlation matrix that the R@W scale consists of two latent dimensions.

Based on the factor loadings, F_1 was labelled "TR@W" as it captured all TR@W components. F_2 was labelled "R@W personal attributes" as components relate to an individual's KSAO's psychological capacity to maintain a solution focus and manage negativity, behavioural capacity to manage stress through personal routine and activities and an individual's physical capacity for maintaining a good level of physical fitness and a healthy diet. In contrast F_3 was labelled "R@W inter-personal attributes" as components capture individually held KSAO's that: (a) require team-level social interaction such as developing personal support networks and seeking feedback, advice, and providing support to others

within the work role; and (b) align with team identity in terms knowing and holding onto personal values while of seeking work that has purpose, a sense of belonging and that fits with core values and beliefs.

As F₁ consisted entirely of TR@W items the inter-item reliability for this factor remained excellent as previously determined ($\alpha = .97$). For F₁ and F₃ further Cronbach’s analyses were conducted and revealed good inter-item reliability for both factors $\alpha = .88$ and $\alpha = .80$, respectively, demonstrating the reliability and distinctiveness of each dimension. Descriptive statistics report F₂ M = 0.58 and F₃ M = 0.75, thus revealing that within the context of the pandemic individually held personal attributes were more negatively rated in comparison to individually held inter-personal attributes.

Table 6: Factor loadings

Subscale	F₁	F₂	F₃
TRW Capability	.90		
TRW Connectedness	.89		
TRW Resourcefulness	.88		
TRW Perseverance	.85		
TRW Self-care	.85	.31	
TRW Alignment	.85		
TRW Robustness	.68		
RW Managing Stress		.82	
RW Staying Healthy		.73	
RW Maintaining Perspective	.31	.60	
RW Interacting Cooperatively			.76
RW Living Authentically			.75
RW Finding your calling	.41		.66
RW Building Networks			.57
Eigenvalue	7.21	1.72	1.17
% of total variance	51.51%	12.29%	8.35%
Cronbach’s Alpha	.97	.80	.88

Hypotheses 4 – 5. Second simple linear regression: analysis & interpretation. Based on the outcomes of the PCA, a second simple linear regression was conducted to address hypothesis

4 & 5. Inspection of the correlation matrix supported hypothesis 4 revealing a significant, strong, and positive association between F_3 (Interpersonal components of individual resilience) and team resilience ($r = .70, p < .001$). The regression model further supported hypothesis 5 by revealing that F_3 was also a significant predictor of TR@W ($F(1, 101) = 94.34, p < .001$), and accounted for even greater variation in TR@W scores ($R^2 = 0.48$) compared with the original R@W. The slope coefficient for TR@W scores increased by .85 for each incremental unit captured by F_3 scale if all other variables were held constant. Overall, this regression model suggests that improving individually held inter-personal attributes (LA, FC, IC, and BN) will strengthen team-level resilience within the workplace.

Finally, the relationship between F_2 and TR@W, and F_2 and F_3 were both found to be significant but very weakly correlated: $r = 0.31, p = .002$; $r = 0.34, p < .001$, respectively. Overall, this suggests that individually held personal attributes (MS, MP, and SH) have minimal influence on both team-level resilience and individually held inter-personal attributes.

6.3.3 Demographic & resilience surveys

Hypothesis 6. A series of independent ANOVA analyses was an appropriate method by which to explore demographic influence on healthcare staff ratings of individual and team resilience. For all ANOVA analyses homogeneity of variances can be assumed as well as data normality as inspection of boxplots revealed no significant outliers and inspection of histogram plots confirmed that the data was approximately normally distributed.

ANOVA descriptive statistics, analysis & interpretation. Inspection of descriptive statistics for each demographic variable was conducted followed by inferential testing which included post-hoc Bonferroni comparisons tests for areas identified as significant.

Individual-level demographic - age. In terms of age, respondent TR@W scores were largely homogenous across the age categories with the 18-29 and 60+ groups $M = .70$, compared to the middling age groups ranging from $M = .58 - .66$. As the 30-39 age group tended to score the lowest across both scales and subscales a significant difference was expected between this group and with either the 18-29 or 60+ age group, particularly on the TR@W PE subscale: 18-29 $M = .76$, 95% CI [.67 – .85] and 30-39 $M = .57$, 95% CI [.49 – .65]. Although not as pronounced, the 18-29 and 60+ age groups also scored higher on the R@W scale $M = .69$ compared to the other age groups $M = .64 - .68$. Confirming expectations, statistical analysis revealed that 18-29 scored significantly higher on the TR@W PE subscale, compared to 30-39 age categories ($F(4, 98) = 2.91, p = .025$; MD = .19). This finding suggests that the younger age category had a more positive perception of their team’s resilience and ability to persisting in the face of obstacles. No other statistically significant differences were observed.

Individual-level demographic - sex. Male and females scored comparably on both the TR@W and R@W ($M = .64$, 95% CI [.58 – .70] and $M = .66$, 95% CI [.62 – .70]; $M = .65$, 95% CI [.59 – .72] and $M = .68$, 95% CI [.65 – .70], respectively). Subscale scores ranged from $M = .48 - .80$, corresponding with the average resiliency measures scores. Overall review of descriptive statistics highlighted that females scored higher than males across both scales and associated subscales. Although no considerable differences were observed on initial inspection, statistical analysis revealed that females scored significantly higher than males on the R@W FC subscale ($F(2, 99) = 3.62, p = .030$; MD = .09). This finding suggests that females more highly experienced a sense of belonging within their current role and that their work fit with core values and beliefs. No other statistically significant differences were observed.

Team-level demographic - ward type. Initial inspection of the descriptive statistics revealed that medical ward staff scored higher on both the TR@W and R@W scales compared to

surgical. ($M = .70$, 95% CI [.65 – .75] and $M = .62$, 95% CI [.56 – .79]; $M = .65$, 95% CI [.58 – .72] and $M = .57$, 95% CI [.49 – .66] respectively). The “other” ward category scored comparable to the medical group however the primary reason for including this demographic group was to explore the differences between medical and surgical wards and therefore this is the focus of the inferential analysis. Looking more closely at the descriptive statistics for resilience survey subscales a significant difference was expected on the R@W IC subscale due to medical ward staff scoring $M = .074$, 95% CI [.68 – .81] in comparison to surgical ward staff scoring $M = .59$, 95% CI [.48 – .70]. Statistical analysis confirmed this observation ($F(2, 99) = 4.42$, $p = .015$), suggesting that medical ward staff more frequently experienced team practices such as seeking proactive feedback, advice, and support from other team members as well as providing support to others.

Team-level demographic: team length. TR@W and R@W scale ratings were observed within the average range (60 – 70%) across all team length categories. TR@W subscale CO, LA and R@W subscale FC were however highly rated ranging from 70 – 80% across all demographic categories, thus highlighting the prominence of these components regardless of team length. In contrast TR@W subscale SC was rated lowly across all categories particularly for staff who had worked in teams for between 6 – 10 years $M = .49$, 95% CI [.36 – .61]. This observation of generally perceived lower self-care across the team length categories may be due to the unprecedented pressure placed on teams within the context of the pandemic. Looking at differences between the team length categories, staff who had been part of their team for 0 – 1 year and 11+ years generally rated resilience scales and subscales higher than the mid-range team length, particularly the 6 – 10-year team length category which appeared to more often than not score the lowest on the resilience scales and subscales. With this in mind significant differences were expected between these categories and this was found to be true as members who had been part of their team for 6 – 10 years rated R@W MP subscale

($M = .33$ 95% CI [.022 – .44]) significantly lower compared to staff who had been part of their team for less than one year ($M = .59$ 95% CI [.49 – .69]) and also over 11+ years ($M = .51$ 95% CI [.45 – .57]): ($F(3, 99) = 5.08, p = .003$). This suggests that team members in these categories experience enhanced individual capacity to maintain solution-focused and manage negativity, demonstrating the interactive relationship between team and individual resilience.

Team-level demographic - profession. Focusing on the nursing, doctor and HCA professions, initial inspection of the descriptive statistics shows that each of these professions comparably rated both individual and team resilience ($M = 0.56 - 0.71$). R@W LA subscale was highly rated by all groups ($M = .75 - .81$), suggesting that working during the pandemic resonated with individual personal values and strengths. TR@W PE subscale was also highly rated by all three professions ($M = .60 - .71$) suggesting that despite the challenging working conditions, teams remained optimistic and solution focused within their professional role.

Between the professional groups however nurses generally rated team and individual resilience higher than both other professions (TR@W $M = .70$, 95% CI [.65 – .74]; R@W $M = .71$, 95% CI [.67 – .74]) particularly on the R@W FC subscale: $M = .80$, 95% CI [.76 – .84] thus suggesting that the nursing profession identified a strong purpose in their work that fit with individual values and beliefs while working during the pandemic. Doctors however rated team resilience slightly lower than individual-level resilience (TR@W $M = .56$, 95% CI [.36 – .75]; R@W $M = .62$, 95% CI [.51 – .73]). On the R@W scale however the MP subscale was rated noticeably lower than the scale average: $M = .49$, 95% CI [.36 – .61], this trend was also observed in nursing and HCA scores, suggesting that managing negativity and maintaining solution focused was a challenge for all professional groups as expected. Overall, these series of analyses confirm hypothesis 6 in that team-level demographics as well as individual-level demographics moderate experiences of team resilience within the healthcare setting.

6.4 Discussion

The objective of this phase one sub-research study was to survey healthcare staff to explore perceptions of team resilience in the healthcare setting. Several specific sub-research questions and hypotheses were put forward and research findings are discussed in this light.

6.4.1 Main findings

The need to promote team resilience in the workplace. The research study was conducted within the context of the pandemic which, with reference to the proposed framework for promoting team resilience in the workplace, is viewed as a major/severe real-world adverse event experienced by healthcare teams. The survey findings provide unique insight into healthcare team functioning during such challenges and consequently perceived influence on team resilience. Within this context it was expected that team and individual resilience would be significantly negatively impacted due to the severity of the pandemic on both individual wellbeing (Cole et al., 2020), and team functioning (White, 2020). This was not however found to be the case as both team and individual resilience were rated over 65% which is consistent with previous findings in non-healthcare settings (McEwen & Boyd, 2018). As this research is the first known survey of team and individual resilience within the healthcare setting, no baseline measures were available as a comparator. As a standalone measure the findings indicate medium to strong healthcare team and individual resilience suggesting that pre-existing team resilience practices and activities are already in place that facilitate the emergence of team-level resilience. Within the healthcare setting, reflective practices, goal setting, mentoring, and other means of professional development are integrated into clinical practice (Liang et al., 2019), such activities are associated with resilient teams and are recommended as relevant and beneficial for teams to engage in to facilitate the emergence of team resilience (Mistry et al., 2015). Therefore, in response to the first sub-research

question, although team resilience was well rated following experienced workplace challenges, there is still scope for resilient team behaviours to be improved.

Individual and team resilient attributes. Resilient individual qualities can be utilised to enhance team-level resilience. Research findings revealed a strong relationship between individual and team resilience, with the inter-personal attributes of team members positively predicting team-level resilience. This finding supports the proposed framework of team resilience, as well as other recent team resilience theories (Gucciardi et al., 2018; Senturk, 2018) which recognises that human capital resources such as individually held team member knowledge, skills, and abilities, underpin the capability of a team to maintain team functioning during periods of perceived adversity. More specifically, team member human capital resources are transformed to team-level resources through individual resilient inter-personal attributes and practices that manifest in positive team working relationships, such as seeking feedback and advice, developing and maintaining personal support networks, providing social support for others, and having an awareness of and deploying own individual strengths within the workplace (Winwood et al., 2013). These inter-personal psychosocial practices are derived from individual team members that collectively contribute to team system design features such as communication and information-gathering systems, social support networks, and decision-making structures which are essential team processes to maintain team functioning when experiencing challenging working conditions (Senturk, 2018).

Although the individual-driven motivation to interact cooperatively through the processes described above bolster the capabilities of a team, a resilient team is not solely a group of resilient individuals (Gucciardi et al., 2018). This was reflected in the survey findings as respondents highlighted the importance of aligning personal values and beliefs with workplace goals and objective to provide a sense of purpose and belonging. These finding

suggest that the relationship between individual and team-level resilience is not unidirectional, but rather that individual team members benefit from robust resilient team attributes (Bowers et al., 2017). Outside of individual resilient inter-personal attributes, the identification of personal attributes is also important to note. The capacity of an individual to remain solution focussed, manage everyday stressors, maintain a work-life balance as well as a good level of physical fitness, are well documented within the literature as important for maintaining individual resilience and wellbeing (Marx et al., 2014; Oliver et al., 2017). Although this cluster of individual characteristics was not found to be significant predictors of team resilience, individual behaviours such as being alert to the overload of other team members and being supportive of one another and encouraging a sense of belonging did have a positive impact on ratings of team resilience.

Another important aspect of teams to consider are the characteristics of individual team members. Although no significant differences were found at the main scale level, the study findings did reveal fluctuations in ratings of a team's ability to persevere when experiencing challenging situations between younger and middle-aged staff. In a similar manner, team members who had been part of their current team for less than one year rated their ability to maintain a solution focus and managing negativity significantly more than those who had been within their current team for between 6 – 10 years. A similar effect was also found between staff who had been part of their current team for more than 11 years and those between 6 – 10 years. This 'U' shaped curve of team resilience ratings based on length of time in a team, at face value suggests that new team members and longer serving team members perceived their teams to be more resilient than those of a middling length. Team members draw on different aspects of inter-personal attributes over time. For example, induction training and practice placements as part of professional training courses aim to support and integrate newly qualified clinical staff into healthcare practice. Birmingham Women's and Children's

NHS Foundation Trust in collaboration with Birmingham City University developed a programme to support the transition from student to newly qualified nursing professionals and to enhance retention (Nursingtimes, 2020). The programme included both specific clinical knowledge and skills as well as team-based practices such as communication, teamworking, and reflective practices. In a similar manner, Rothwell et al. (2013), recommend several ways to provide on-going workplace support for new overseas-qualified doctors to integrate into UK healthcare practice including mentoring, general social support, and team training programmes. This enhanced level of support provided by other team members and external systems to aid integration and team membership, capitalises on inter-personal team attributes and can lead to improved team functioning during experienced adversity.

At the other end of team membership, longer serving team members have built long standing inter-personal relationships with other team members and have a stronger connection with team identity and culture that align with personal values and beliefs, thus utilising different aspects of team and individual resilient attributes (Silva et al., 2016). Wilson et al. (2007), suggest that teams are better able to adapt behaviours to new situations (e.g., experienced adversity), through the robust storage and retrieval of collective knowledge. Wilson et al., further state that team members serve as important resources for information recall and retrieval, thus teams with stable and longer serving team members have more reliable knowledge retrieval processes compared to teams that experience regular changes in membership. Silva et al., state that this process captures the concept of transactive memory systems (TMS), which, as previously discussed, describe how the sharing of individual memory capacities within a team allows for large quantities of information and expertise to be stored and retrieved as an efficient process. Positive relationships between individual team members enhance TMS as new members can learn who holds what knowledge and expertise within a team (Choi et al., 2010), thus enhancing the quality of team SMM (Senturk, 2018), which are

identified as emergent state outcomes that facilitate team resilience (Stoverink et al., 2020). Within practice, Kneisel (2019) identified that high-quality team reflective learning behaviours enhance team SMM, that in turn enhances team functioning which, within the context of adversity can facilitate the emergence of team resilience.

Although the current study did not specifically aim to explore the impact of team membership length on team resilience, the findings indicate that this is an area of research worth exploring further and that more support may be required for team members with a middling length of team membership so to promote and maintain team resilience throughout being part of a team. Ensuring that all team members receive relevant inter-personal support and encouragement to engage in reflective learning behaviours within the team, will enhance team resilience as well as individual resilience due to the interactive relationship between the two concepts. Soon and Prabhakaran (2017), through interviews with three public service teams that had each worked for at least one year together, identified several emerging themes of resilient team behaviours including: good team relationships, open communication, the presence of trust, psychological safety, and the existence of cooperative team processes. Based on these outcomes Soon and Prabhakaran identified several key aspects of future interventions that could promote each of these team affective, cognitive, and behavioural domains, creating a safe, social environment to facilitate other important resilient team behaviours was noted to be of most significant importance. Carmeli et al. (2013), state that good working relationships increase team capacity for resilience as positive inter-personal relationships within a team contribute to an environment of trust and psychological safety. The creation of a safe working culture encourages team members to engage in honest interactions necessary to facilitate creative and reflective learning in action and consequently lead to positive action in practice (Carmeli, 2007). As previously discussed, the utilisation of both individual and team-level reflective learning behaviours are noted to be

key team cognitive attributes associated with team resilience emergent outcome states of team cohesion, psychological safety and enhanced SMM (Alliger et al., 2015; Mistry et al., 2015; Hartwig et al., 2020). Creating a safe team environment through encouraging positive team relationships to engage teams in reflective learning behaviours has the potential to further promote team resilience by targeting both affective and cognitive attributes of team functioning (Ilgen et al., 2005).

Intervention considerations. Intervention design and content need to be specifically developed to encourage positive team relationships to facilitate both individual-level and team-level resilient behaviours as highlighted by the current study outcomes. In terms of intervention format and delivery, Agteren et al. (2018), delivered a two-day resilience training programme for clinical and non-clinical healthcare staff in groups of 50-60 participants. The training programme covered a variety of individual skills and group learning activities (e.g., mindfulness, reflective learning, goal-setting and situational awareness) resulting in improved individual resilience (Brief Resilience Scale; $r = .51, p = .02$) and wellbeing (PERMA-profiler; $d = .29, p = 0.001$). Although the positive outcomes can be attributed to the programme content, the group environment and activities would have been purposefully designed to enhance the effectiveness of the intervention due to the interactive relationship between individual team members and the wider teams. Group-activities allow for positive interpersonal attributes to be developed such as social support, boundary spanning and sharing best practices (Mistry et al., 2015; Alliger et al., 2015), which are more advantageous to team development than solely individual-focused activities (Gray, 2016).

Although not explicitly stated by Agteren et al. (2018), the group-based intervention design and delivery most likely emerged due to convenience and practicality rather than purposeful intervention design. Pragmatic approaches to intervention design are common within

organisational research practice. Ingham et al. (2013), aimed to design an intervention and evaluate its effectiveness for reducing emotional reactions to challenging behaviour and staff burnout. It was recognised however that the influence of organisational constraints on programme format and delivery due to large team size would limit feasibility in practice, thus reducing the duration of the programme and content and resulting in the implementation of a short, high-intensity workshop. A reduction in emotional reactions to challenging behaviour was observed following the workshop, however no reduction in staff burnout was found. These mixed outcomes raise questions regarding intervention effectiveness and whether alternative design options would have improved its success. Healthcare work-based interventions will inevitably be subject to organisational and other constraints. To mitigate the impact of environmental limiting factors, O’Cathain et al. (2019), recommend that the development process of health-focussed interventions should include the involvement of stakeholders, drawing on existing knowledge and understanding the contextual environment, to specifically inform intervention design.

Alongside intervention design and content, intervention implementation timing is also important to consider. The current survey was implemented within the context of the pandemic. The pandemic is used here as a general term to capture the variety and severity of challenges the healthcare staff experienced during this period. In the UK, the first peak of the pandemic was in the first quarter of 2020 and the second peak towards the end of the fourth quarter of 2020. The current study took place between September – November 2020, thus although still taking place within the context of the pandemic, healthcare staff were not experiencing the same level of unexpected workplace adversity and challenges. Gucciardi et al. (2018), conceptualise the emergence of team resilience as being timebound relative to the onset of perceived adversity. For example, a team that returns to normal functioning following adversity within a few weeks may be considered resilient, whereas another team that takes

six months to recover to normal functioning from the same experience may not be considered resilient. Considering this, the point at which the current surveys measured team resilience suggest that healthcare staff emerged as resilient following experienced challenges and recovery to normal functioning occurred within an appropriate timeframe.

Implementation timing is an important aspect of intervention design as this will influence its purpose and desired outcomes. Chmitorza et al. (2018), propose three variations of study designs to test the effectiveness of resilience-based interventions: implementation before, during or after exposure to adversity. Interventions implemented prior to adversity can be seen to maximise the pre-existing systems design teams to prevent or minimise the potential impact of experienced adversity of team functioning. Interventions implemented during exposure to adversity would have two primary objectives: firstly, to treat the observed impact on functioning and secondly to prevent further deterioration. Finally, interventions implemented after exposure to adversity would primarily focus on treatment and recovery to normal levels of team functioning. Each intervention design would have to pre-test and post-test measures to assess intervention effectiveness which would allow for a comprehensive evaluation of resilience-based interventions, as timebound recovery following exposure to adversity is the primary determinant of the emergence of team resilience. Within real-world practice however, exposure to unexpected adversity has the most negative impact on team functioning, thus implementing resilience interventions prior to adversity would only be possible if the adversity and its severity were expected. Conducting an intervention during live exposure to adversity is the time when teams will benefit the most, paradoxically however this implementation timing poses the most challenges in terms of intervention acceptability and feasibility, as teams may not have the desire or have time to engage due to the severity of the experienced challenges. Therefore, practicality suggests that implementing resilience-

based interventions after exposure to adversity will be more feasible, however this raises the question as to whether the opportunity to best support teams has been missed.

