Title Page

Title

Costing resource use of the Namaste Care Intervention UK: A novel framework for costing dementia care interventions in care homes.

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Abstract

Objectives: To develop a representative full cost model for a UK version of the multi-component, non-pharmacological Namaste Care intervention for care home residents with advanced dementia.

Design: The Namaste Care Intervention UK comprises multiple individual cost components, and a comprehensive list of all possible resources that could be expended in each cost component formed the initial stage of the cost model development. Resource use was divided into three key areas: staff, capital and consumables. Representative costs were identified for each of the possible resources, with a standard approach being used for all resources within each of the three key areas.

Assumptions were made regarding the number and duration of sessions, group size, involvement of different staff members, and additional activity before and after a session, as these all have an impact on resource use and hence cost. A comparable 'usual care' session for residents not receiving Namaste Care was also costed to enable the 'additional' cost of delivering Namaste Care to be calculated.

Results: The full cost model indicates that Namaste Care Intervention UK costs approximately £8-£10 more per resident per 2-hour session than a comparable period of usual care. However, positive impacts on resident and staff well-being resulting from receiving Namaste Care will also have their own associated costs/benefits which may negate the 'additional' cost of the intervention.

Conclusions: The cost model provides the first opportunity to investigate the full costs associated with Namaste Care, and will be refined as additional information is captured during subsequent phases of the research.

Introduction

An estimated 46.8 million people are living with dementia, with a global economic cost currently exceeding US $800 billion (Prince et al., 2015). The social care cost of dementia in the UK has been calculated as £10.3 billion which is borne by Local Authorities, people living with dementia, and their families (Alzheimer's Society, 2014). Approximately a third of people living with dementia in the UK live in care homes (Alzheimer's Society, 2016). Advanced dementia and frailty are common conditions that care homes need to manage on a day-to-day basis (Hancock et al., 2006). Developing evidence-based person-centred interventions to improve quality of life and care for residents is a primary concern for many working in the field (Brooker & Latham, 2016). However, the cost of implementing such interventions can be a barrier. Some new interventions require specialist equipment or practitioners, making them expensive to implement; sometimes resource use is less obvious.

Costing non-pharmacological interventions is far more complex than costing a new drug treatment. For instance, is a music session more or less expensive to run than a reminiscence session? Moreover, with potential differences in costs and benefits, which would be better value for money? Such questions illustrate the importance of understanding the cost implications of providing interventions if limited resources are to be used wisely. The primary aim of this paper is to cost a UK version of the Namaste Care intervention by developing a representative full cost model including both fixed and variable costs. The underlying methodology described within this paper could be widely adopted for other complex (non-pharmacological) interventions. Such costings could support decision-making within a range of care settings.

Namaste Care is an innovative, multi-component intervention developed in the US as a way of caring for people with advanced dementia, taking its name from the Hindu term meaning 'to honour the spirit within' (Simard, 2013). It aims to support quality of life through sensory stimulation, shared activity, social interaction and comfort, including formal pain assessment

and increasing care staff awareness and responsiveness to distress. A Namaste Care session can include physical and sensory activities aimed at stimulating the senses and developing emotional connection. Activities include hand massage, soft music, the use of different aromas, soft blankets, and food and drink. Sessions are recommended to take place in a dedicated room where the whole ambience can be controlled to provide a calm, relaxing space for residents. Namaste Care is intended to be integrated into everyday care with two-hour sessions run every morning and afternoon. Training care home staff as Namaste Care workers aims to strengthen relationships between staff, residents and families.

The costs of Namaste Care have not been calculated previously. The authors are investigators on a three-year implementation research project developing a 'standard' Namaste Care Intervention UK (NCI-UK) and exploring barriers and facilitators to implementation. Namaste Care has been described as *"cost neutral"* as it does not require additional staff, space or expensive equipment (Thompsell, 2009). Many resources required for Namaste Care (such as pillows, music and toiletries) can be found within a care home and some homes may receive donated items. However, using existing resources means that the true cost of Namaste Care is hidden, making efficient allocation of resources difficult to establish.

The NCI-UK cost model assumes that everything required for a session is included in any resource use calculations, including resources that already exist within a care home. This paper presents a model designed to provide a robust framework for costing all resources used in Namaste Care sessions. The model may be populated with hypothetical (estimates of costs when resource use is not directly measurable) and real data (based upon research interventions and cost questionnaires), and can be updated as assumptions change or new data collected. As the research project progresses, estimates will be updated using data gathered from care homes about actual delivery costs incurred. Costs generated by the

model will also be used in conjunction with other aspects of the research project investigating the impact of NCI-UK on resident and staff outcomes such as medication, hospital admissions and resident behaviour. These could all have a financial implication, making it possible to explore the potential cost benefit of delivering NCI-UK sessions.