The proposed process of team resilience subjectively views adversity as it is based on perceived experience and severity determined by pre-existing team capability. In a similar manner the point at which the need for additional support for teams to return to normal functioning is recognised and the point when teams have returned to normal functioning is also difficult to determine without routine monitoring. Another important issue to add into this, is that adversity is not normally a single event with specific beginning and end points (Green et al., 2010), for example the pandemic included a range of challenges, that changed in severity over time. Therefore, in practice, outside of a controlled environment, the implementation of an intervention planned to occur either before, during, or after exposure to adversity is possible but would mostly capture more than one timepoint. Although the timing of intervention implementation is important to consider this should not be the key driver of intervention purpose or outcomes. With all of this in mind, an intervention that aims to both maximise pre-existing team systems and aid recovery through a flexible design would be useful and relevant in practice as it could be implemented at any time before, during, or after exposure to adversity and provide positive outcomes.

6.4.2 Study limitations & recommendations

The primary limitation of this study was the challenging circumstances within which the surveys took place, and this inevitably impacted responses as participants were encouraged to rate resilience with reference to their current working experiences. Due to the unprecedented nature of the pandemic in terms of severity and the variability of the impact and management of related experienced challenges between NHS Trusts, this will have resulted in responses that are limited to the specific context of the research site, thus reducing

the external validity and application of the findings outside of this setting. While acknowledging this limitation, healthcare teams are the primary focus for this research project as directed by organisational, therefore the research outcomes are sufficient for the purpose of this sub-research study and do to a certain extent shed light on broader NHS staff experiences team resilience in the healthcare setting within the context of the pandemic.

This study has a modest sample size, that is above the minimal calculated to achieved statistical power $>.80$ ($N = 84$), and over the generalised benchmark of 100 as an acceptable sample size to produce meaningful results (Faul et al., 2009; Bullen, n.d). Survey uptake diminished due to the impact of the pandemic-related challenges, as healthcare staff were working in very stressful and challenging conditions and therefore may not have had the time or motivation to participate in the research study compared to less challenges periods. Although the resilience measures were specifically selected due to strong internal validity, these surveys required a significant amount of time and attention, as prospective participants may have been dissuaded from participation due to perceived high response burden (Rolstad & Ryden, 2011). Although research measurement selection decision-making should be based on content veracity so not to compromise or risk research validity, the impact of measures in terms of response burden should be carefully considered so minimise barriers to participation. In addition to this, the promotion and advertisement of the research study was limited to an online newsletter rather than on-site recruitment due to the restricted site access. Although the newsletter was accessible to all NHS staff on the distribution list, this will have skewed the sample to towards those who had the time and ability to access the online survey during work, thus again negatively impacting the scale of the research findings.

Despite these challenges, this was a real-world study conducted during a period when healthcare staff experienced and had to respond to challenging workplace conditions,. This

characterises the concept of team resilience and adds to the internal validity of this study providing unique insight into healthcare staff resilience, as is the primary purpose of the overarching research study and purpose of the thesis. It is also important keep in mind that the findings of the current study should be viewed in conjunction with the outcomes of the systematic review and staff interviews which, in combination, address the main aim of this initial first research phase by contributing to the development of the intervention to promote healthcare team resilience. To this end, several recommendations are put forward:

R12: Create a social environment that encourages team members to engage in reflective learning behaviours to facilitate both team and individual-level resilience

R13: Incorporate resilient team activities that are individually driven to encourage interaction between team members

R14: Include content that engages and benefits team members of varying team membership length in resilient team behaviours

R15: Ensure flexible format and delivery of content that is relevant and appealing to healthcare teams to enhance engagement if implemented at different timepoints when teams are experiencing various workplace challenges, (e.g., before, during or after perceived adversity)

6.5 Chapter summary

The current chapter has presented the data collection procedures, findings, and interpretation of the third, sub-research study of the initial research phase which surveyed healthcare staff to explore perceptions of team resilience in the healthcare setting. The outcomes of this study validate several aspects of the proposed framework for promoting team resilience in the workplace, as well as highlight the interaction between inter-personal attributes of individual team members and team-level resilience. This sub-research study

contributes to the phase one main aim of developing an intervention to promote team resilience in the healthcare setting by providing key insight into current perceptions of team strengths and areas that require improvement to enhance the ability of healthcare teams to maintain team functioning when faced with challenging working conditions. The recommendations put forward are synthesised in the next chapter alongside outcomes from the systematic review and staff interviews, to collectively inform the development of the intervention to promote resilience in healthcare teams.

CHAPTER SEVEN

An Intervention to Promote Team Resilience in the Healthcare Setting

7.1 Chapter overview

The chapter follows the eight step Behavioural Change Wheel process (Michie et al., 2014) to integrate team resilience theory, phase one recommendations, and consultation with NHS stakeholders, to fulfil the following objective:

Objective 4: Utilise the Behavioural Change Wheel to design an evidence-based intervention to promote resilient practices in healthcare teams

7.2 Stage 1: understanding the behaviour

7.2.1 Step 1 - 2: defining the problem & selecting the target behaviour

Chapter one highlighted the rising trend of work-related stress across the NHS as a whole and within the specific NHS Trust involved in this research project. Organisational stakeholders identified the promotion of positive relationships within multi-disciplinary ward teams as a research priority to help tackle this issue. To this end, a theoretically relevant framework for promoting team resilience in the workplace was proposed to underpin the research approach. The literature review highlighted the issue of limited knowledge of team resilience within healthcare practice, thus multiple research methods have been implemented to enhance understanding of team resilience within the research context.

The systematic review revealed that no interventional research specifically promotes team-level resilience within healthcare practice. However, at face value and only as secondary research outcomes, a minimal number of interventional research studies conducted within healthcare practice report improvements in team functioning within the context of adversity,

and, of these studies, reflective learning was highlighted as an important element that promoted positive team functioning. Adding to this, interviews with healthcare staff identified that the already pressurised healthcare workplace setting has been further exacerbated by the adverse events of the pandemic. Despite this, staff interviews also revealed that engaging in informal reflective learning practices such as sharing experiences with other team members, encouraged psychological safety, trust, a sense of connectedness, and solidarity within teams. Through this form of simple oral reflection, participants reported a positive impact on multidisciplinary team working relationships within the workplace, that facilitated team functioning within the context of adversity. Staff surveys further align with these emerging themes, as participants highlighted the importance of team member actions such as reflective learning, seeking/providing feedback, advice, and social support within the workplace. Results revealed a positive association between resilient individual and team attributes such as team connectedness and resourcefulness, that are essential for maintaining or recovering team functioning when working in challenging environments. Therefore, within the context of this thesis, to tackle work-related stress through encouraging positive team working relationships, phase-one research recommendations identify two key areas of focus for a healthcare team resilience intervention: reflective learning content and a multilevel interactive format (Table 7).

Table 7: Analysis of intervention recommendations

	Phase One Recommendation														
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Reflective learning content			✓					✓	✓		✓	✓	✓		
Multilevel interactive format	✓	✓	✓	✓	✓	✓	✓		✓	✓		✓	✓	✓	✓

Literature review of intervention team reflective learning and team resilience. Initially described as the active and persistent consideration of knowledge (Dewey, 1933), conceptualisations of reflective learning have evolved over time and have become closely associated with action in practice, observed to improved team-level performance, effectiveness, and innovation (Carter, 2013). Otte et al. (2018), view team reflective practice within Marks et al. (2001) taxonomy of team processes, in which teamwork occurs over time through repeating periods of transition and action. During transition phases, teams evaluate and identify required action to achieve team goals, subsequently these plans are put into action through taskwork followed by further transition and action phases. Otte et al., argue that team reflection is a transitional process that is vital for team functioning as it enables teams to analyse and evaluate previous actions to inform subsequent action phases. This proactively improves team capacity to enhance performance outcomes.

Stoverink et al. (2020), integrate Marks et al.'s (2001), taxonomy of team processes within team resilience literature by mapping Alliger et al.'s (2015), 40 minimising (pre-adverse event), managing (during adverse event) and mending (post-adverse event) resilient team behaviours onto transition and action phases. Schön (1983), suggests that an event reflective practice informs the experience itself, decision-making, and immediate action; furthermore, post-event reflection considers the event in hindsight and accounts for what needs to change in future practice. Schön's model distinguishes between reflection *in* action and reflection *on* action, highlighting different forms and implications of reflective practice within the workplace. In relation to team resilience, the former captures Hartwig et al.'s (2020), understanding of reflective practice as an important mediating cognitive process that enables teams to positively adapt to experienced adversity through seeking creative solutions and moderating team behaviour based on current team capacity and potency. The latter, reflection *on* action also relates to team resilience as internal reflection on how a team

responded to the experienced workplace challenges influences team SMM's of their current state of resilience (Nancarrow et al., 2015). This in turn influences the response to future challenges as teams are better able to adapt behaviour and co-ordinate a response based on up-to-date and relevant shared information about team capabilities in times of crisis (Otte et al., 2018). In addition, regardless of whether a team successfully overcomes workplace challenges, engaging in reflective practices highlights areas of strength as well as deficiency which in turn informs further team learning and skill development to enhance team capacity (Gucciardi et al., 2018). Individual team members as well as relevant higher organisational systems also reflect on how a team unit responds to challenging situations thus providing an opportunity to strengthen team capacity through both interactive top-down and bottom-up boundary spanning activities (Ancona & Caldwell, 1992; Mistry et al., 2015; Alliger et al., 2015).

Reflection enables professionals to cope with change and complexity within the workplace (Kolb, 1984). Gibbs (1988), encourages personal reflection through a six-phase step-by-step cycle of reflective learning involving describing, analysing, and action-planning with emphasis placed on considering feelings and emotions. Jack and Smith (2007), state that this is an important element of self-reflection as self-aware practitioners are better able to function in stressful environments rather than simply coping. By encouraging self-awareness of uncomfortable feelings and thoughts, practitioners can critically analyse, synthesise, and evaluate knowledge, to move towards a new perspective and informed action (Atkins & Murphy, 1993). Although reflecting on challenging experiences can be difficult and cognitively demanding, this focus enables practitioners to examine and evaluate assumptions and workplace norms to bring about new perspectives and inform actions to enhance individual behaviour in practice. This progression of in-depth reflexivity aligns with Bloom et al.'s (1956), taxonomy of learning highlighting the complex interactivity of the concept as good quality reflective practice requiring an active commitment to learning and development.

Another reflective model that is commonly used within clinical practice is Rolfe et al.'s (2001), revision of Borton's (1970) 'What' model. The addition of further prompts and cues to the progressive questioning of this three-step cyclical model encourages individuals to firstly describe the event, (e.g., what happened, what did I do, was the outcomes good or bad), secondly analyse the event (e.g., what is the importance of this, what more do I need to know about this, what have I learned about this), and finally propose a way forward following the event (e.g., now what could I do, now what should I do, now what would be the best thing to do, what will I do differently next time). Although relatively simple at face value, this reflective model encourages comprehensive and detailed reflection and subsequent action from practitioners in a similar manner to Gibbs' reflective cycle but is more memorable and practical to implement in practice (Nicol & Dosser, 2016). Nicol and Dosser also state that the three reflective questions provide a degree of flexibility for practitioners to utilise the model for both reflection *before, in, and on* action, highlighting the generalisability of this reflective line of inquiry in clinical environment. Through its simplicity however, Bishop and Blake (2007) state that this model does not encourage practitioners to consider feelings and emotions to the same degree as Gibbs' model (1988), thus posing the risk of missed opportunities for deeper and more meaningful reflection leading to positive action in practice.

Engaging in repeated and regular team reflective sessions significantly increases team performance and is moderated by the quality of team SMM (Kneisel, 2019). Otte et al. (2018), found that teams that focussed on maximising the quality of shared reflections experienced the most improvement in team performance when compared to other teams that tried to engage in both high quality and high quantity reflections. In combination, these studies suggest that increasing the quality of the team reflection, enhances team SMM, which in turn enhances team performance. Although these studies focus on the relationship between team

reflective practice and team performance, the underlying principles relate reflective practice to team resilience as the only differentiating factor between team-level performance and resilience is the context of adversity (Gucciardi et al., 2018). Stoverink et al. (2020), state that reflection is an important team inter-personal process as reflecting on successful achievements following experienced challenging situations improves team potency, thus strengthening team capacity in preparation for future challenges. Moreover, reviewing past adversities and team responses further refines the quality of team SMM as team reflections provide an opportunity for members to share individually held knowledge with others. This contributes to an acute shared understanding of team capability, resulting in improved functioning when experiencing challenging situations. Based on her research, Kneisel (2019), recommends that organisations need to explore how reflective processes can be deliberately enhanced in teams and effectively integrated into daily routine.

Literature review of multilevel reflective learning practices and team resilience. A multilevel interactive approach is key to promoting team resilience within clinical practice. Contemporary models of team resilience visualise the concept within higher-level organisational macro-systems (Senturk, 2018; Mistry et al., 2015) or lower-level individual micro-systems (Gucciardi et al., 2018; Hartwig et al., 2020), however the proposed framework for promoting team resilience in the workplace combines both, with team resilience forming the meso-system within a systemic context. High quality multilevel interaction, through social support, reflective learning, and boundary spanning activities improve team emergent states. This in turn improve team functioning when experiencing adversity and facilitate the emergence of team resilience.

Reflective writing can have a positive impact on both teams and individual team members (Loo & Thorpe, 2002). Through engaging university student teams in regular reflective writing,

Loo and Thorpe found that reflective learning journals effectively promoted critical reflection as well as encouraged participants to take specific action to improve individual and team performance. In addition to being popular and effective pedagogical learning activities, Niles et al. (2014), found reflective writing to produce positive psychological outcomes, observing a significant reduction in participant anxiety with highly expressive writing. Utilising interactive expressive writing in the clinical setting, Knowles and TARRIER (2009) evaluated the effect of diary-keeping on levels of anxiety and depression in intensive care units (ICU) survivors. ICU nurses kept diaries for patients during admission and results revealed a significant decrease in both anxiety and depression experienced by patients following engagement with the diary intervention (measured by the Hospital Anxiety and Depression Scale – HADS), whereas no effect was found in the control group. Although Knowles and TARRIER attributed the observed effects to the diary intervention, Jones (2009), commented that this conclusion cannot be reliably drawn as the reduction in patient anxiety may have been influenced by the additional one-to-one time that nurses spent with patients providing support and comfort during their periods of severe adversity and trauma. Jones further noted that the facilitatory role of the nurse in this study required a sensitive and tailored approach so that diary reflections were conducted at the right pace and speed for the patients. This person-centred approach emphasises the importance of not only the reflective diary content but also that individual attitudes, team processes, and organisational culture can influence the successful implementation and feasibility for utilising reflective tools in practice. Although Knowles and TARRIER utilised nurses to engage with patients in the diary intervention, again, spending such a significant amount of additional time with patients may not be possible in practice for many practitioners despite best intentions, especially during challenging workplace situations.

Also utilising an interactive diary-style writing format, Stephens (2012) delivered an online Twitter-based intervention to increase resilience and support for nursing students, where

over a six-week period the researcher posted questions and comments to encourage participants to engage in online conversations. As a result, the experimental group demonstrated an increase in resilience from pre- to post-intervention and a decline in perceived stress. This novel interventional study suggests that online social media networks can be utilised to engage team members in interactive writing and can result in positive team support and learning outcomes. This demonstrates that digital technology can make team-based activities more feasible and acceptable with clinical populations. Travers (2011), note that while written diaries form a structured record of personal experiences over time, journal writing is more directed, linked to key objectives and underpinned by a reflective learning purpose. Journal writing involves taking time to reflect and write about experiences in terms of thoughts and feelings related to the purpose of the journal activity, as well as reading and reflecting on the reflective account afterwards noticing any changes in thoughts or emotions as a result (Tull, 2020). Journalling is a popular therapeutic tool used within post-traumatic therapy as a simple, low-cost, and accessible strategy for engaging patients in positive coping behaviour (Sloan et al., 2015). Experienced life trauma can result in positive psychological outcomes (posttraumatic growth) using effective interventions (Tull, 2020). Wu et al. (2019), in a systematic review of 26 studies, found that posttraumatic growth can reach up to 77.3% following experienced life challenging events. With the on-going traumatic healthcare working conditions because of the pandemic (Cole et al., 2020), journal writing can be an effective and feasible activity for teams to engage in due to its association with facilitating positive psychological outcomes in users who have and continue to face challenging events.

Reflective journals are popular low-intensity tools that can be feasibly implemented during fast paced, stressful working conditions within organisational practice (Travers, 2011). Newland et al. (2021), recruited five participants with Multiple Sclerosis to trial a symptoms-focused web-based journal involving reflective writing for 20 minutes per day for 4-

consecutive days over a 4-week period. Newland et al., concluded that this form of reflective intervention was feasible in practice as half of participants completed 100% and the remaining participants at least 50% of the total 16 online writing sessions, demonstrating that digital technology can improve the feasibility of integrating reflective journalling into daily routines by enhancing flexibility and accessibility. In line with this focus on feasibility in practice, by reducing required time-commitment and intensity, Copeland (2020), reported an 80%–90% compliance rate for nurses spending just five-minutes a day in reflective journal writing as well as having a positive effect on staff burnout reduction. Copeland noted that while nurses are willing and able to engage in reflective practice, this is not necessarily proactively actioned, however organisational leadership can encourage this within the workplace.

Reflective groups offer practitioners opportunities for learning that are not available through individual reflection, such as the potential to challenge practice, bring about change and encourage new skills and knowledge (Carter, 2013). Despite the positive effects associated with team reflection, creating the 'right' environment for high quality reflective learning to emerge can be challenging within the fast-paced clinical setting. Thorpe (2004), states that reflection requires trusting relationships for individuals to honestly share personal thoughts, feelings, and experiences, thus a team may need to engage in several team reflective sessions to arrive at a point where each member is comfortable with other team members before engaging in meaningful reflective practice. This process can be time-consuming but can provide an opportunity for teams to develop and improve inter-personal relationships, social support, and team cohesion (Reschke et al., 2021), which are all associated attributes of team resilience process emergent states (e.g., psychological safety, Edmondson, 1999; team potency, Woodley et al., 2019). To successfully emerge as resilient, teams need protected time to engage in meaningful reflection, which is only achievable through higher-organisational support (Nancarrow et al., 2015). Journal writing interventions

in clinical practice are noted to be typically easier to implement in practice due to reduced time-consumption, simplicity, and flexibility, however there are still several workplace barriers and challenges to overcome such as organisational culture, the physical environment and individual, team and organisational motivation to engage (University of Cambridge, 2021). Platzer et al. (1997), note however that despite the popularity of journaling methods to promote reflective practice, their primary impact occurs within the early stages of learning, whereas reflective group discussions are more strongly associated with the latter stages of reflective learning processes, thus having a greater impact in practice.

Schwartz Rounds are interactive multilevel discussions open to both clinical and non-clinical staff encouraging reflection on emotional and social challenges experienced within clinical practice (Point of Care Foundation, 2021). Typically occurring monthly, Schwartz Rounds follow a structured 60-minute format involving a group of three or four staff facilitators from a range of backgrounds sharing experiences that had a significant impact on them to initiate wider group-based reflective discussions among attendees (Flanagan et al., 2020). Clancy et al. (2020), recommend the use of Schwartz Rounds to drive positive cultural change needed within the NHS by focussing on compassion and support for both clinical and non-clinical staff. Through multiple interviews with facilitators, panellists, attendees, and non-attendees across 45 healthcare organisations, Maben et al. (2018), identified that the format of Schwartz Round reflective interventions works in clinical practice by promoting psychological safety and trust through confidential group interactive storytelling, role modelling, and reflective learning. Effective implementation creates a safe, reflective, and confidential supportive space, thus producing positive cultural change in clinical practice. These positive outcomes associated with Schwartz Rounds align with Alliger et al. (2015) recommendations for creating a 'right' team resilience culture. Engaging in such reflective practices within a supportive setting not only during experienced adversity but also in periods

of relative normality can create an environment for teams to successfully maintain or return to normal functioning thus facilitating the emergence of team resilience.

Dawson et al. (2021), explored the effectiveness of monthly 60-minute Schwartz Rounds over an eight month-period across 10 NHS organisations. Results based on 51 regular participants attending an average of 4 sessions, reported a significant decrease in psychological distress (compared to control as measured by General Health Questionnaire), however no significant effects were observed in measures of self-reflection. Dawson et al., suggested two reasons for this null effect, firstly that regular attendees reported higher baseline scores than non-attendees thus the impact of the Rounds were not as prominent, and secondly that qualified clinical staff were in higher attendance than non-clinical staff. As previously discussed, reflective learning is a core aspect of medical, nursing, and other professional practice (Atkins & Murphy, 1993), whereas non-clinical staff engagement with self-reflection is not required or as common in practice (Pearson, 2012). This demographic difference in intervention recruitment highlights the importance of collective reflective intervention activities being accessible and open to both clinical and non-clinical staff which form healthcare teams and deliver patient care. In terms of the feasibility for implementing Schwartz Rounds in practice, Dawson et al., noted that accessibility was the primary barrier to intervention uptake most likely due to rotating meeting locations across large NHS multi-site trusts. Maben et al. (2018), also state that Schwartz Rounds can present practical challenges in terms of attendance which has a negative impact on engagement due to the time required away from wards. Overall, to utilise a high-intensity intervention format such as this to encourage reflective learning within a challenging healthcare environment will likely limit intervention uptake. Despite the challenges to engaging healthcare staff in Schwartz Rounds, Dhinsa et al. (2021), recommend their use as a valued method for collective reflection and as a point of contact to share experiences resulting in positive outcomes for individual staff

members, teams, and organisations. Dhinsa et al., further note however that any form of multilevel support that encourages collective reflection on experienced social and emotional challenges with both clinical and non-clinical staff should be considered beneficial.

An important consideration is how to minimise the practical challenges and barriers associated with engaging and implementing multilevel interactive reflective practice within the clinical setting, but to also maximise the benefits of engaging in collective introspection and meaningful reflection. With reference to Litchfield (2008), who stated that a high quantity of ideas will produce a few high-quality ideas over time, Otte et al. (2018) suggest that this high quantity strategy will generate high quality reflective practice over time, thus the high frequency use of easy to implement reflective journals may result in high-quality reflective practice over time. This pragmatic approach aligns with the underlying focus of this thesis which aims to produce a practical method for promoting team resilience within the healthcare setting. Overall, an intervention promoting reflective learning content through a multilevel interactive format that is flexible and easy to implement in practice within the context of ongoing challenges, with minimal impact in terms of time-consumption, resources, disruption to daily routine and team functioning, is of key importance. No research to date has specifically explored the use of a team reflective journal to facilitate team resilience in the clinical context however, as highlighted in the literature discussed so far, both team reflective learning and journalling practices align with components of the proposed framework for promoting team resilience in the workplace. Therefore, team reflective journalling can be a novel, feasible, and effective strategy to promote team resilience within the healthcare setting to help tackle work-related stress, as it seeks to positive working relationships within multi-disciplinary teams.

7.2.3 Step 3 - 4: specifying the target behaviour & identifying required changes

The parameters within which the target behaviour of team reflective journalling needs to be improved in the healthcare setting are presented in Figure 11. An analysis of changes required to facilitate the desired behaviour was conducted with reference to the BCW COM-B model (user capability, opportunity & motivation that drive behaviour), and was further subdivided into specific domains (Theoretical Domains Framework, TDF) that encouraged the synthesis of team reflective journalling at multiple levels, to holistically identify how best to attain improved team reflective journalling within the healthcare setting (Figure 12).

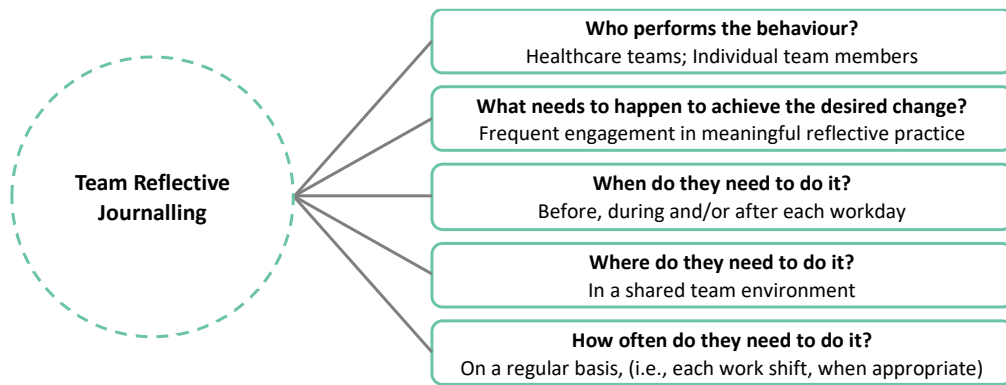


Figure 11: BCW step 3: specifying the target behaviour

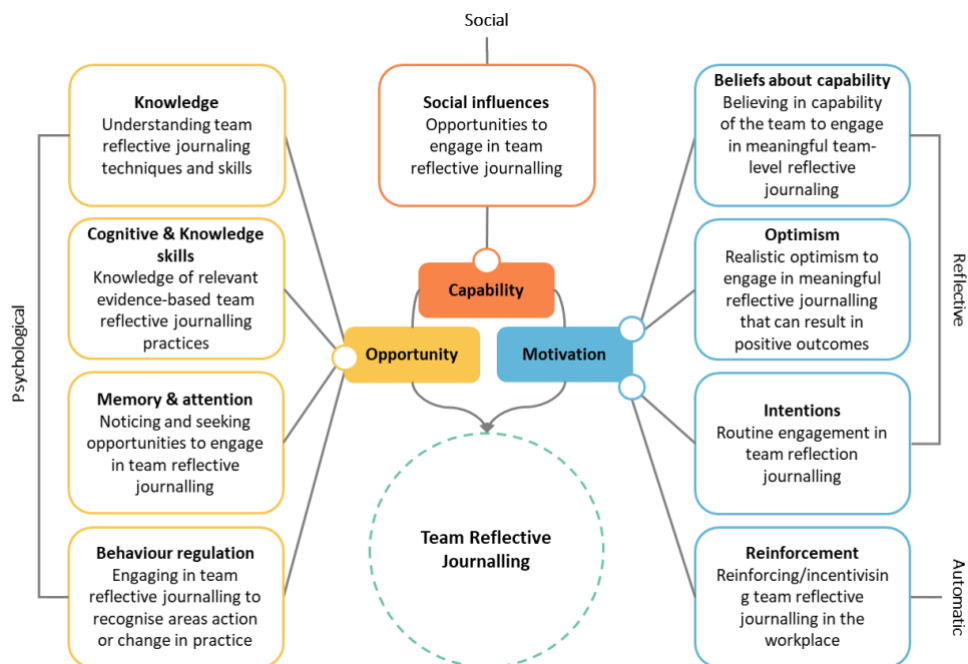


Figure 12: BCW step 4: COM-B & TDF mapping

7.3 Stage 2: identifying intervention options

7.3.1 Step 5 - 6: intervention functions & policy categories

To direct the intervention, the BCW puts forward nine functions that correspond with the COM-B model to aid the selection of appropriate intervention functionality. Seven policy categories are also highlighted by the BCW to inform the delivery of intervention strategies. Table 8 presents an analysis of intervention functions and policy categories (evaluated against APEASE criteria: affordability, practicability, effectiveness, acceptability, safety, equity), with those highlighted in green selected as appropriate strategic options for an intervention to promote team reflective learning behaviour in the clinical setting.

Table 8: BCW steps 5 & 6: evaluation of intervention functions & policy categories

		Intervention functions								
		Enablement	Education	Environmental	Modelling	Persuasion	Training	Incentivisation	Restriction	Coercion
Drivers of behaviour: categories										
Capability	<i>Psychological</i>	✓	✓	✓			✓			
Opportunity	<i>Social</i>	✓		✓	✓				✓	
Motivation	<i>Automatic</i>	✓	✓	✓	✓	✓		✓		✓
	<i>Reflective</i>	✓	✓		✓	✓		✓		✓
Policies										
	<i>Service provision</i>	✓	✓		✓	✓	✓	✓		✓
	<i>Guidelines</i>	✓	✓	✓		✓	✓		✓	
	<i>Communication</i>		✓		✓	✓		✓		✓
	<i>Environ. / Social</i>	✓		✓						
	<i>Fiscal measures</i>							✓		
	<i>Regulation</i>								✓	
	<i>Legislation</i>									

✓ = available option

Green = feasible; orange = somewhat feasible; red = unfeasible

7.4 Stage 3: identifying content & implementation options

7.4.1 Step 7 - 8: behaviour change techniques & mode of delivery

A review of Michie et al.'s (2014), taxonomy of 93 behavioural change techniques (BCT) identified as effective methods to encourage behavioural change, was conducted with reference to team reflective journaling in the clinical setting. To identify evidence-based intervention content, selected BCT were critically appraised in terms of relevance and feasibility considering the team resilience activities and reflective journaling practices discussed in-depth within chapter 2.3.3 and current chapter section 7.2, respectively. In-person reflective interventions are recognised to be more effective than virtual programmes and are more popular in practice within both individual and team-populations (Lines et al., 2021). However, considering the current real-world context of research site access restrictions, the option to deliver the intervention via online means was more viable. (see Appendix 11 for example use of each BCT informing intervention content and format).

7.5 An intervention to promote team resilience in the healthcare setting

Alongside the theoretical literature review and integration of phase one recommendations utilising the BCW, three consultation meetings took place between March and September 2021 specifically relating to intervention development. The researcher regularly met and corresponded with NHS stakeholders throughout the entire research project, however the purpose of these meetings was to ensure that the intervention being development would be feasible in practice and met expectations. Both NHS Trust stakeholders, a representative academic supervisor, and the researcher formed the consultation group.

An initial consultation meeting took place in March 2021 where the researcher shared phase one research findings and facilitated a discussion about how research findings relate to current experiences of healthcare team practice. The researcher recommended that the

intervention involve elements of reflective practice and it was agreed that this was an appropriate way forward with the intervention design. Following researcher engagement with the BCW intervention development framework, a second consultation meeting took place in June where the researcher facilitated a discussion based on the following key intervention design principles to promote team resilience within the healthcare setting:

- A low-intensity reflective journal requiring minimal user time and resources
- Regular user reflection on work-related experiences utilising Rolfe et al.'s (2001) model
- Ability for users to view own previous entries to encourage reflection over time
- Ability for users to view and comment on other user's journal entries to encourage positive social interaction and team reflective over time
- Ability for users to individually access the reflective journal anytime and from any location via computer or mobile phone with robust user privacy and confidentiality protocols to safeguard users
- Provision of detailed instructions and resources to create a self-guided journal not requiring a dedicated facilitator

The consultation group proactively discussed each intervention design principle in terms of feasibility, practicality, acceptability and safety. Following this discussion three further intervention design principles were put forward:

- Named journal entries to allow for logs to be connected and form distinctive individual stories and for members to become more familiar with others within the team
- Choice of journal input to suit individual preference (e.g., written/audio/video logs)
- Option to include tailored information and resources in response to recognised team-specific needs (e.g., encouraging social support outside of the working environment)

A final consultation meeting took place in September 2021 where the researcher presented an evidence-based intervention to promote team resilience within the healthcare setting. Existing popular social media platforms (e.g., Facebook, Twitter, and other popular websites) were considered to host the online team reflective journal, resulting in the selection of 'Padlet.com' due to its emphasis on collaborative user interactivity and creative functionality, that enabled all features of the team reflective journal to be operationalised. On this platform, the team reflective journal was accessible at any time or location via a computer or mobile phone using a secure weblink. To maximise privacy and manage access, users were required to create a free Padlet account to contribute to the journal, where their username was displayed above each entry. An unlimited number of journal entries could be posted, and all previous entries remained visible. Users were able to share self-reflections in a variety of forms including written, audio and, video messages to suit individual needs.

User instructions were permanently displayed at the top of the webpage, alongside signposts to study documents, reflective writing resources to aid journal writing, and detailed instructions on how to post online entries. All information was displayed under six interactive vertical column headings. In the first left column, weblinks to the participant study pack (including surveys) were presented, and in due course weblinks to post-intervention surveys were also displayed with written instructions. The second column presented written guidance to encourage participants to set aside at least five minutes of dedicated time on a regular basis to reflect on their own experiences as well as other journal entries. Participants were presented with diagrammatical description of how to use Rolfe et al.'s (2001) reflective model, as well as descriptions of resilient team and individual attributes to refer to in journal entries (adapted from the TR@W and R@W scales). Vertical column three – five presented the reflective questions as headings to facilitate individual and team responses: *What? So what?*

Now what? An example journal entry was presented under each heading to guide participant reflections. Finally, column six provided a space for users to ask their own questions or interact with other team members to encourage team members to share and learn more about each other outside of the work context. (see Appendix 12 for visual template).

During the final consultation meeting, the researcher facilitated active discussion around potential challenges and considerations for how to enhance intervention acceptability within the post-pandemic healthcare environment. Overall, NHS stakeholders were pleased with the current form of the intervention, particularly with regards to its easy-to-use format, flexibility and potential to engage diverse healthcare team members ranging in size, structure and expertise. As an outcome, the intervention was approved for use.

7.6 Chapter summary

Overall, this chapter has presented the development of an online team reflective journal intervention building on the evidence-based proposed framework for promoting team resilience in the workplace. The work presented so far comprehensively addresses the first key research aim of the thesis, to develop an evidence-based intervention to promote resilient practices in teams within the healthcare setting and is the first of its kind. To achieve the second research aim and to holistically address the central question of this thesis, the following chapter presents the feasibility testing of the online team reflective journal intervention in the healthcare setting.

CHAPTER EIGHT

Intervention Feasibility Testing with Healthcare Teams

8.1 Chapter overview

This chapter presents phase two of the overarching multiphase research project, a feasibility study with the following objective and two further specific sub-research questions:

Objective 5: Test intervention processes during on-going workplace challenges experienced by healthcare teams in the healthcare setting

Sub-question 1: Is the online team reflective journal feasible in the healthcare setting?

Sub-question 2: What improvements can be made to enhance the feasibility and potential success of the online team reflective journal in the healthcare setting?

To enhance flow and contextual understanding, a chronological narrative description of research procedures is presented followed by a discussion of the research findings.

8.2 Research engagement & participation

The researcher proactively engaged with key organisational stakeholders through regular research and intervention design consultation meetings, particularly seeking input and advice with regards to implementation and team engagement. In terms of implementation, although it was hoped that study activities could be delivered on-site and in-person, organisational stakeholders advised that the work would be limited to online access only due to the research commencing in late autumn 2021 when rising winter pressures and Covid-19 cases were expected. Considered discussion took place as to whether to postpone research

implementation procedures until spring 2022, however this was not a favourable option as there was no guarantee of easing workplace challenges at this future timepoint. In addition, organisational stakeholders recognised that staff teams could potentially benefit from the participation in the team resilience intervention as they worked through current and forthcoming challenges within the workplace, thus immediate study implementation was actioned. In terms of staff engagement, organisational stakeholders requested the recruitment of both a medical and surgical team to participate in the study based on their interest in team differences in terms of culture and structure. Non-probability purposive typical case sampling was used to identify and approach two natural ward teams at the research site as potential candidates to test the intervention. The specific teams were identified based on stakeholder experiential knowledge of both teams having a positive approach to research engagement and general willingness to learn and integrate positive team culture change and best practices.

In early November 2021, an initial virtual engagement meeting took place with Team Leaders (TL) from both ward teams with the researcher providing an overview of the research study. Initially both TL were hesitant to engage with the project, noting implementation timing (increasing winter-pressures & Covid-19 cases) and professional skill mix in terms of varying perceptions of reflective practice, as primary barriers to intervention uptake. However, the researcher highlighted the potential benefits of team reflective practice during times of adversity and emphasised that the purpose of the study was assess intervention feasibility during challenging situations, thus the current context would provide a unique environment in which to test the intervention. Through positive discussion TL were empowered to view the study as an opportunity to utilise and tailor the online team reflective journal to best suit individual team needs, consequently both TL recognised the benefits of participation and were keen to swiftly move forward with ward team engagement and intervention rollout.

Negotiated face-to-face engagement meetings with both ward teams took place the following week. The researcher briefed available team members on the study details and attendees were encouraged to provide initial thoughts, ask questions, and make suggestions about the intervention content and delivery in terms of feasibility, practicality, and acceptability. The consensus of ward teams was positive and demonstrated a willingness to participate. The researcher provided TL with a weblink to an online participant study pack to be shared with all ward team members to confirm participation and gain informed consent. Despite regular encouragement to TL, rapidly rising ward pressures resulted in study material dissemination to the wider ward teams being delayed. Approaching the Christmas period, the researcher consulted with organisational stakeholders and TL, leading to the decision to postpone the study until the new year when healthcare pressures were expected to decrease.

In January 2022, the researcher actively re-engaged with ward TL who suggested that ward team Nurse Educators (NE) would be able to provide useful support as the research study aligned with aspects of their role. Consultation with NE from both wards took place towards the end of January and following positive discussions, both were happy to facilitate team engagement and recruitment for live intervention testing over a four-week period. NE electronically disseminated a weblink to the online version of the participant study pack to team members, and if they agreed to participate, the researcher received an electronic copy of participant consent forms alongside their email address to manually add to the appropriate team reflective journal. The study pack contained the same participant information and informed consent forms, demographic survey and resilience surveys (TR@W & R@W) used in the phase one sub-research studies but were revised to contain current study-specific pre-intervention information for participants (Appendix 5, 6 & 8, respectively). An additional question requesting participants to provide an NHS email address to receive access to the

reflective journal was included in the demographics survey. Participants were also asked four baseline questions to explore team relationships, how well participating team members knew other team members, and whether participants recognised a need to improve resilient team attributes. These questions were informed by organisational stakeholder requests to enhance understanding of current team working relationships. All documents were created in Microsoft Word for the printing and distribution of hard copies. An electronic version was also replicated and hosted on Microsoft Forms (University of Worcester REP code: CBPS20210031-R; NHS No. 321/066/GHT/ED). Once completed, study demographic, TR@W, R@W, and evaluation (closed questions) survey raw data was collated in Microsoft Excel and analysed using SPSS 22 following the same data preparation procedures as outlined in chapter 6.2.3.

Despite positive engagement with ward team staff, NE and TL over several months, only four members enrolled. All participants were female, ranging across several demographic factors, including age (30 – 59), length of team membership from less than 1 year (n = 1), between 1 and 5 years (n = 1) to between 5 and 10 years (n = 2), and in terms of ward role: Nurse Educators (n = 2), Nursing Associate (n = 1) and HCA (n = 1). In terms of perceptions of team relationships, collectively participants rated team working relationships highly (92%), indicating good familiarity with other team members (79%) but not as well outside of the workplace (54%), thus participants indicated that they would like to know more about the other people in their team (71%). Only one response to the optional resilience survey was received, therefore no data analysis was conducted.

Over the four-week intervention testing period the researcher regularly engaged with NE seeking feedback about staff engagement, addressing any arising technical issues, and proactively encouraging intervention engagement. The researcher also sent regular reminder emails to participants to encourage journal contributions as well as reviewed posted journal

entries to ensure appropriateness. All intervention implementation activities were restricted to online access only. Overall, only one reflective entry was logged (to each of the three reflective questions), by two participants on either team on week two of the intervention testing period. Participant journal entries were not analysed due to the focus of this research study on intervention feasibility.

8.3 Evaluation measures & research findings

Post-intervention resilience surveys (TR@W & R@W) and an evaluation survey (Appendix 13), consisting of the same four pre-intervention team relationship questions, an additional eight closed questions and three open-ended questions, (based on Orsmond & Cohen, 2015, guiding questions for feasibility studies), were electronically disseminated to all participants to evaluate intervention processes. Completion of these measures was encouraged however no responses were received, thus no comparison with pre-intervention measures was possible to evaluate intervention feasibility using quantitative measures.

In terms of qualitative research, all NHS staff from ward team participants to organisational stakeholders, were invited to participate in follow-up intervention evaluation interviews hosted and recorded on Microsoft Teams. A follow-up interview schedule was developed that included five interview questions divided into two sections (Appendix 14). The first section explored study recruitment and engagement, and the second section presented intervention-specific questions relating to content, design, data collection procedures, and the potential success of the intervention (tiered structural design of the interview questions based on Orsmond & Cohen's, 2015, guiding questions for evaluating feasibility studies). Nurse Educators (NE) from each team attended individual follow-up interviews stating that they had previously discussed the intervention with ward members who were unable to attend in-person. One organisational stakeholder (SM) involved throughout the intervention

development process was also interviewed to add to the overall evaluation of the online team reflective journal. Interview data was analysed using the same deductive approach to thematic analysis for the same rationale comprehensively outlined in chapter 5.2.3 for phase 1 staff interviews. Following analysis, several themes grouped under three main themes emerged in relation to intervention feasibility (Figure 13).

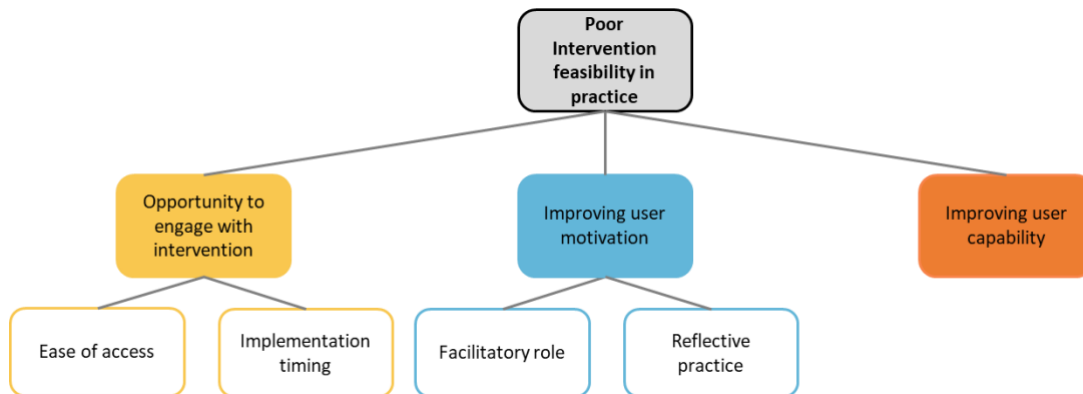


Figure 13: Intervention evaluation thematic diagram

Theme one: opportunity to engage with intervention. Sub-theme one: ease of access. The simplicity of the reflective journal was positively viewed:

“It was quite quick for me to log in and put the bits in there, it didn't take me long at all”

[NE 1]

“It allowed you to go into more depth if you wanted too, I think it's how you use it isn't it? And I mean there was an example on there and which was quite in depth so that was useful”

[NE 1]

“Definitely, yeah, easy to follow.” [NE 1]

The flexibility of the intervention provided users with an opportunity to engage in reflective journaling tailored to suit individual preference:

“My idea would be to do my shift go home and then just quickly write, because quite often people will go home and offload to whoever they've got at home or just chat about their shift and or text somebody, replacing that with a quick reflection might help sometimes” [NE 1]

“I found it easier to do it outside of work, purely because I don't always have time to kind of process my thoughts with it and actually reflectively take time to look at it, whereas some people find it easier to do it as and when they're there so it's a bit personal preference” [NE 1]

“Once you're used to it as well and especially because I downloaded the app I think that makes it easier than trying to get onto a computer for it because we fight over them at work anyway” [NE 2]

“In this present climate face to face would have been very difficult, because of the pressures and the time that people would have had to give. I don't think you'd have got much buy in, everyone's on their phone, whether they're traveling on the bus between the hospitals or can't sleep whatever, they've got access to it. So I think the accessibility for the information you were wanting was far easier, far better online. I think online was the right way to do it.” [SM 1]

Sub-theme two: implementation timing. Major workplace challenges experienced by healthcare teams negatively impacted intervention engagement:

“When you're so busy and caught up in things you don't necessarily think about that until much after, and to be honest the last week or so, the last week especially at work has been

awful, most of our senior staff have been off sick so it's just been yeah it's been stressful and there wouldn't have been even five minutes there, we were chasing our tails the whole time, so I think that's when it would potentially be needed, but not necessarily be used because there isn't the time there.” [NE 1]

“Two other girls really enjoyed looking at it but got a bit caught up with their work so they couldn't really join up” [NE 2]

“I think if we had been in a better place and a better kind of, we've just gone through moves and things like that, if there wasn't as much going on I think people would have sort of engaged a bit better and I I've been thinking about it as well because if most people were quite burnt out so they weren't particularly willing to do anything in their own time which unless they saw it as something that would benefit them, it wasn't something they were engaged, gonna engage with, if it makes sense.” [NE 2]

“The wards were incredibly pressurised at the time, and this wasn't sadly deemed a priority for those that needed to drive it with the ward teams. So I think that that was a major obstacle, and of course then the pandemic.” [SM 1]

Theme two: improving user motivation. Sub-theme three: facilitatory role. Having a facilitator in person can help to encourage participation and general reflective practice:

“If somebody from like yourself and for example had come in and said oh you know if we looked at this oh yeah and you know and I think people have so much in their minds that sometimes they do just need a little bit of prompting and kind of encouragement”. [NE 1]

“I think if I went out into the ward and said right all of the patients are asleep for the next 5 minutes and I know that they will not wake up or ring bells, we could all sit at computers and do it right now they probably would and they'll be fine, it's just having that facilitation of actually doing that or saying right here's an iPad fill that out and it's nice and easy for them, I think ease the easier the better it's gonna help” [NE 1]

“I juggle a few things but one of the practice development team so the two jobs I work for one of them they roll out CPD depending on what corporate decide and a couple of months ago that was based on reflective practice and re-validation, and I think the amount of people thinking about reflection it got a lot better then but then when there was somebody not there to remind them about doing it and what benefits they're getting from it, the numbers kind of dropped back down again. So I think it definitely would be helpful to have somebody who would kind of remind people along the way.” [NE 2]

“Yeah, definitely needs more encouragement I think it's very easy for ward staff especially nurses to get into going to work, doing their job and going home especially with the stresses that they have. I think it would benefit a lot of them to become more reflective, me too, honestly, with the new guys that we've got, it's probably got about four or five of them, and during their training it is hammered into them that that's what they should be doing and that's what you know that everything is based on. But they're still quite, they're not the biggest numbers out there, I mean the biggest numbers are the ones that have been here forever, and yeah so I think encouragement for that would be really helpful.” [NE 2]

“I think that we could have involved the practice development team sooner, because I think that they it seems have driven this far better than the ward managers. Erm, so I think that those would probably be the main improvements.” [SM 1]

Sub-theme four: engagement in reflective practice. Team demographic differences and misconceptions for the purpose of reflection in practice impacted intervention engagement:

“It seems like the people that are newer qualified and there are a lot more well practiced at reflective anything really were a lot more open to it.” [NE 2]

“The newer guys who are quite happy to do that and are quite used to reflecting as well whereas I think the people that have qualified 20 odd years ago, that isn't something that's basic practice to them and now that it's even part of our revalidation I think generally they only do it once a year. I'm trying to encourage them to do it regularly because it's good for them, it's harder than you think it would be.” [NE 2]

“Nurses breathe reflective practice and it's very much part of their revalidation process as well, so so far as the nursing staff are concerned this sort of reflection it is embedded in them. I can't speak for how the therapists, the AHP's, and the and the GP's” [SM 1]

“The minute you talk about re-validation to nurses there like oh yeah I'll do that if that will help with my revalidation and it's like no you should want to do it anyway” [NE 1]

“Some staff just wouldn't [participate] and I think it would come down to how they feel about reflection” [NE 1]

“I think quite often people want to moan or talk about something bad that's happened but they want answers and they want people to problem solve it for them and give them give them advice and reflection doesn't really, because that's one of the barriers to this clinical

supervision reflection that I want to do is that it's all about facilitating them to have to grow with resilience and kind of problem solve for themselves which quite often people are like 'look, I don't want to know how to manage this better I want to, I want you to tell me what we can do and I want you to make it better' and a lot of the staff especially the healthcare assistants I think having that mindset of 'we're just gonna moan at you and we want you to solve it because you're senior' and I don't know if they would necessarily find the reflection for them that useful because I think nurses understand a bit more why and it's more about anything that we might have done wrong or mistakes that might have happened or things we would do differently but I don't know how much of that would happen in their day-to-day" [NE 1]

"I remember I think that one of our senior sisters was with us and was very concerned about, you know, it would just become a bitching match and that she would worry that it wouldn't become something productive." [NE 2]

More team participation can encourage individual engagement and contributions:

"I think if somebody had commented on my thing that could have made a narrative from there and we could have had a bit of a back and forth conversation about things that would have been good as kind of what I was hoping would happen, but yeah I think if other people have put things on there it would have been helpful for, especially in my role for me to see what struggles people are having at work erm kind of facilitate on like further support if necessary as well so that's it's quite good for that erm. and then to see teamwork because it would have been really nice if the team could have helped each other and kind of discussed it with each other." [NE 1]

Training to improve understanding of reflective practice in the workplace would improve motivation to engage with the reflective journal:

“The way people perceive reflection in general maybe what we're trying to change. I think people often think of it as a negative thing or something that has to be done rather than a tool to facilitate them.” [NE 1]

“It might be that we to do a bit more education on actually why it might be beneficial to them.” [NE 1]

“One of the girls did mention that she would see how it could allow people to see experiences differently and how they could encourage problem solving, which I thought would be quite good because it would give them people’s views and their ways of dealing with it that they might not have thought about doing themselves which I thought was quite good for them to see that potential out of something like this.” [NE 2]

Theme three: improving user capability. Differing ability and interest in digital technology was a barrier to intervention uptake:

“Some people aren't very technical, and they don't even want to, they don't even look at their emails at work, erm let alone, and they struggled.” [NE 1]

“I know that one tried to log in but she just couldn't get she I think she tried to get past the password bit and then kind of gave up... unfortunately.” [NE 1]

“Some of the team that we have are very anti-computers which we've experienced with the EPR systems coming in, there's a lot of fight back against it because it's, it's an extra thing on the computers that they don't want to be doing.” [NE 2]

A combination of both face-to-face and digital resources could further improve user capability, thus enhance feasibility in practice:

“If it was in a notebook that and it was at work so people can write in it at the time that that could possibly work.” [NE 1]

“I think if it was like an app and ongoing I would have used it just maybe every few days just saying you haven't reflected in the last three days is there anything you're on your mind or just like a little pop up saying anything you want to talk about might have been, I might have thought actually I'll go on there and have a look and see how everyone, you know and I think sometimes you don't always think about things unless there popped into your brain.” [NE 1]

“if we had like an iPad on the wall in the staff room and it said on there ‘please pick me up and reflect on your break’ or something like that they might be more likely to do that because if it was already set up and they just had to put their name in something like might be just a way for them to just quickly reflect on something at the end of their break, I think it quite often comes down to if it's really easy to do people are much more likely to do it” [NE 1]

In addition to resources, dedicated time and space is important:

“Would be better inside of work provided you could do it later in the day and give them actual space to do it.” [NE 2]

“Before somebody hands over whether there’s a period of time that you could allow them to sit away from their work and do this for five minutes, 10 minutes, but it’s whether that would be considered you know a useful time from the seniors above me.” [NE 2]

“Yeah, I definitely think so as long as there’s time given to manage it and you know the appreciation of how important it is to do that it’s definitely something that could get built into a daily process.” [NE 2]

8.4 Discussion

Drawing on the research outcomes, the current section presents a holistic feasibility assessment of the online team reflective journal during on-going workplace challenges experienced by multi-disciplinary healthcare teams. This section adopts Orsmond and Cohen (2015), five objectives for feasibility studies as sub-section headers and is presented in a similar narrative style to enhance the comprehensiveness of this review. Direct reference is drawn to the COM-B model that is at the core of the intervention development, to inform several recommendations and strategies to continue the development of the online team reflective journal as an evidence-based intervention to promote healthcare team resilience.

8.4.1 Evaluation of intervention recruitment

The recruitment of multi-disciplinary ward teams was the most relevant sample population to recruit to feasibility test the online team reflective journal in practice as this is the target audience and intended end-user as directed by organisational stakeholders. Although intervention feasibility could have been assessed through non-research expert review (Cocker et al., 2015), the methodological decision to recruit a live ward team to test the intervention in real-world practice aimed to enhance the validity of interventional processes (Merlo et al.,

2013). Adding to this, to test intervention feasibility in terms of relevance and transferability, two ward teams, one medical and one surgical, were approached as both the literature base and organisational stakeholder observations highlighted differences in working relationships between the two specialities. Although no differences were observed between these teams in this small-scale study, recruitment and engagement was challenging as reflected by poor intervention uptake and highlighted in the follow-up interview.

Overall, intervention implementation timing during on-going workplace pressures was the primary recruitment challenge. Required research approvals were granted by November 2021. During initial engagement meetings with organisational stakeholders and team leaders it was recognised that the implementation of the intervention over subsequent months would be challenging due to expected rises in Covid-19 and winter-related pressures. The possibility to delay the research study until Spring 2022 was discussed, however this was not a favourable option as there was no guarantee that healthcare pressures would be in decline and such a delay would further constrain the overall research programme. This research context ultimately informed the methodological decision to implement the research study during a period of on-going major to severe workplace challenges.

Detailing the importance of implementation timing decision-making in resilience interventional research, Chmitorza et al. (2018), recommend three forms of study designs for resilience intervention studies: either before, during or after adversity exposure. Chmitorza et al., suggest that resilience interventions implemented before experienced adversity support the preparation, reduction, and even prevention of the negative impact on functioning, whereas interventions implemented during chronic challenges attempt to manage perceived impact, and those implemented after adversity exposure aim to treat subsequent dysfunction. These three forms of study design align with Alligiers et al. (2015), 40 resilient team behaviours

that either occur before adversity exposure to minimise, during exposure to manage, or after exposure to mend team functioning. Although in theory each of these study designs have the potential to provide an effective assessment of resilience change, the current study demonstrates that the feasibility of intervention implementation differs in reality. Implementation timing is an important consideration to test both intervention feasibility and effectiveness, thus as an alternative, study recruitment and engagement would be more feasible either before or after teams experienced workplace challenges to enable future research to overcome recognised recruitment issues. Although more feasible in practice this would however detract from the purpose and necessity of the intervention to be able to promote team resilient practices within healthcare teams during varied experienced workplace pressures. Balancing research practicality and relevance, intervention implementation before or during minor workplace challenges is a desirable compromise.

Stoverink et al.'s (2020), theoretical model of team resilience maps Alliger et al. (2015), 40 minimising (pre-adverse event), managing (during adverse event) and mending (post-adverse event) resilient team behaviours onto Marks et al. (2001), transition and action phases of teamwork. Reflecting on this framework, future studies seeking to implement the online team reflective journal would benefit from initially implementing the intervention during transition phases when teams experience relatively normal or only minor workplace challenges. Implementation during this time of relative normality will allow team recruitment, engagement and familiarisation with intervention content and format to be effectively embedded within team practice. Subsequently when major and severe workplace challenges arise, teams can implement the online team reflective journal in a time appropriate manner and tailor it to meet specific team needs (e.g., frequency of journal entries and duration of use), thus forming the action phase. Following the reduction in perceived adversity to relatively normal levels, this transition phase provides time for teams to review the success of

the intervention in terms of both feasibility and effectiveness. Overall, the experienced intervention recruitment challenges primarily relate to user opportunity, therefore the recommendations put forward can be operationalised within this domain of the intervention development framework. Although this three-stage intervention implementation strategy will require dedicated time and resources to effectively embed in practice, it has the potential to significantly improve future feasibility and effectiveness testing of the online team reflective journal to promote positive teams working relationships in the healthcare setting during real-world on-going workplace challenges, to help tackle work-related stress.

8.4.2 Evaluation of intervention data collection procedures & measures

Data collection procedures were specifically intended to be flexibly implemented during on-going workplace challenges using online surveys and either virtual or face-to-face follow-up team interview options available to meet team needs. Each of these data collection procedures were evaluated during research phase one and were deemed to be robust and appropriate processes. Participating teams were encouraged during face-to-face briefings, electronic participant information documents and via liaison with ward team leaders and nurse educators, to complete study measures. The real-world workplace challenges limited the opportunity to directly engage with teams, thus restricting data collection to online methods only. Despite this, the follow-up interview collected meaningful insights to assess intervention feasibility. O’Cathain et al. (2015), suggest that a sample of between 5-20 is adequate for small-scale feasibility studies, and Faulkner (2003), adds that the use of an average sample of 5 participants can identify between 55% - 99% of intervention issue as sample size is dependent on the scale of feasibility study. Therefore, although the recruitment of three participants is not ideal, tangible insight into intervention processes have been gained, which are relevant to the purpose of the current study.

In addition to evaluation measures, the use of TR@W and R@W assessment tools were deemed to be suitable and relevant measures of team resilience effectiveness based on previous use during phase one sub-research study three. These were included in the current study to assess measurement sensitivity to the effects of the intervention. An anticipated potentially limiting factor to participant response rate was time commitment, with the average time taken for participants to complete these measures during the previous sub-research study being 11 minutes (chapter 6.2.2). During the early stages of intervention recruitment, the time and effort required by participants to participate in research activities (response burden) was identified as a risk to study and intervention engagement due to rising workplace pressures. Although the intervention was designed and promoted as a low-intensity activity requiring minimal time commitment of approximately five-minutes to maximise participant acceptability and uptake, the length of time required to complete the preceding intervention surveys was double this duration. This may have been a potential barrier to participation in the actual intervention. This risk was identified by the research team in the initial stages of the intervention development process; thus, completion of resilience measures was made optional to minimise the response burden by seeking not to detract or disengage participants from contributing the reflective journal.

As expected, increasing workplace challenges and a lack of time to engage in the intervention were explicitly highlighted as primary challenges by participants with specific attention drawn to the length of time to complete resilience survey as being a limiting factor. Although the decision to prioritise intervention engagement by making the resilience survey optional directly detracted from resilience survey completion, upon reflection this was a necessary compromise to maximise potential intervention uptake and engagement. Based on study evaluation outcomes, shorter and less demanding assessment tools are required to enhance feasibility and uptake in practice during on-going workplace challenges. As previous

discussed, several short-item team resilience assessment tools have been developed and implemented in occupational practice revealing positive outcomes at face value (chapter 2.4; West et al., 2009; Luthans & Youssef., 2004). These surveys however lack evidence-based grounding in accepted team resilience theory, both in relation to core components and reflecting the complex multilevel nature of the concept. The TR@W and R@W measures were however specifically selected to avoid these limitations and to enhance research construct validity but do increase response burden in terms of time commitment and cognitive load. Rolstand and Ryden (2011), in a meta-analytical review of response burden and questionnaire length found that longer questionnaires were associated with lower response rates, however the authors caution that research measure decision-making should be based on content veracity rather than length so not to compromise and risk the validity of research outcomes. In this light, the use of both the TR@W and R@W assessments are still recommended as robust evidence-based measures of team resilience as a multilevel construct, however reducing response burden in terms of time commitment to complete intervention measures during on-going workplace challenges will enhance uptake.

The development of valid and reliable shortened versions of existing surveys is common within the literature. Kost and de Rosa (2018), investigating the impact of survey length on outcome validity and reliability adapted the 72-item research participant perception survey (RPPS-L) to create short 25-item (RPPS-S) and ultra-short 13-item (RPPS-U) versions. Based on these changes, a decrease in completion time was observed (10-minutes to 7 & 2-minutes, respectively), indicating a reduction response burden, moreover response rates increased (51%, 63% & 64%, respectively) as well as completion rates (37%, 54% & 63%, respectively). Although reliability testing reported lower Cronbach alpha levels ($\alpha = .87, .84$ & $.81$, respectively), a good level of internal consistency was maintained, indicating that it is possible to adapt pre-existing longer surveys to be shorter, more acceptable, but still reliable

assessment tools. Creating shorter versions of the TR@W and R@W surveys through robust statistical procedures to align with the time commitment required by the reflective journal intervention is recommended to enhance user opportunity and motivation to engage in study data collection measures implemented during on-going workplace challenges. Overall, for the scope of this feasibility study, intervention data collection procedures were appropriate due to the flexibility required to implement on-site or via online access. Moving forward a similar proactive approach is required to enhance response rates through tailoring measures to suit participant population needs within the research context.

8.4.3 Evaluation of intervention suitability and relevance

Intervention suitability. Participant feedback positively highlighted the suitability of the low-intensity and easily accessible format of the virtual intervention to meet user needs. The flexibility of the reflective journal to be utilised either inside or outside of the physical workplace to suit individual preference and to incorporate large multidisciplinary teams was also positively reviewed. However, a key issue limiting intervention engagement was the chosen mode of delivery. For this current small-scale feasibility study utilising existing technology to host the team reflective journal was advantageous to minimise development time and costs, which was an appropriate approach due to the risks associated with major investment in an untested intervention. Several popular social media platforms were considered during the intervention development process, resulting in the selection of 'Padlet.com' due to its emphasis on collaborative user interactivity and creative functionality, which are core aspects of the team reflective journal. Recognising that participants may not be familiar with this platform, information was provided through briefing meetings and detailed instructions for how to access and interact on the site.

Despite these actions, participant feedback highlighted issues relating to the capability and functionality of the host platform, consequently negatively impacting intervention access and usage. For example, creating a user account was viewed as a complicated process that hindered user engagement. In addition to this unless participants specifically downloaded the Padlet mobile application, users would be unaware of when new journal entries had been logged on the reflective journal. Although participants were encouraged to proactively visit the team reflective journal on a regular basis, receiving a notification as to when new content had been uploaded will further expose participants to the reflective journal, however this may not necessarily increase active participation (Morrison et al., 2017). This highlights the importance of primary engagement and reflective practice training.

Overall, the incorporation of digital technology to deliver the intervention was vital to the survival of this research study in real-world practice due to experienced on-site access restrictions. The flexible format and online delivery of intervention enabled some participation, whereas if only face-to-face processes were in place, then this would have been further diminished. Moving forward, the use of a dedicated digital resource to host the intervention is recommended as this will positively enhance intervention delivery as well as content and format. Investing in a mobile application (based on the same design of the current intervention alongside other proposed recommendations) would be worthwhile for future large-scale research studies to enhance intervention management by simplifying intervention procedures as well as and strengthening data collection and management protocols.

Intervention relevance. Participant feedback highlighted the relevance of reflective learning at both the team and individual level as well as the simple and easy to understand reflective questions (Rolfe et al., 2001), resources and examples. Feedback however also recognised that significant work is required to encourage reflective practice in general within

the workplace as user motivation and capability to engage in the intervention was observed to vary based on team demographics such as profession. For example, clinical practitioners were reported as being more motivated and capable to engage in reflection compared to non-clinical staff. Atkins and Murphy (1993), noted that reflective learning is a core aspect of medical, nursing, and other professionally qualified training and although such practitioners are willing to engage in individual reflective journaling within the workplace it can be challenging to make this an intentional part of workplace culture (Copeland, 2020). Pearson (2012), however highlighted that for non-clinical staff, engaging in self-reflection is not required or as common within the workplace, therefore improving reflective skills within this large healthcare demographic is needed. Recognising the importance of collective and inclusive team reflection to enhance resilient team processes, this rationale informed the decision-making process to create an intervention that was accessible and open to both clinical and non-clinical staff which form healthcare teams and deliver patient care.

Upon reflection, it is recognised that more is required to motivate and enhance non-clinical staff reflective capability. In terms of improving user motivation, Copeland (2020), suggests that organisations and teams can encourage reflective practice by making this an expectation of work. Participant feedback echoed this position by suggesting that mandatory reflection within the workplace for all team members would enhance intervention uptake and ultimately be beneficial for the ward team. Such action is justifiable as the intervention development framework endorses various techniques to drive behavioural change. In this instance however the decision to make intervention participation non-optional was not considered to be acceptable for healthcare teams due to need for a low-intensity and flexible intervention format. Moving forward other methods to motivate users engage reflective practice are required to balance intervention acceptability against intervention uptake and engagement.

In terms of user capability, incorporating training and education are considered to be relevant intervention functions, however high-intensity workshops were evaluated not to be practical to implement during on-going workplace challenges, thus other relevant intervention functions such as persuasion, enablement and behavioural modelling were emphasised due to feasible in practice (see chapter 7.3). Based on participant feedback preliminary training and educational workshops are highlighted as an advantageous possible solution to enhance both multi-professional user capability and motivation to engage in meaningful team and individual reflective practice in the workplace. Revaluating this aspect of the intervention is important to improve feasibility in terms of user acceptability, engagement, and uptake as well as potential success to promote team resilience. Previously discussed research studies have engaged healthcare teams in reflective training sessions and workshops reporting positive engagement in workplace reflective practice (Nancarrow et al., 2015; Gray, 2016; Colgan et al., 2021), therefore opportunity to develop similar training packages that are feasible in practice are available. Implementing reflective training during the first of the proposed three-phase intervention implementation strategy previously recommended, has the potential to motivate healthcare staff to further engage in reflective practice through the opportunity presented by the intervention. This will enhance the overall relevance and suitability of the team reflective journal. Utilising face-to-face, virtual training, or even a combination of both is important to consider in terms of individual team needs and the research context to maximise feasibility in terms of uptake and transferability across diverse healthcare team.

8.4.4 Evaluation of intervention management and resources

Collectively, adequate knowledge and expertise with regards to the topic area and research setting was held within the research team and, alongside access to adequate technology, an evidence-based online intervention to promote team resilience within the

healthcare setting during on-going workplace challenges was implemented. The intervention was designed to be flexible to adjust to both expected hard (restricted on-site access) and soft barriers (workplace culture; Bick et al, 2021), however further considerations for how to effectively manage the intervention during more severely challenging real-world challenges, occurred with responsive and appropriate adjustments made in real-time (e.g., adapted engagement and recruitment procedures). This adaptive process demonstrated sound intervention management, with further modifications to intervention recruitment and engagement procedures already recommended to mitigate contextual risks.

Despite participating teams initially highlighting the relevance and appeal of the novel online team reflective journal, proactive motivation to engage in the team reflective journal was a major challenge. Previous discussions regarding the use of a facilitator within the intervention design highlighted that although using a facilitatory role to deliver reflective interventions can improve uptake, it also suggests that the inclusion can negatively impact the feasibility of implementing workplace team interventions in practice due to the additional resources required (Lines et al., 2021). In addition to this, within the research context of social restrictions, the need to minimise the risk of Covid-19 transmission and minimise burden on ward teams, involving a dedicated on-site facilitator (i.e., the researcher) was not viewed as a favourable option. Recognising the impact that this would have on intervention engagement and compliance, detailed instructions and guidance were provided within the journal (Allen et al., 2018). In addition to this, proactive engagement by the researcher with ward team leaders and team members was made to engage and encourage participation, however managing the progress of the intervention from a distance was challenging. Following initial feedback from ward team leaders, engaging with ward team nurse educators to encourage interview participation on-site enabled intervention survival.

From a practical point of view, the low-intensity, independent design of the intervention is still recommended due to the use of minimal resources, physical space, cost, and time. This enhances acceptability by participants and organisational stakeholders as well as its adaptability to real-world challenges, as tested during this study. Multilevel engagement and an inclusive approach is also still recommended to support engagement with participating healthcare teams. In addition to this, an on-site facilitatory role, (in this instance nurse educators) to support engagement within the team and to also make key decisions as to how and when is appropriate for teams to engage in intervention processes in response to perceived team adversity is also recommended (within the recommended three-stage implementation strategy previous discussed). Participant feedback positively highlighted the concept of the online team reflective journal as a useful tool to implement in parallel with formal team processes such as supervisions, on-boarding, and mentoring. As the intervention encourages regular individually driven workplace reflections, this enhances pre-existing team communication, information gathering systems and well as situational awareness, thus providing a platform that enables teams to identify and share experienced challenges so to implement an appropriate response (Senturk, 2018; Hartwig et al., 2020). Enhancing these systems through creating a shared recorded log of journal entries also enables users to identify common themes thus team leaders or those within the intervention facilitatory role can flexibly tailor the intervention to suit team needs. Salas et al. (2008), recommends that team interventions should include facilitators to guide sessions, share knowledge, best practice, and ensure focussed and purposeful discussions. A balanced approach to ensure that the intervention remains flexible through a low commitment and individually driven format but also manageable through the addition of a facilitatory role is recommended. In combination this will positively enhance intervention feasibility in terms of relevance, engagement, acceptability, and uptake as well as minimise experienced barriers in practice.

8.4.5 Evaluation of intervention potential for success

Orsmond and Cohn (2015), highlight that following intervention feasibility testing, strategies to address experienced challenges and to revise elements of the intervention need to be identified, followed by the implementation of pilot studies to evaluate intervention effectiveness. Recognising the strengths but also the limitations of the intervention in its current form, several specific recommendations, and strategies to enhance the feasibility and potential success of the online team reflective journal have been presented in this current section with reference to the COM-B model of the intervention development framework. Overall, the issues primarily related to user opportunity due to the challenging research context, but also improvement in terms of user capability and motivation were highlighted. Therefore, to robustly address these issues the intervention development framework is again recommended for use to refine the online team reflective journal to produce the desired behavioural outcome of enhancing team resilience in the healthcare setting.

Moving forward, following these revisions, further research is recommended to re-evaluate the short-term goal of intervention feasibility in the healthcare setting. As readiness for positive change to team working relationships is clearly recognised by key organisational stakeholders as well at the team and individual level, improving aspects of the intervention relating to user opportunity will enhance engagement, uptake, and potential for behavioural change. Adding to this, further research with participating healthcare teams will build research buy-in, as stakeholders and participants can see that their views are valued and have been listened too, thus helping to minimise barriers to research engagement, and further enhance intervention feasibility in practice. If subsequent intervention feasibility testing is successful, a larger study incorporating a preliminary internal pilot to firstly assess long-term intervention feasibility as well as effectiveness, secondly understand change process and, thirdly, assess cost-effectiveness, would be an appropriate and justifiable approach to further

this research (O’Cathain et al., 2019). Incorporating an internal pilot within a large-scale main study will balance cost-efficiency against research robustness by reducing resources and time wastage due to the amendments already being made to the research based on the recommended changes to the procedures and processes put forward. These time-management advantages are particularly pertinent to real-world intervention testing as extraneous variables can rapidly and severely threaten research procedures, as experienced in this current study.

Real-world interventional research is challenging even more so within the clinical context (Mulhall, 2002). Although intervention testing within a controlled environment would most likely have produced efficacious results, research outcomes would have low ecological validity, fail to evaluate intervention feasibility in practice, and would not provide holistically useful or valid practical insights for organisational stakeholders trying to promote multi-disciplinary team working relationships to help tackle work-related stress. The fact that this low-intensity intervention experienced various challenges within the clinical workplace during on-going workplace challenges, does however provide practical insights and meaningful research outcomes attuned to the real-world organisational setting of this specific NHS Trust. This provides future scope and potential for success within this research context.

8.5 Chapter summary

This chapter has presented an in-depth review of the online team reflective journal, that on one hand highlights the recognised need and relevance of this intervention to encourage team relationships to help tackle work-related stress. Overall, however, findings indicate that the intervention was not feasible in practice due to implementation timing challenges, resulting in poor intervention engagement and uptake. Despite this, insightful and actionable outcomes have been identified by key on-site facilitators to enhance intervention feasibility

with multi-disciplinary healthcare teams, therefore, the aim of this sub-research study to evaluate the intervention in practice has been achieved. This chapter has presented the fourth sub-research study, thus concluding the overarching multiphase research project. The next and concluding chapter of this thesis draws together all research components to address the central thesis research question within the specific research context of promoting positive team working relationships to help tackle work-related stress in the healthcare setting.

CHAPTER NINE

General Discussion

9.1 Chapter overview

This final chapter concludes the thesis by discussing and reflecting on key findings in terms of implications in theory and practice, as well as the direction of future research.

9.2 Research context & findings

This thesis is set in the context of rising trends of work-related stress experienced within the specific research NHS Trust and at a national level. Organisational stakeholders identified the promotion of positive relationships within multi-disciplinary ward teams as a research priority to help tackle this issue. Within this context, team resilience was identified as the principal theoretical framework to underpin the approach of this thesis, as promoting resilient team practices can reduce the impact of work pressures on wellbeing through positive team working relationships, thereby maximising team functioning during experienced adversity (chapter 1). Review of team resilience literature highlights however that there is limited knowledge of team resilience within healthcare practice. Therefore, the need to enhance understanding for how team resilience can be practically improved within the healthcare workplace to mediate the relationship between increasing job demands and work-related stress was essential. To this end, a framework to promote team resilience within the workplace was proposed and, within the research context, this thesis posed the following question: *can a feasible evidence-based intervention be developed to promote team resilience within healthcare teams?* (chapter 2).

To address this central question a two-phase mixed-methods research study was designed, firstly aiming to *develop an evidence-based intervention to promote resilient practices in*

healthcare teams, and, secondly, to *evaluate intervention feasibility in practice* (chapter 3). To achieve the first aim, a systematic review, staff interviews and staff surveys were implemented and produced several recommendations, which were transformed into an evidence-based online team reflective journal intervention to promote healthcare team resilience in the healthcare setting (chapters 4 - 7). Following this, feasibility testing of the intervention during on-going workplace challenges highlighted several strengths and limitations, alongside solution-focussed proposals to further enhance intervention feasibility, as well as the potential to promote team resilience in the healthcare setting (chapter 8). Overall, the combination of all research methods addresses the central research question posed by this thesis. Findings demonstrate that although it is possible to develop an evidence-based intervention with the potential to improve team resilience in the healthcare setting, timing is key, and in this case, implementation was not feasible in practice.

9.3 Implications in theory & practice

From a theoretical perspective, the starting point of this thesis was the Job-Demand-Control-Support model of psychological stress (Johnson & Hall, 1988), proposing that job demands manifest in work-related stress if unequally balanced against moderating factors such as social support and resilience (Wei et al., 2011). The lesser researched concept of team resilience was however adopted to underpin the approach of this thesis, as team resilience is multilevel construct derived in positive relationships interacting with both individual team members and higher organisational systems. Despite this clear interaction, many contemporary models of team resilience fail to provide a holistic and comprehensive view of the concept within the organisational context. Recognising this gap in the literature, a framework for promoting team resilience in the workplace was put forward to provide an evidenced-based grounding for research methods and outcomes (chapter 2.2.4).

The proposed framework draws on the strengths and conceptual similarity of existing theoretical frameworks to present an accessible and holistic depiction that recognises the position of team resilience within an organisational system. This system is presented within a multilevel framework illustrating interaction at the individual, team, and organisation level underpinned by the IMOI process (Ilgen et al., 2005). This framework resonates with cross-level homologous multilevel models based on two key underlying assumptions: theoretical similarity and the comparable X-Y relationship at each systemic level (Chen et al., 2005). In terms of theoretical similarity, resilience is broadly conceptualised at all three levels as the maintenance or return to normal functioning within an appropriate timeframe following exposure to adversity which initially resulted in the deterioration in functioning (Chapman et al., 2018). This understanding of each system demonstrates functional similarity. In addition to this, each resilience system also has structural similarity. For example, the coordination of affective, cognitive, and behavioural actions at each hierarchical level enables each system to return to normal functioning and facilitate the emergence of resilience (Hartwig et al., 2020). This process also denotes the second underlying assumption of homologous multilevel models, with the promotion of resilient practices expected to manifest in the return to normal functioning by each system (Gucciardi et al., 2018). Although operational and measurable differences exist across these three resilience systems, in terms of conducting research within the organisational setting, Costa et al. (2013), recommend that multilevel thinking and research is essential in terms of application and practice as organisations are organic integrative systems that require a multilevel approach and interventions to holistically address and explain phenomena (Roberts et al., 1978).

Based on the research findings and discussions of this thesis, embedding and promoting team resilience practices from the top-down within organisational culture will encourage resilience within healthcare teams (Senturk, 2018; Stoverink, 2020). This is achieved through

the interactive relationship between teams, team members, and higher organisation processes. All three systems have a shared responsibility for engaging and implementing resilient team practices within the workplace, but more weight should be placed on higher order systems. In practical terms, taking a multilevel top-down approach to promoting team resilience has been of central importance to the success of this study. Engaging with high-level organisational stakeholders during initial stages of the research study design was essential as key objectives and challenges were highlighted and informed the direction and scope of the research in practice. Establishing good working relationships and strong support from organisational leaders positively influenced engagement with team leaders and individual team members to buy into the online team reflective journal intervention.

As intervention implementation was set within the context of on-going adversity, taking a multilevel approach to promote this concept proved to be a necessity as pandemic-related challenges severely limited the researcher's remit. Despite poor feasibility in practice due to implementation timing, the intervention has the potential to effectively encourage a culture of prosocial behaviour, learning and reflectivity, and boundary spanning within an organisation. These resilient behaviours will cascade down to existing and new team units and then to existing and new team members, which can facilitate the emergence of team resilience when faced with challenging situations. Using this intervention can be beneficial during on-boarding, induction training and preceptorship programmes for new starters and student placements, as it provides a unique social space to promote and instil a range of resilient team behaviours, for example, social support, peer mentoring, and reflective learning and development (Sprengel & Job, 2004; McCray et al., 2016).

Encouraging team reflective practices and expectations from the start of team membership will promote a positive team culture and strengthen existing team processes and

relationships. Engaging longer-serving team members within this process can further benefit the longevity of team membership by increasing social networks, boosting individual resilience and confidence of new members (e.g., through formal or informal mentorship schemes; Davey et al., 2020). Providing opportunities for both demographic groups to establish positive working relationships can further enhance resilient team attributes through enhancing shared mental models and team potency. In addition to supporting internal team relationships and individual wellbeing and resilience, this initial time-period provides an opportunity for the team to engage in boundary spanning activities such as horizontal engagement with other teams and vertical engagement with higher-organisational leaders. Overall, the combination of these various reflective learning activities can increase the ability of teams to positively adapt to perceived adversity in the workplace.

Finally, through a considered implementation process, the intervention can be used to re-engage with existing team members who are struggling within their role or require additional support, thus highlighting the potential use of the online team reflective journal intervention where it is most relevant and required. To develop such a resilient team culture will require both multilevel engagement within NHS organisations as well as collaborative working with external partners. For example, collaborating with university student placement teams and other training providers to embed the key underpinning principles of the team resilience intervention within training programmes. This will be beneficial for encouraging a positive reflective learning perspective to enhance and ease the transition process for new team members coming from higher education or other employers. Overall, the current work highlights the importance for promoting resilient team practices throughout the lifespan of employment as essential to enhance the functioning of diverse teams.

Other factors to consider are healthcare team structures. As previously discussed, although multi-disciplinary teams (MDT) are more common within primary healthcare settings, inter-disciplinary teams (IDT) are noted to align with a resilient team culture more closely (McCray et al., 2016). Ruddy and Rhee (2005), state however that moving beyond both MDT and IDT, are trans-disciplinary team models (TDT) that are becoming a more popular approach within the healthcare setting. TDT encourage team members to become sufficiently familiar with common concepts and approaches of other specialisms or areas of expertise and knowledge within a team. This crossing disciplinary boundaries and enabling teams to be more creative and adaptable in their approach to experienced challenges as they function at a deeper level of team understanding and interactivity (CNMRTL, n.d.).

Gibb et al. (2009), evaluated the development of a clinical team working within a mental health service who incorporated team processes and structures that enabled client and professional knowledge to be utilised as a resource to better inform decision-making through informal trans-disciplinary exchange. Simple practical modifications to traditional team processes such as increasing internal communication networks (e.g., informal discussion in the office with different professionals) minimised time taken to gather and exchange information as well share knowledge about clients that others were unaware of due to professional boundaries. Gibb et al., state that these simple enhancements to team process were underpinned by good inter-personal team working relationships. As a result, the team viewed themselves as better able to respond to workplace challenges, due to the better coordination and sharing of knowledge, resources and decision-making, as well as being more effective to achieve team goals. This approach to teamwork informed by principles of TDT working encourages the promotion of key resilient team states such as SMM, team potency, and psychological safety, more than traditional team structures as core components of this model include team learning, reflective and boundary spanning practices. In turn, as this team

culture is embedded with behavioural practice and activities, this positively influences the attainment of the team output states when they experience workplace challenges, thus enhancing the emergence of team resilience. Although at present MDT are most common within primary care, incorporating aspects of TDT working, albeit only informally through positive team and broader organisational culture, will encourage teams and participating members to engage in resilient-related behaviours and practices.

9.3.1 A practical framework for promoting team resilience in the workplace

At the beginning of this thesis, the 2019 annual NHS staff survey revealed work-related stress was at a five year high of 40%. Throughout the duration of this thesis, this has increased to 48% (NHS, 2022), due to unresolved long-standing healthcare workplace challenges, and furthermore by the Covid-19 pandemic. Consequently, many frontline care teams are burnt-out and exhausted (Joint NHS Providers and NHS Confederation report, 2021). With trends showing no signs of improvement, the need for practical help to tackle work-related stress within the healthcare setting is more vital than ever.

The primary purpose and scope of this thesis was to develop a feasible intervention to promote team resilience in the healthcare setting. However, the development of an evidence-based theoretical model for promoting team resilience in the workplace was essential to provide a clear and comprehensive theoretical grounding upon which to achieve this purpose. Throughout this thesis, research findings have been extensively discussed with reference to the proposed framework, overall providing direct support. For example, all phase one research studies demonstrated the individual nature of team functioning, the range of impact that perceived adversity can have on teams, as well as the range of affective, behavioural, and cognitive team attributes that can be adapted to respond to real-world workplace challenges. Given this diversity, the observation that key research findings map directly onto the proposed

framework is a key outcome of this thesis. This has enabled the intervention design process and feasibility study to produce an operational intervention that can be applied to a variety of teams with potential to draw positive outcomes. Moreover, the now enhanced understanding of team resilience, challenges the initial understanding that the relationship between job demands, and work-related stress is moderated by social support and resilience (Wei et al., 2011), namely that these terms are broad and non-specific, thus unhelpful. Instead, the proposed framework for promoting team resilience in the workplace suggests that the team resilience process moderates the relationship between job demands and work-related stress, as it draws on a range of affective, behavioural, and cognitive attributes (derived in positive team working relationships, including social support), across multiple organisational systems.

Through the evidenced-based approach of this thesis, limitations of the current team resilience interventional literature, particularly relating to healthcare practice, have been revealed. This highlights the limited practical application of existing contemporary theoretical models of team resilience to healthcare teams. Although these theories relate to practice, existing models of team resilience are not necessarily practical theories. Goldkuhl (2006), states that any theory can be designated as practical if deemed functional and valuable for use in practice, however this attribution also means that practice-related theories are not necessarily practical in the real-world. The focus on application in practice or functionality is needed to shape future models of team resilience. For example, the proposed framework conceptualising team functioning, perceived adversity, resilient team behaviours, and emergent states in terms of broad tiered categories or process streams, enhances accessibility by practitioners to translate the complex multilevel nature of the construct into practice for teams who will benefit the most from this area of knowledge. Overall, the proposed framework has enabled the development process for an accessible intervention with utility, as well as the ability to engage with busy working professionals to share knowledge and best

practice of team resilience in the workplace with adaptable applications in response to real-world adversity. Although, research phase two revealed that feasibility in practice is challenging, findings highlighted that with adequate time, collaboration, and engagement from multiple stakeholders within the organisational setting, an intervention to promote team resilience within the workplace can be successful.

To enhance the practical nature of the proposed framework, the recommended three-stage intervention implementation strategy put forward in chapter 8.4.1 based on Stoverink et al.'s (2020), theoretical model of team resilience, informed by the work of Alliger et al. (2015), and Marks et al. (2001), is proposed as a revision to the theoretical framework developed by this thesis (see Figure 14 below). By drawing specific attention to the importance of multilevel engagement with teams during times of relatively normality, followed by implementation during the time of team action and adaptation to perceived adversity, and finally intervention evaluation upon return to relative team normality, highlights the intention of the proposed framework for direct use in practice. Although at face-value this is only a simple addition to the existing proposal, it has the potential to improve the feasibility and potential success of future team resilience interventions as it highlights and combines key learning from both academic literature and contemporary real-world research. This demonstrates the strong evidence-based grounding of the proposed framework.

Overall, the current work resulting in the development of an online team reflective journal intervention to promote team resilience in the healthcare setting has many implications both in theory and in practice. Encouraging recommended resilient team practices can facilitate a positive culture that enhances team functioning when faced with workplace challenges but also transcends teams to positively affect individual team members wellbeing and the wider organisation. To this end, an integrated evidenced-based approach to promoting team

resilience within the healthcare setting is important to positively support healthcare teams to continue functioning when experiencing workplace challenges, through positive team working relationships, to help tackle rising work-related stress in the healthcare organisational setting. Moving forward, this thesis recommends that future research is conducted to further develop the team resilience intervention. This will empirically test the validity of the proposed framework in practice. Implementing the intervention across a variety of organisational settings with various team structures will provide further insights and refinements to this model and provide a useful framework for promoting team resilience within the workplace. In addition to testing of the current intervention, the development of alternative interventions and programmes to suit the needs of teams experiencing workplace challenges based on the proposed framework is encouraged to demonstrate its generalisability and relevance as a practical model to underpin solution focussed strategies in the real-world.

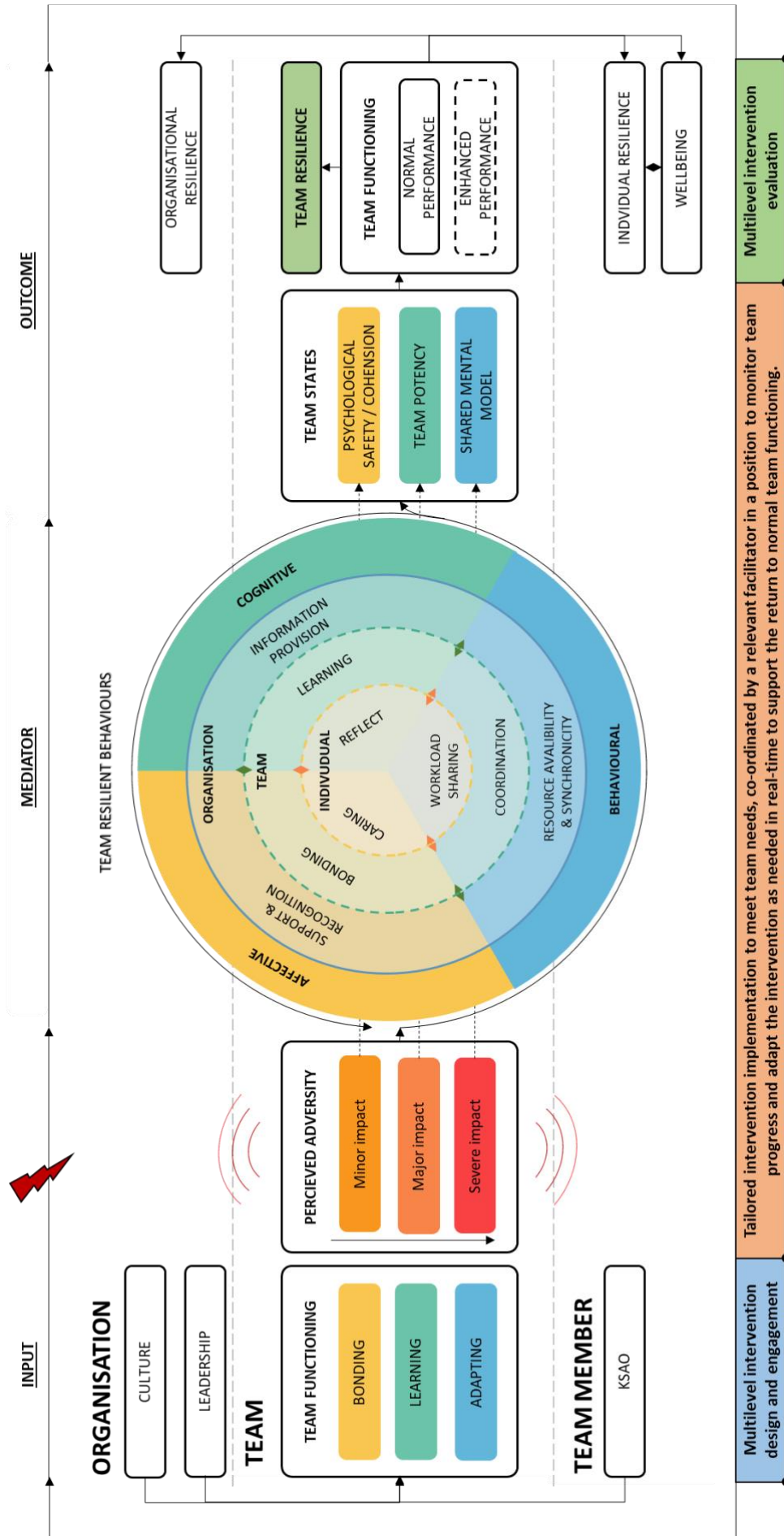


Figure 14: A practical framework for promoting team resilience in the workplace

9.4 Researcher reflections & future direction

The position of the researcher and the unique research context within which this project took place has been recognised and commented on throughout this thesis. In doing so, this draws attention to key learning and decision-making that has shaped this research project as well as enhances the understanding of the reader. Researcher experiences are not often explicitly expressed within academic literature (Leigh & Brown, 2021), however understanding the real-world challenges of the research environment is paramount as these will influence and shape future research. Progression from initial research conceptualisation, through to design, implementation, and now to this final review of the current work has taken four years, as would be expected for full-time doctoral research (Jegede, 2021). Also expected was the steep learning requirements and acquisition of relevant knowledge, the development of management and professional skills required to conduct real-world research, and the time-pressures to meet academic milestones, along with the isolation commonly associated with doctoral research (Bick et al., 2021). What was unexpected however was the severity and manifestation of experienced challenges and threats to the achievability of the current work and the amount of adaptation required to ensure its survival in the context of the pandemic. A significant challenge that struck at the core of this research project, threatening its viability, were the unprecedented and continually changing social restrictions in response to the unpredictable nature of the pandemic. From its outset, the current work involved extensive collaboration with NHS stakeholders to design specific research protocols, however lockdown measures came into effect days before phase one recruitment and engagement procedures were due to commence. Moreover, in addition to winter pressures, phase two live data collection procedures were diminished despite being specifically designed and developed for implementation during on-going workplace challenges.

Alongside the physical impact, the uncertainty for the future direction, scale, and scope of planned research activities following non-time limited data collection postponement, had an influence on the researcher morale and wellbeing. Adding to this was the time and effort required to engage with time-pressured clinical stakeholders and academic supervisors to adapt research protocols to new and unknown research conditions involving participant populations recovering from traumatic working conditions. Finally, the challenging decision-making to balance research priorities against the risk of transmission and the impact of social isolation all had an affect. These challenges are not isolated incidents only experienced by this current thesis. The pandemic has had an unprecedented and far-reaching impact on all aspects of academic research life from the loss of access to resources, field sites, learning and support services, to reduced productivity and output due to research prioritisation, diverted funding and physical health and mental wellbeing (Bick et al., 2021). In a survey investigating the impact of the pandemic on academic research, 58% reported that Covid-19 had made it impossible to conduct planned research activities (UKRI., 2021).

In response to experienced challenges, the researcher's approach is captured by all aspects of the Researcher Development Framework (RDF; Vitae, 2011), having to adapt functioning and achieve research outcomes as well as positive personal and professional development. The most explicit form of creative adaptation drawing on researcher knowledge and technical skills is observed through revised and adapted data collection procedures to online-access methods only. This response enabled data collection to progress, however recruitment was severely limited due to the unavoidable minimal engagement between the researcher and the participant population. In addition to this, the uncertainty of when and how face-to-face data collection would resume shaped the content and format of the intervention, as well as the scope of the feasibility study which was conducted within the context of significant increasing pandemic-related adversity and winter-pressures. Consequently, the implementation of

research procedures became significantly more reliant on NHS stakeholder involvement and ward team leadership due to access restrictions. Although this project would not have been successful without this level of input, this did create a distance between the researcher and research proceedings and participants, thus diminishing the impact of the feasibility study.

Upon reflection, the fact that meaningful data was eventually collected during such challenging research conditions highlights the success and importance of effective research governance, management, and engagement with gatekeepers and key stakeholders. Establishing contact with senior leadership NHS stakeholders who recognised the importance of this research area and the relevance and potential impact of this project at research site was key to the success of this thesis. For future research to further evaluate the online team reflective journal intervention, a proactive, multilevel approach to research engagement is recommended to enhance acceptability and engagement with the target research population. Furthermore, consideration for a participant-action research design involving researchers, stakeholders and participating teams working in partnership to understand the research context and implement the intervention during experienced on-going workplace challenges may enhance the impact and success of the intervention in practice (Baum et al., 2006).

In addition to social restrictions, time was major challenge experienced throughout this thesis. Despite sufficient thought and effort to inform a SMART research proposal and project plan that included contingency lag time, in the end three to four years proved to be a challenging timeframe to achieve desired research outcomes. Setbacks and delays were inevitable considering the groundwork required to engage with NHS stakeholders, develop robust research procedures, and attain university and NHS R&D approval, thus even without the impact of the pandemic, Phillippi and Lauderdale (2018) remark that research engagement access to the clinical sites is not a straightforward process but involves significant

time and effort to negotiate acceptable research parameters. Upon reflection, to enhance the impact of the next stage of the intervention development process or future team-resilience interventions in healthcare practice, it is recommended that researchers with sufficient time and commitment approach the subject or otherwise they risk wasting time and effort for both them and clinical stakeholders. Those with pre-existing research-relationships or new researchers such as part-time doctoral students would be in an advantageous position to implement interventional research within the healthcare organisational setting to achieve both short-term as well as long-term goals and research outcomes.

Finally, in addition to the practical research challenges experienced by this thesis the theoretical challenges cannot be understated. Although several comprehensive theoretical models of team resilience existed at the beginning of the project, (with others being added to literature during this time), minimal research specifically exploring team resilience within clinical practice is available. Alongside this, the differing use of terminology, blurred boundaries between team and individual, and team and organisational psychological constructs, as well as the lack of real-world experiential knowledge of working within clinical practice presented a steep learning curve, as would be expected with academic research at doctoral level. Recognising these areas of deficit however facilitated the on-going process of knowledge acquisition from both the literature base as well as academic supervision and input from clinical stakeholders. In turn this informed the content, format, and delivery of the online team reflective journal, enhancing its relevance within clinical practice during on-going workplace challenges. Therefore, for researchers seeking to implement the next research stage recommended by this thesis, an intimate knowledge or direct access to individuals who hold relevant knowledge, skills and expertise within the research areas is vital to enhance the feasibility, effectiveness and robustness of future interventional research in practice.

Overall, the journey of this thesis embodied the concept of the very same topic being examined. This critical reflection of the research process draws attention to several useful insights and considerations for future researchers seeking to promote team resilience within clinical practice. At a time when many research projects are being prioritised and re-evaluated for various reasons, the impact of research addressing target populations needs must be taken into consideration (Bick et al., 2021). Although recognising the challenges and commitment required to further the online team reflective journal intervention, future research is required to further investigate role of team resilience as a moderator between experience workplace challenges and work-related stress within the healthcare setting.

9.5 Thesis conclusion

In the face of rising work-related stress across the NHS, promoting positive team working relationships was identified as a key priority by the NHS Trust involved in this research project. Within this context, an evidence-based framework for promoting team resilience in the workplace was developed and adopted as the principal theoretical approach to underpin the development of a practical intervention. The focus of this thesis has been to firstly develop an evidence-based intervention designed to promote resilience within healthcare teams in the healthcare setting, and secondly, to test its feasibility in practice. To this end, through a mixed methods inquiry that has provided meaningful insights for how to support healthcare teams during on-going workplace challenges, a novel online team reflective journal intervention has been produced. This intervention has the potential to successfully promote healthcare team resilience as well as positively influence individual resilience and wellbeing. However, the intervention was not found to be feasible within the specific research context primarily due to the severity of experienced on-going workplace challenges. Consideration for intervention implementation timing alongside the need to up-skill and motivate multiple healthcare professional groups to proactively engage in reflective practice within the workplace, are key

real-world emerging research outcomes. Overall, this thesis demonstrates that it is possible to develop an evidence-based healthcare team resilience intervention. However, feasibility in practice and ultimately the ability to help tackle work-related stress in the healthcare workplace, will only be attained through positive motivation, collaboration, and a strength-based approach to drive forward positive workplace cultural change across multiple stakeholder groups within the healthcare organisations.

The development process of the online team reflective journal intervention is the primary contribution to knowledge by this thesis. A significant part of this includes the development of the evidence-based framework for promoting team resilience in the workplace, thus, this thesis makes a novel contribution in both knowledge and practice. This thesis offers opportunities for further research to support healthcare teams as well as provides practical insights and advice for organisations, practitioners, and an academic audience into healthcare organisational systems on how to support and promote teams facing workplace challenges. Finally, it is recognised that the current work is just the beginning of team resilience interventional research to help tackle work-related stress within the UK healthcare setting.

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Appendices

Appendix 1: Data management plan

Data Generation

Primary raw questionnaire data will be collected via staff questionnaires, individual and group interviews, throughout this research project. Data will be collected through digital questionnaires measures hosted on Microsoft Forms and in-person or online interviews via Microsoft teams which meets the University of Worcester data management policies. Where in-person data collection procedures are not possible, all resources will be adapted for digital delivery.

Data Storage

All participant data will be stored appropriately in line with the university's data management policies and procedures. Hard copy data (raw and processed) will be stored in a locked storage cabinet in a locked office with restricted access at the University of Worcester. Digital data (raw and processed) will be stored only on the University of Worcester secure server. Access to participant data will be strictly managed. Personnel with access to the data will be limited to the researcher and supervisory team.

Data Preservation

On completion of the research project, participant questionnaire and interview data will be preserved for 10 years in accordance with the University of Worcester's Effective Management of Research Data guidelines. Hard copy data will be stored with restricted access in filing cabinets at the University of Worcester and digital data will be stored on the researcher's secure OneDrive folder on the University server. To ensure that the data is accessible in the long-term the digital data will be stored in a suitable file format (e.g., SAV or CSV etc).

Data Sharing

For sharing purposes metadata and documentation will be produced that sufficiently describes the data was generation, what data exists, data ownership, storage and restrictions. At no point will identifiable information be shared.

Ethical Issues and Legal Compliance

This data management plan has taken into consideration a range of ethical and legal associated with this research projects data usage. To manage the data this project plan fully cooperates with university guidelines and policy and UK requirements.

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Appendix 2: Systematic review – quality assessment checklists

Table A1: JBI critical appraisal checklist for non-randomized experimental studies

Checklist questions	Bruschwein & Gettle (2020)	Colgan et al. (2021)	Grymonpre et al. (2016)	Sonesh et al. (2015)
Is it clear in the study what is the cause' and what is the 'effect' (e.g., there is no confusion about which variable comes first)?	Yes	Yes	Yes	Yes
Were the participants included in any comparisons similar?	Yes	Yes	Yes	Yes
Were the participants included in any comparisons receiving similar treatment/care, other than the exposure or intervention of interest?	n/a	Yes	Yes	Yes
Was there a control group?	No	Yes	No	Yes
Were there multiple measurements of the outcome both pre and post the intervention/exposure?	Yes	Yes	Yes	Yes
Was follow up complete and if not, were differences between groups in terms of their follow up adequately described and analysed?	Yes	Yes	Yes	Yes
Were the outcomes of participants included in any comparisons measured in the same way?	Yes	Yes	Yes	Yes
Were outcomes measured in a reliable way?	Yes	Yes	Yes	Yes
Were appropriate statistical analysis used?	Yes	Yes	Yes	Yes

Table A2: CASP qualitative research checklist responses

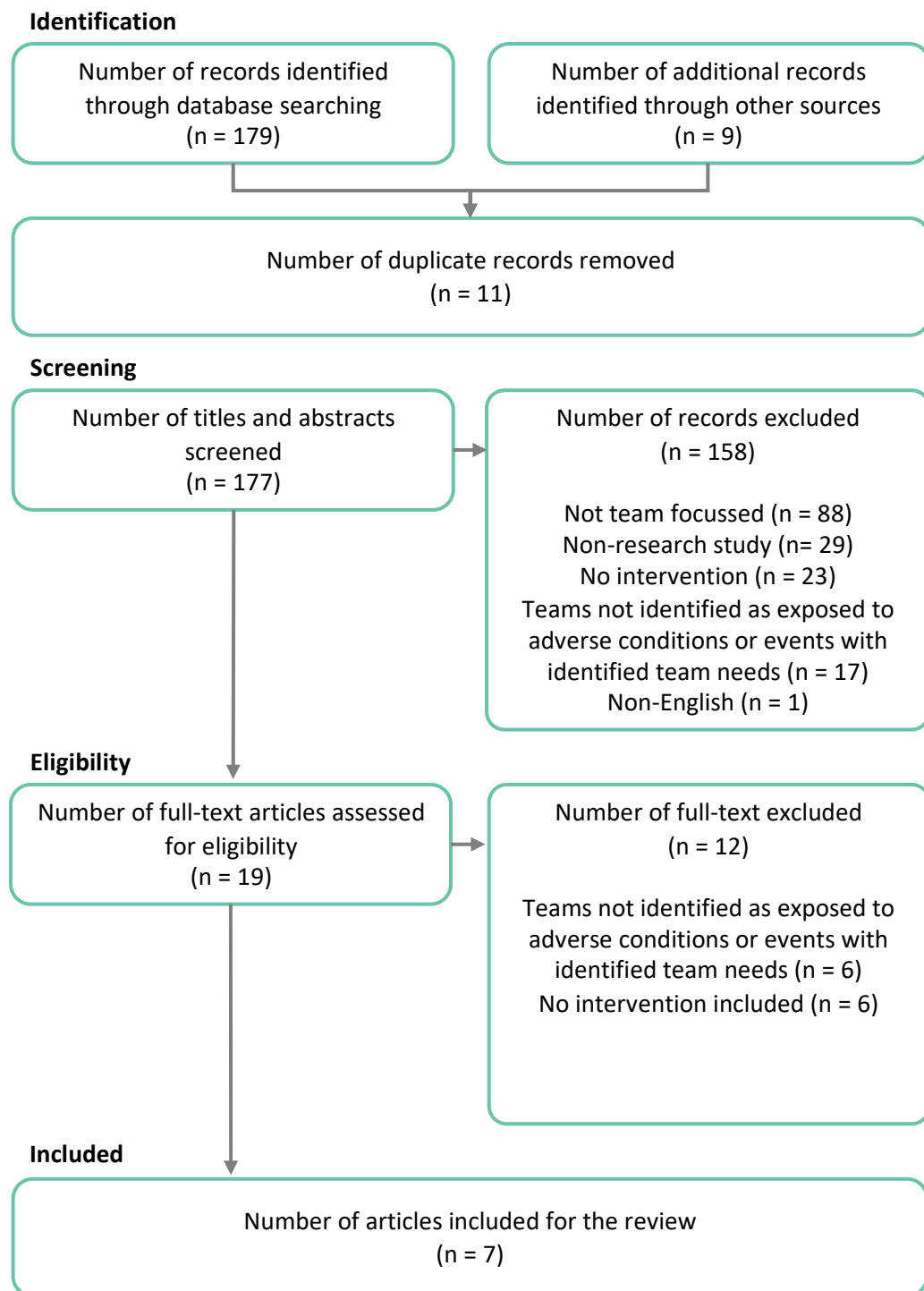
Checklist questions	Gray (2016)	Nancarrow et al. (2015)
Was there a clear statement of the aims of the research?	Yes	Yes
Is a qualitative methodology appropriate?	Yes	Yes
Was the research design appropriate to address the aims of the research?	Yes	Yes
Was the recruitment strategy appropriate to research aims?	Yes	Yes
Was data collected in a way that addressed the research issue?	Yes	Yes
Has the relationship between researcher and participants been adequately considered?	Yes	Yes
Have ethical issues been taken into consideration?	Yes	Yes
Was the data analysis sufficiently rigorous?	Yes	Yes
Is there a clear statement of findings?	Yes	Yes
Will the results help locally?	Yes	Yes

Table A3: CASP randomised controlled trial standard checklist

Checklist questions	Huis et al. (2013)
Did the study address a clearly focused research question?	Yes
Was the assignment of participants to interventions randomised?	Yes
Were all participants who entered the study accounted for at its conclusion?	Yes
Were the participants 'blind' to intervention they were given?	No
<ul style="list-style-type: none"> • Were the investigators 'blind' to the intervention they were giving to participants? • Were the people assessing/analysing outcome/s 'blinded'? 	
Were the study groups similar at the start of the randomised controlled trial?	Yes
Apart from the experimental intervention, did each study group receive the same level of care (that is, were they treated equally)?	Yes
Were the effects of intervention reported comprehensively?	Yes
Was the precision of the estimate of the intervention or treatment effect reported?	Yes
Do the benefits of the experimental intervention outweigh the harms and costs?	Yes
Can the results be applied to your local population/in your context?	Yes
Would the experimental intervention provide greater value to the people in your care than any of the existing interventions?	Can't tell

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Appendix 3: Systematic review – flow diagram for study selection process



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Appendix 4: Systematic review – study intervention description summary

Study author(s)	Intervention description
Bruschwein & Gettle (2020).	<p>Three interventions used in combination over a 3-month period with weekly intervention meetings. (1) Three Good Things – activity to identify of three positive aspects of each person’s day recorded daily in individual journals over two weeks. Teams also shared one ‘good thing’ at the beginning of weekly intervention meetings for 5 minutes over four weeks. (2) Presentation by a productivity expert on strategies to work more efficiently with less stress. (3) Team members encouraged to participate in facilitated meditation practice and a guided 10-day meditation mobile app. Teams also participated in short mindfulness exercises during final four weekly meetings.</p>
Colgan et al. (2021).	<p>Mindfulness-based Wellness and Resilience (MBWR) designed to increase resilience, mindfulness, and self-compassion among interdisciplinary primary care teams (IPCTs).</p> <p>Eight 60-minute weekly sessions were delivered following weekly team meetings. Weekly sessions included mindfulness practices, i.e., body scan, mindful breathing, sitting meditation, loving-kindness, and mindful movement. Sessions also included discussions exploring how to integrate informal mindfulness practices into the workday to create the structure and consistency needed to develop and maintain new responses to stress and adversity in the workplace. Relevant mindfulness and resilience research were briefly presented weekly.</p>
Gray (2016).	<p>Three-part programme spaced over a ten-week period.</p> <p>Part 1: Induction to relevant knowledge relating to workplace stress, and to the salutogenic model and process.</p> <p>Part 2: One to one coaching to explore more fully and deepen the potential impact of the programme.</p> <p>Part 3: Team-based coaching focused on team resilience and wellbeing. Group activities included shared conversations identifying descriptions of the team’s ‘best self’ and ‘periphery’ space; and exploring team ‘interconnectedness’ and ‘interdependence’ using coaching tools.</p>
Grymonpre et al. (2016).	<p>Control: No clinical placement – usual care</p> <p>Experimental: team provided clinical placements varying in length (1 to 5-weeks).</p> <p>Team training tailored to each team’s needs as determined by responses to AITCS. Three overarching topic areas were offered: Interpersonal and Communication Skills (including conflict resolution), Patient Centred and Family Focused Care, and Collaborative Practice (including collaborative decision making, roles and responsibilities, and team functioning).</p> <p>Teams were offered up to 8 hours of facilitated training.</p>
Huis et al. (2013).	<p>Control: (SAS) targeted individual-level professionals through: education improving relevant knowledge and skills, reminders for supporting the actual performance of hand hygiene, feedback on current behaviour and adequate products and facilities.</p> <p>Experimental: (TDS) targeted at addressing barriers at team level by focussing on social influence in groups and strengthening leadership: supplemented with gaining active commitment and initiative of ward management, modelling by informal leaders at the ward, and setting norms and targets within the team.</p>

	Additional TD elements delivered over three interactive team sessions (1–1.5 h each) guided by the team manager and an external coach over the course of six months.
Nancarrow et al. (2015).	A six-month team reflection intervention consisting of 6 facilitated session and 3 half-day events to for teams to reflect on and action plan interdisciplinary teamwork practices in terms of individual, team, service user and organisational outcomes. A resource guide was provided to teams that included reflective information and exercises, alongside. Intervention based on Structured, Facilitated Action Research for Implementation (SaFARI). Trained facilitators implemented the intervention, which enabled teams to explore their own issues and actions.
Sonesh et al. (2015).	A lecture-based, interactive 85-minute programme divided into two module sessions: Module 1: the importance of early accurate detection of emergent crises through maintenance of SA and elimination of CB by focussing on – problem detection, situational awareness and reduction strategies for cognitive bias and workload. Module 2: adapted TeamSTEPPS focusing on – leadership, situational monitoring, mutual support and communication Sessions included elements of practice and discussion opportunities as well as videos to demonstrate teamwork knowledge, skills, and attitudes.

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Appendix 5: Staff interviews – participant information & consent form



Healthcare Team Resilience Interview

Participant Information Sheet & Privacy Notice

Research Title: The development of an intervention using team relationships to facilitate team resilience in a UK healthcare trust

Invitation

The University of Worcester engages in a wide range of research which seeks to provide greater understanding of the world around us, to contribute to improved human health and well-being and to provide answers to social, economic and environmental problems.

We would like to invite you to take part in one of our research projects. Before you decide whether to take part, it is important that you understand why the research is being done, what it will involve for you, what information we will ask from you, and what we will do with that information.

We will in the course of this project be collecting personal information. Under General Data Protection Regulation 2016, we are required to provide a justification (what is called a "legal basis") in order to collect such information. The legal basis for this project is "task carried out in the public interest".

You can find out more about our approach to dealing with your personal information at <https://www.worcester.ac.uk/informationassurance/visitor-privacy-notice.html>.

Please take time to read this document carefully. Feel free to ask the researcher any questions you may have and to talk to others about it if you wish.

RS1_Staff Interviews_Team Resilience_v1.0



[What is the purpose of the research?](#)

The 2019 NHS staff survey reported the highest level of work-related stress over the past five years. Interventions and practices currently exist within the NHS that encourage individual resilience as an approach to protect staff well-being, but until now limited research has focused on team level resilience. The lack of understanding in this area is problematic as healthcare teams will invariably face challenging situations in the workplace that differ from the challenges experienced at an individual level. The purpose of this research project is to develop a deeper understanding of current team relationships within the NHS and to explore how such relationships can facilitate team resilience, which is how well a team deals with the setbacks and challenges that they may face in the workplace.

[Who is undertaking the research?](#)

Name of researcher: Christopher Thomas

Position: Postgraduate research student

Contact email: c.thomas@worc.ac.uk

Clinical supervisors

[REDACTED]

[Who has oversight of the research?](#)

The research has been approved by the Research Ethics Panel for the College of Business, Psychology and Sport in line with the University's Research Ethics Policy. The University of Worcester acts as the "Data Controller" for personal data collected through its research projects & is subject to the General Data Protection Regulation 2016. We are registered with the Information Commissioner's Office and our Data Protection Officer is Helen Johnstone (infoassurance@worc.ac.uk). For more on our approach to Information Assurance and Security visit: <https://www.worcester.ac.uk/informationassurance/index.html>.

[Why have I been invited to take part?](#)

You have received this invitation as the researcher is exploring experiences of team working relationships within the healthcare environment, and as a member of staff at a Gloucestershire NHS Trusts your involvement in this research study would be appreciated.

RS1_Staff Interviews_Team Resilience_v1.0



[Do I have to take part?](#)

No. It is up to you to decide whether or not you want to take part in this study. As part of the interview you will be asked to sign a consent form. If you do decide to participate but at a later point would like to have your data withdrawn from the study then please inform the researcher in person or on the email provided referencing your participant number and your data will then not be used. You will have up to 14 days after the date that you complete the interview to submit your withdrawal request.

[What will happen if I agree to take part?](#)

If you agree to participate, you will take part in a face to face interview with the researcher discussing your experience of team working relationships and team resilience. The interview can be held at a time and location at your convenience in an agreed public location in a Gloucestershire NHS Hospital Trust. These details can be arranged with the researcher on the contact details provided. The interview will take approximately 45 – 60 minutes.

Throughout the interview the researcher will use an audio recorder to capture your responses to the interview questions. The information collected will remain strictly confidential.

[What are the benefits for me in taking part?](#)

Taking part in this research study will have a number of benefits. Firstly, your participation will contribute to knowledge of this team resilience within the NHS and also lead to a better understanding of current team relationships and common challenges that staff may face. Secondly, this research study provides a basis on which future practical steps can be built so to facilitate team resilience within NHS teams. These practical measures would benefit NHS teams by providing knowledge and training that can support, encourage and protect teams from the negative-effects of work-related stress when facing workplace challenges.

[Are there any risks for me if I take part?](#)

This research study involves a confidential face to face interview with the researcher discussing your experience of team working relationships and team resilience. The interview will take place in an agreed public location in a Gloucestershire NHS Hospital Trust. The topics covered in the interview may potentially present some discomfort when exploring personal experience of team working relationships, however you can decline to answer any of the questions and withdraw at any time during the interview. Your participation in this research study will have no impact on your current work, your participation will remain anonymous and your data will remain confidential.

Due to the nature of topic of the interview, it may be the case that situations and/or behaviours of bullying or harassment at work are disclosed. In this situation the researcher refer you to the following support services websites to seek further information:

<https://www.nhs.uk/conditions/stress-anxiety-depression/bullying-at-work/>

<https://www.acas.org.uk/index.aspx?articleid=2042>

<https://www.citizensadvice.org.uk/work/problems-at-work/>

RS1_Staff Interviews_Team Resilience_v1.0



[What will you do with my information?](#)

Your personal data / information will be treated confidentially at all times; that is, it will not be shared with anyone outside the research team or any third parties specified in the consent form unless it has been fully anonymised. The exception to this is where you tell us something that indicates that you or someone else is at risk of harm. In this instance, we may need to share this information with a relevant authority; however, we would inform you of this before doing so.

During the project, all data / information will be kept securely in line with the University's Policy for the Effective Management of Research Data and its Information Security Policy.

We will process your personal information for a range of purposes associated with the project primary of which are:

- To use your information along with information gathered from other participants in the research project to seek new knowledge and understanding that can be derived from the information we have gathered.
- To summarise this information in written form for the purposes of dissemination (through research reports, a thesis / dissertation, conference papers, journal articles or other publications). Any information disseminated / published will be at a summary level and will be fully anonymised and there will be no way of identifying your individual personal information within the published results.
- To use the summary and conclusions arising from the research project for teaching and further research purposes. Any information used in this way will be at a summary level and will be fully anonymised. There will be no way of identifying your individual personal information from the summary information used in this way.

If you wish to receive a summary of the research findings or to be given access to any of the publications arising from the research, please contact the researcher.

[How long will you keep my data for?](#)

Your personal data will be retained until the project (including the dissemination period) has been completed.

[How can I find out what information you hold about me?](#)

You have certain rights in respect of the personal information the University holds about you. For more information about Individual Rights under GDPR and how you exercise them please visit: <https://www.worcester.ac.uk/informationassurance/requests-for-personal-data.html>.

[What happens next?](#)

Please keep this information sheet. If you do decide to take part, please either contact the researcher using the details below.

RS1_Staff Interviews_Team Resilience_v1.0



[Thank you for taking the time to read this information](#)

If you decide you want to take part in our project, and we hope you do, or if you have any further questions then please contact Christopher Thomas via email: c.thomas@worc.ac.uk.

If you have any concerns about the project at this point or at any later date you may contact the researcher (contact as above) or you may contact the researcher's academic supervisor Dr Helen Scott via email: h.scott@worc.ac.uk.

If you would like to speak to an independent person who is not a member of the research team, please contact Karen Dobson at the University of Worcester, using the following details:

Karen Dobson
Secretary to Research Ethics Panel for College of Business, Psychology and Sport
University of Worcester
Henwick Grove
Worcester WR2 6AJ
ethics@worc.ac.uk

RS1_Staff Interviews_Team Resilience_v1.0



Consent Form

Participant Identification Number:

Name of Researcher: Christopher Thomas

Research Title: The development of an intervention using team relationships to facilitate team resilience in a UK healthcare trust

Item	Statement	Please initial Box
1.	I confirm that I have read the participant information & privacy notice section for this research interview. I have had the opportunity to consider the information, ask questions and have had these answered satisfactorily.	
2.	I understand that my participation is voluntary and that I am free to withdraw at any time without giving any reason, without my medical care or legal rights being affected.	
3.	I understand that the information collected about me will be used to support other research in the future, and may be shared anonymously with other researchers.	
4.	I agree to take part in the above study.	

Name of Participant Signature Date

Name of Researcher Signature Date

RS1_Staff Interviews_Team Resilience_v1.0

(Return to page 105: 5.2.1; page 138: 6.2.1; page 189: 8.2)

Appendix 6: Staff interviews – demographic questionnaire



Demographics

The following set of 7 questions are about you.

- 1. Age
 - 1.1 18 – 29
 - 1.2 30 - 39
 - 1.3 40 – 49
 - 1.4 50 - 59
 - 1.5 60+

- 2. Sex
 - 2.1 Female
 - 2.2 Male
 - 2.3 Prefer not to say

- 3. Profession
 - 3.1

- 4. Ward
 - 4.1 Medical
 - 4.2 Surgical
 - 4.3 Other.....

- 5. How many years have you worked with your current team?
 - 5.1 0 – 1 year
 - 5.2 2 – 5 years
 - 5.3 6 – 10 years
 - 5.4 11 years+

(Return to page 105: 5.2.1; page 138: 6.2.1; page 189: 8.2)

Appendix 7: Staff interviews – interview schedule



Interview Schedule

Rapport

I am Christopher Thomas, I am a PhD student at the University of Worcester. I am conducting this interview as part of my research project.

Purpose

I would like to ask you some questions regarding your experience of team relationships in the workplace and to explore how you think team relationships could facilitate team resilience; team resilience being how well a team deals with the setbacks and challenges that they may face in the workplace.

Timescale

The interview should take no more than 60 minutes.
Is it ok to continue?

Ethical approval

Have you had time to look at the information sheet and the consent form?
Have you read and signed the consent form?

I would like to make you aware that you are not obliged to participate in this study. You can withdraw at any time during the interview. This includes declining to answer any of the questions. You are also able to withdraw your data up to 14 days after the interview by contacting me on the email address provided to you. I will be recording the interview, and transcribing the results word for word.

Do you have any questions before we start?
Are you happy to proceed?

Confidentiality

I would like to remind you that after this interview has been written up word for word, the audio recordings will be destroyed. All transcripts will be anonymised, which means that we will not be able to identify you by looking at the transcripts. Please remember that the content of this interview should not be discussed outside of this session. Any disclosures of illegal activity, or activities that require escalation, will need to be reported to the appropriate authorities.

RS1_Staff Interviews_Team Resilience_v1.0

Questions

Prompts

[Team features](#)

What constitutes your work team?

What professions are involved?

What is the size of your team?

Do you always work with the same people?

How long have you worked in your current team?

[Team working relationships](#)

What is your experience of team working relationships within the NHS/specific ward

Do you get on well with all team members?

Do you interact differently with different professions within your team?

Do you enjoy working with the other people in your team?

Do you feel that you an equal member of the team?

Are there any challenging team dynamics?

How does your interactions with your team impact your personal well-being?

[Team evaluation](#)

Does your team work well together?

Does your team achieve its aims and objectives?

What are the key strengths of your team that enable you to achieve your aims and objectives?

What are some of the key challenges that your team is experiencing right now?

What are some of the areas of your team that you think could be improved so to more effectively achieve the team's aims and objectives?

[Team resilience](#)

How would you describe your team in terms of team resilience?

What does term 'team resilience' mean to you?

How would you describe the qualities of a resilient team?

How does your team manage when facing a challenging situation?



[Team resilience initiatives](#)

What initiatives and practices are currently in place that promote team resilience? Do you feel that team resilience is supported and encouraged within your team?

Do you think there is a need to further encourage team resilience in the workplace?

What practices / activities do you think can be put in place to encourage and build team resilience?

[Closing](#)

Is there anything I have not asked about that you would like to add regarding your experience team relationships and team resilience within the workplace?

Is there anything you have said today that you would like me not to transcribe?

[Any questions?](#)

Do you have any questions for me?

[Action](#)

Thank you much for taking the time to talk to me today. Just to remind you that you can withdraw your data up to 14 days after today. If you feel you would like to talk to anyone after the interview, please contact me and I can signpost you to the appropriate person or service.

RS1_Staff Interviews_Team Resilience_v1.0

(Return to page 106: 5.2.1)

Appendix 8: Staff surveys – resilience measures

McEwen, K., & Boyd, K. M. (2018). A Measure of Team Resilience: Developing the Resilience at Work Team Scale. *Journal of Occupational and Environmental Medicine, 60*(3), 258–272.

<https://doi.org/10.1097/JOM.0000000000001223>

McEwen, K., & Boyd, K. M. (2018). A Measure of Team Resilience: Developing the Resilience at Work Team Scale. *Journal of Occupational and Environmental Medicine*, *60*(3), 258–272.
<https://doi.org/10.1097/JOM.0000000000001223>



[Resilience at Work](#)

The following set of 20 questions relate to your personal experience in the workplace.

Strongly Disagree	Disagree	Somewhat Disagree	Neither Agree or Disagree	Somewhat Agree	Agree	Strongly Agree
0	1	2	3	4	5	6

Item	Statement	0	1	2	3	4	5	6
1.	Generally, I appreciate what I have in my work environment	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
2.	I am able to change my mood at work when I need to	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
3.	I am careful about eating well and healthily	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
4.	I am careful to ensure my work does not dominate my personal life	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
5.	I believe in giving help to my work colleagues, as well as asking for it	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
6.	I have a good level of physical fitness	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
7.	I have a strong and reliable network of supportive colleagues at work	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
8.	I have developed some reliable ways to deal with the stress of challenging events at work	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
9.	I have developed some reliable ways to relax when I'm under pressure at work	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
10.	I have friends at work I can rely on to support me when I need it	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
11.	I have important core values that I hold fast to in my work-life	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
12.	I know my personal strengths and make sure I use them regularly in my work	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
13.	I make sure I take breaks to maintain my strength and energy when I'm working hard	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
14.	I often ask for feedback so that I can improve my work performance	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
15.	My work place is somewhere where I feel that I belong	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
16.	Negative people at work tend to pull me down	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
17.	Nothing at work ever really 'fazes me' for long	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
18.	The work that I do fits well with my personal values and beliefs	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
19.	The work that I do helps to fulfil my sense of purpose in life	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
20.	When things go wrong at work, it usually tends to overshadow the other parts of my life	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Staff Questionnaire_Team Resilience_v1.0

(Return to page 138: 6.2.1; page 189: 8.2)

Appendix 9: Staff surveys – TR@W & R@W subscale definitions

Team Resilience at Work (TR@W) subscale definitions (McEwen & Boyd., 2015)

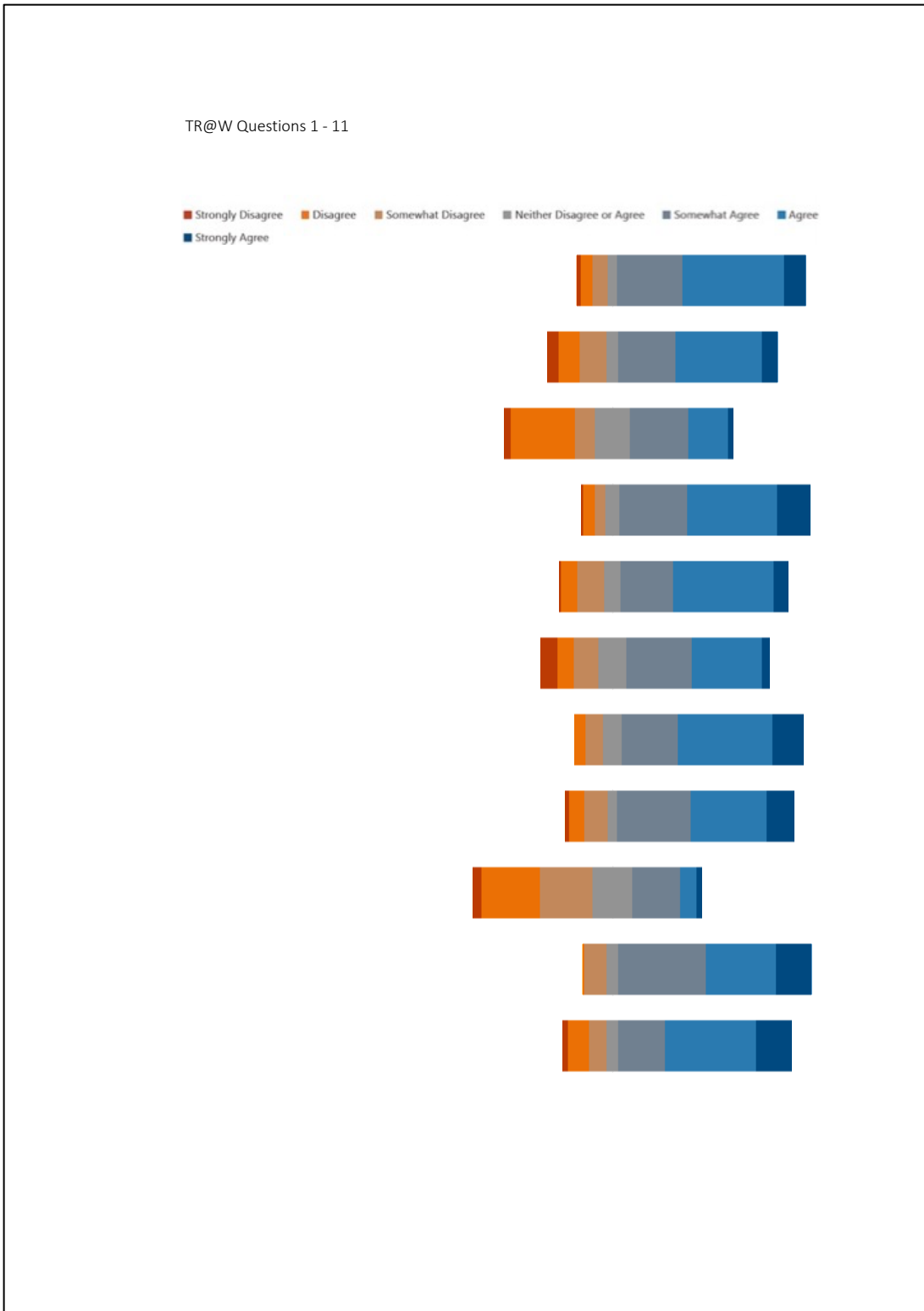
Connectedness	Being cooperative and supportive. Encouraging a sense of belonging.
Perseverance	Staying optimistic and having a solution, rather than a problem, focus. Persisting in the face of obstacles.
Alignment	Aligning to create the desired outcomes. Being optimistic, noticing progress and celebrating success.
Robustness	Having shared purpose, meaning and goals. Being adaptable to change and proactive when issues arise for the team.
Self-care	Promoting and deploying good stress management routines and being alert to overload in members. Supporting life-work balance.
Resourcefulness	Harnessing team member strengths and resources and building a culture of continuous improvement. Developing effective team processes that enable a clear focus on priorities.
Capability	Seeking feedback and building on what works well. Continually building capacity through accessing networks and supports.

Resilience at Work (R@W) subscale definitions (Winwood et al., 2013)

Interacting cooperatively	This factor refers to a workplace work style that includes seeking feedback, advice, and support as well as providing support to others.
Building networks	This factor concerns a pattern of developing and maintaining personal support networks (which might be both within and outside the workplace).
Living authentically	This factor is seen to represent knowing and holding onto personal values, deploying personal strengths, and having a good level of emotional awareness and regulation.
Finding your calling	This factor is essentially associated with seeking work that has purpose, a sense of belonging and a fit with core values and beliefs.
Managing stress	This factor speaks of using work and life routines that help manage everyday stressors, maintain work life balance, and ensure time for relaxation.
Maintaining perspective	This factor concerns having the capacity to reframe setbacks, maintain a solution focus, and manage negativity.
Staying healthy	This factor identifies a pattern of maintaining a good level of physical fitness and a healthy diet.

(Return to page 138: 6.2.1)

Appendix 10: Staff surveys – TR@W & R@W question item ratings



TR@W Questions 12 - 22

Strongly Disagree Disagree Somewhat Disagree Neither Disagree or Agree Somewhat Agree Agree Strongly Agree



TR@W Questions 23 - 33

Strongly Disagree Disagree Somewhat Disagree Neither Disagree or Agree Somewhat Agree Agree Strongly Agree



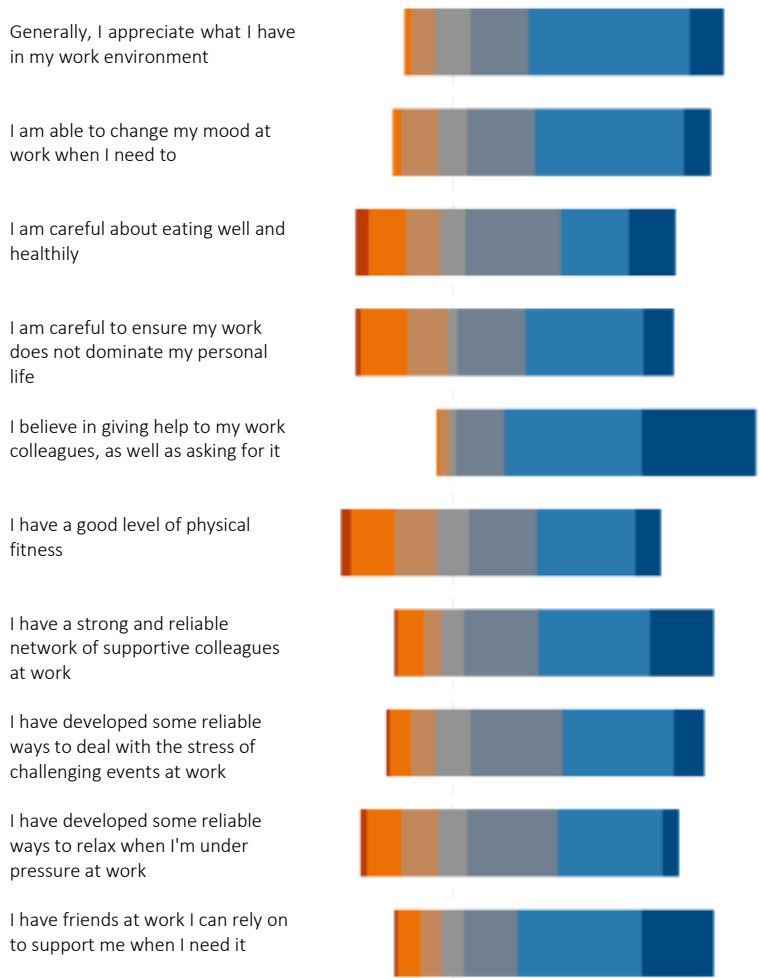
TR@W Questions 34 - 43

Strongly Disagree Disagree Somewhat Disagree Neither Disagree or Agree Somewhat Agree Agree Strongly Agree



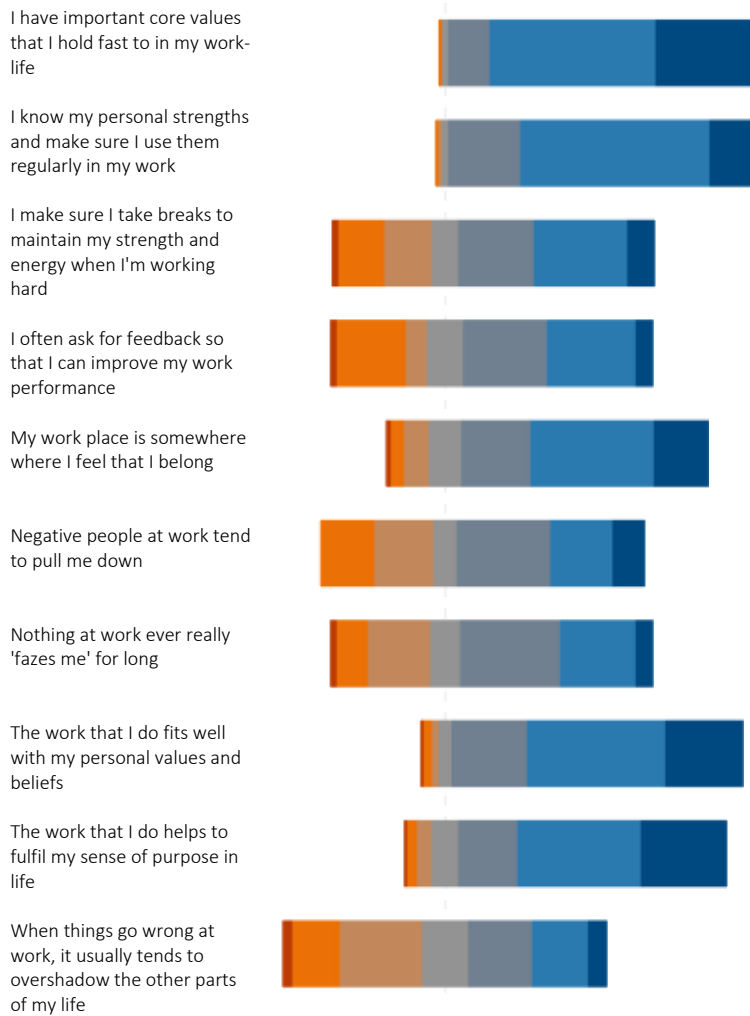
R@W Questions 1 - 10

■ Strongly Disagree
 ■ Disagree
 ■ Somewhat Disagree
 ■ Neither Disagree or Agree
 ■ Somewhat Agree
 ■ Agree
 ■ Strongly Agree



TR@W Questions 11 - 20

■ Strongly Disagree
 ■ Disagree
 ■ Somewhat Disagree
 ■ Neither Disagree or Agree
 ■ Somewhat Agree
 ■ Agree
 ■ Strongly Agree



(Return to page 143: 6.3.2)

Appendix 11: Intervention development – example use of selected BCT

BCT Category: Example use	Functions
<p>1.1 goal setting (behaviour) <i>Team agrees to increase the frequency of engaging in reflective learning practices over a specific period. Team set general parameters for amount of dedicated time and frequency that members will spend to contribute to team intervention.</i></p>	<p>Enablement, Persuasion</p>
<p>2.3 – 2.4 self-monitoring of behaviour / outcome(s) <i>Team members contribute reflections to dedicated shared team space. Members can self-monitor and track own frequency and content of contributes and review individual progress or positive actions. Other team members can also monitor and reflect on other members recordings to provide feedback to others and for own self-reflection, thus driving internal team behavioural change & reflective learning in action.</i></p>	<p>Education, Modelling, Persuasion, Environment restructuring</p>
<p>3.1 – 3.3 social support unspecified, physical and emotional <i>A social environment encourages teams to share experienced challenges in a space where other team members can be supportive and share advice as well as share positive experiences and successes following engagement with the reflective learning behaviour. Through the social design of the shared reflective team environment, physical & cognitive action to further engage in reflective learning behaviours in practice is enhanced.</i></p>	<p>Enablement, Modelling, Persuasion, Environment restructuring</p>
<p>4.1 instruction on how to perform a behaviour <i>Information and resources are provided to teams on how to engage in meaningful reflection e.g., guided by a reflective literature. Information and resources are shared prior to commencing an intervention and within the intervention itself for team members to access and improve reflective behaviours.</i></p>	<p>Enablement, Persuasion, Education, Training</p>
<p>8.1 behavioural practice - 8.3 habit formation <i>Team members are encouraged to engage in reflective behaviour on a regular basis through the design of the intervention. Teams agree to the frequency of contributes and engagement with the reflective intervention prior to commencement and share accountability within team. Team leaders remind and prompt teams to engage in the intervention to enhance frequency of reflection in practice.</i></p>	<p>Environment restructuring</p>
<p>12.2 restructuring the social environment <i>A shared space where teams can interact socially and engage in team reflective learning. The social environment should be easily accessible to all team members from various professions.</i></p>	<p>Enablement Environment restructuring</p>
<p>15.1 verbal persuasion about capability <i>A safe space where team members feel comfortable to share personal reflections. Other team members encourage & share experiences/outcomes to motivate the desired behaviour.</i></p>	<p>Modelling, Persuasion</p>
<p>15.3 focus on past success <i>Encourage team members to reflect and share previous successes following engaging in meaning reflective practice. Members can reflect on other member's logs and learn from shared experiences. Members can also reflect on previous log and provide an update on how they overcame specific issues.</i></p>	<p>Modelling, Persuasion</p>

(Return to page 183: 7.4.1)

Appendix 12: Intervention development – online team reflective journal

The screenshot displays the 'Team Reflective Journal - template' interface. It features a top navigation bar with the title and a main content area divided into several sections. On the left, there is a 'Study Documents' column containing various surveys and guides. The main area is organized into columns with vertical headings: 'Reflective Writing Guidance', 'What? (description of the event)', 'So what? (analysis of the event)', 'Now what? (moving forward)', and 'More about you... Feel free to ask questions tool'. Below these headings, there are example entries for each column, such as 'Example 02/11/21'. At the bottom, there are two callout boxes: one pointing to the 'Study Documents' section labeled 'Content added by researcher (study documents & resources)' and another pointing to the main content area labeled 'Journal entries displayed in descending chronological order'. A 'User instructions' callout points to the top navigation bar, and a 'Vertical column headings' callout points to the column headers. A 'Reflective question examples' callout points to the 'More about you...' section.

User instructions

Vertical column headings

Reflective question examples

Content added by researcher (study documents & resources)

Journal entries displayed in descending chronological order

User instructions

Welcome to your team reflective journal! You can access this space via web browser or the Padlet app at any time. To begin, please read the reflective writing guidance below to help you make the most of this journal. To post an entry, press the '+' button under the appropriate question heading, include your name & the date in the 'subject' line and then you can write or upload a video or audio recording to the text box below. You can also add a comment or respond to other entries. Please be mindful and respectful of others in your writing & do not include any patient or sensitive information. If you have any questions please email: (research er email). Thank you!

Reflective writing guidance

How to use the journal

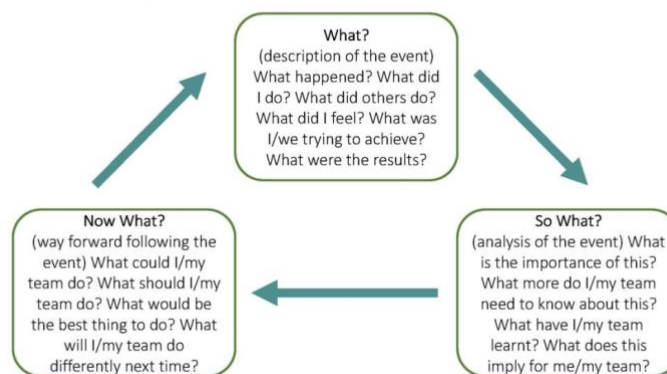
Take some time to reflect on your own experiences as well as other member's journal entries.

The first three questions ask you to reflect on any positive or negative situations that you have experienced throughout the day. Use the 'What' reflective cycle questions (image below) to guide your journal entries. You can contribute written, video or audio entries (25mb-limit), whichever you prefer. You might find it useful to refer to the images below of various personal and team characteristics, to consider including in your reflections.

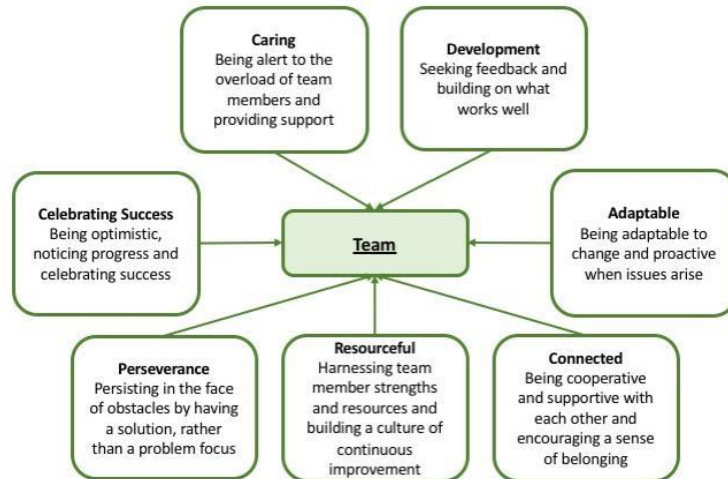
The final question is an opportunity for you to share and learn more about your team. Feel free to share as much as you would like or to ask the group questions and interact with other team members.

Reflective cycle guiding questions

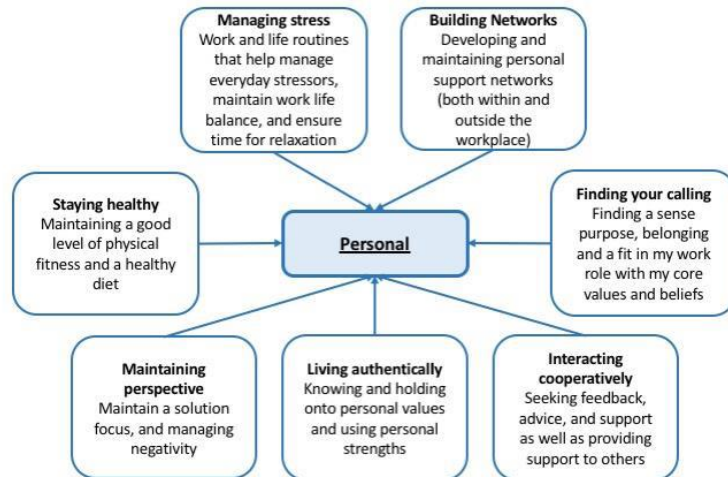
Rolfe et al.'s (2001) reflective model



Team Characteristics



Personal Characteristics



(Return to page 186: 7.5)

Appendix 13: Feasibility study – intervention evaluation survey



Evaluation Survey

You will be asked to respond to a number of questions about your experience of contributing to the online journal.

There are no right or wrong answers, we are simply interested in your experience, so please answer as honestly as possible. All of your data will remain completely confidential and anonymous you have the right to withdraw at any point. To do so, simply close the questionnaire webpage.

Please enter your unique participant ID number.....

Strongly Disagree	Disagree	Somewhat Disagree	Neither Agree or Disagree	Somewhat Agree	Agree	Strongly Agree
0	1	2	3	4	5	6

Item	Statement	0	1	2	3	4	5	6
1.	I have a good working relationship with people in my team	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
2.	I know the people in my team well	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
3.	I know about the interests of people in my team outside the workplace	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
4.	I would like to know more about the people in my team	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Item	Statement	0	1	2	3	4	5	6
5.	The journal was easy to access and contribute too	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
6.	I had enough time to reflect and contribute to the journal	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
7.	I frequently contributed to the reflective journal	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
8.	The reflective questions were easy to understand	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
9.	Contributing to the journal fit with my daily activities	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
10.	I had enough time to complete the intervention questionnaires	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
11.	I have benefited from taking part in the team reflective journal	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
12.	My team has benefited from taking part in the reflective journal	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Evaluation Survey _v1.0



13. What did you like about the team reflective journal?

14. What did you not like about the team reflective journal?

15. Any other comments?

Debrief

Thank you for taking the time to complete this study evaluation survey. This research study aimed to explore ways to promote resilient team practices within the healthcare setting and to assess the feasibility of the online team reflective journal in practice.

Remember all data will remain completely confidential, if you have any outstanding questions or would like to withdraw your data at a later date please get in touch using the email below and cite your participant identification number in order for us to identify your data.

Name of researcher: Christopher Thomas

Contact email: c.thomas@worc.ac.uk

Thank you for your participation!

Evaluation Survey _v1.0

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Appendix 14: Feasibility study – follow-up focus group interview schedule



Interview Schedule

Report

My name is Christopher Thomas, I am a PhD student at the University of Worcester. I am conducting this interview as part of my research project.

Purpose

I would like to ask you some questions about your experience of the research study I previously spoke to you about regarding participation in an online team reflective journal. Some of you here may have participated in this and some may not have; either case is fine as I would like to ask some evaluative questions about the research study as a whole and provide an opportunity for you to share any further recommendations or ideas about how this team activity could be used in practice.

Timescale

The interview should take no more than 60 minutes.

Is it ok to continue?

Ethical approval & confidentiality

Have you had time to look at the information sheet and the consent form?

Have you read and signed the consent form?

I would like to make you aware that you are not obliged to participate in this study. You can withdraw at any time during the interview. This includes declining to answer any of the questions. After this meeting, the interview will be written up word for word and the meeting recording will be destroyed. All transcripts will be anonymised within 14 days from this interview, which means that we will not be able to identify you by looking at the transcripts. You are able to withdraw your data up to 14 days after this interview by contacting me via your email/quoting your email address used to sign-up for this study. Please remember that the content of this interview should not be discussed outside of this session. Any disclosures of illegal activity, or activities that require escalation, will need to be reported to the appropriate authorities.

Do you have any questions before we start?

Are you happy to proceed?

RS4_Staff Focus groups_ Interview schedule

Interview Questions

Topics Questions/prompts

Section 1: Non-intervention participants & intervention participants questions

Recruitment

Why did you agree/not agree to participate in this study?

- Were there any obstacles to participating?
- Was this study initially of interest to you/team?
- Would you recommend any changes to how your team was approached an encouraged to participate?

What was your experience of the initial briefing session?

- Was it informative/ relevant?

Were there any challenges to gaining access to the intervention?

Other comments / questions?

Section 2: intervention participants questions only

Intervention content

How relevant was this team activity to you/your team?

- Were the guidance notes and examples clear and informative?
- How appropriate were the reflective questions?
- What aspect of the team journal did you find most beneficial? Writing/ reflecting on your own entries or others?

Intervention design

Did the intervention fit within your day-to-day role?

- Did you have enough time to contribute on regular basis?
- How frequently did you contribute to the journal? When/where/ why?
- Was the participation length of 4-week too long? Not long enough?

What are your thoughts on the journal by default being anonymous?

- Would you have preferred to be identifiable?

Would you have preferred this intervention to have been face-to-face rather than online-only?

- Was accessing the journal online an issue?
- Do you think providing resources/equipment to access the online journal would be helpful?

Data collection procedures

What has been your experience of completing the resilience surveys?

- Was the online format accessible?
- Were the surveys too time-consuming?

Potential for success

Have you/your team benefited from taking part in the team reflective journal?

- What aspect of the intervention did you find most beneficial?
- As a team would you want to participate a similar activity?
- Do you feel that you have a stronger team relationship based on engaging in this team activity?

[END PAGE]