Overview of the Namaste Care Intervention UK

The NCI-UK is a standardised, evidence-based refinement of the original Namaste Care intervention incorporating a review of research evidence and current UK practice relating to the elements of Namaste Care outlined by Simard (2013). The evidence review was undertaken during the initial phases of the research project and is reported separately. The emerging NCI-UK was refined through engagement with Namaste Care practitioners and reviewed by the project's Steering Group which included Joyce Simard (the originator of Namaste Care), a Namaste Care trainer, care home providers and people directly affected by dementia.

Table 1 outlines the components of the NCI-UK. The first grouping relates to preparation and management of 'The Namaste Care Space'. The second grouping includes 'Basic Activities' that are core components of a NCI-UK session. As sessions can be adapted for each group of residents, not all components will be part of every session. Some components may require involvement from members of the wider staff team. For example, snacks and drinks may be prepared by catering staff, or towels by housekeeping. The third grouping of 'Individualised Activities' consists of components specific to individual residents. Each resident is assessed to see which components are appropriate to their needs. Some care homes already have access to pet animals, robotic animals or Snoezelen equipment. These can be incorporated into a NCI-UK session, but are not essential and so are not included in the cost model presented here.

-------Insert Table 1 here------

Methods

The conceptual cost model

The approach to costing a NCI-UK session is based upon the standard approach used in health economics studies. This treats resources (such as staff time) as physical units that are expended when providing the intervention (Glick et al., 2014). These physical units are costed using 'price weights' reflecting the level of expenditure required to purchase them in a care home. As NCI-UK sessions are provided within a care home, residents will usually receive the intervention for free at the point of delivery. However, NCI-UK sessions involve care home resources. The purpose of the cost model is, therefore, to directly measure all economically relevant and significant resources that may be expended in providing the NCI-UK. Accurate and timely information on the full costs of NCI-UK is important for decision-makers within care homes because it will estimate:

- whether adoption of the intervention is affordable;
- how resources are allocated and adjusted between care-providing activities;
- how resource use is likely to change if NCI-UK provision is modified.

The model estimates the cost of using the full range of physical inputs required to provide NCI-UK as presented in Table 1. To do so, a costing methodology was adopted that allows relevant price weights to be assigned to all resources. The resulting costs may be estimated in terms of staff, capital and consumable costs, and summed to generate total costs per resident and per session, based upon the NCI-UK session provided.

Although the focus of this article is the development of a full cost model, the marginal cost of providing a NCI-UK session is also investigated by comparing it with the cost of providing a

period of ‘usual care’. This is the care that residents would normally be receiving in a care home if they were not participating in a NCI-UK session.

Developing the cost model

To cost any non-pharmacological intervention, the first task is to articulate the resources expended during its delivery. As the NCI-UK compromises multiple components, the cost model includes a variety of resource types. Construction of the model began by compiling a comprehensive list of all possible resources that could be expended. This was verified by reviewing existing Namaste Care literature for associated activities and resources, including resources not linked directly to specific components.

Adopting the standard approach to economic costing (Drummond et al., 2015), resource use was divided into three key areas: staff, capital, and consumables. When calculating costs, national estimates were sought for the price of each resource.

Staff costs – While it is acknowledged that the overall cost of an intervention encompasses the costs associated with the implementation process itself (Saldana et al., 2014; Hoomans & Severens, 2014), the indirect costs of planning and training were not included in the cost model. The focus of the cost model reported in this paper is staff involvement during the delivery phase of NCI-UK.

For the purpose of the full cost model it was necessary to calculate the cost of the staff time associated with a NCI-UK session. This does not necessarily mean that additional staff time is required to deliver NCI-UK sessions, but that sessions require a certain amount of staff time. When calculating staff costs per session, only direct costs were included encompassing pre-session preparation, post-session clear-up activities, and staff delivering the intervention to residents. Pre- and post-session activities could relate to specific components such as preparing snacks and drinks, or could be the act of accompanying

residents to and from a session and helping them to settle in to their surroundings. As part of the ethos of Namaste Care is that it encompasses all staff rather than being the remit of one or two individuals, these activities could potentially involve any member of staff from the administrative and maintenance staff through to the management team.

Initial internet research was unable to identify previous estimates of staff costs for the job roles relevant to NCI-UK. Consequently, average salary information was obtained from a recruitment website (www.indeed.co.uk). Additionally, job advertisements were examined to obtain information about holiday allocations and the number of hours expected to be worked per week, which is important when calculating the cost of face-to-face sessions. To obtain the actual cost of employing staff in each role, salary on-costs were calculated using the approach suggested by the Personal Social Services Research Unit (PSSRU, 2016). Salary on-costs include employment related costs for the employer such as benefits and taxes. It takes an employee's National Insurance allowance, employer's National Insurance contribution rates, and employer's contribution to superannuation into account. The use of this method is standard practice in economic costing studies.

(1) *((annual salary - employee's National Insurance allowance) x employer's National Insurance contribution rate) +*
(annual salary x employer's superannuation contribution)

The final salary figures were adjusted for holiday allocation and hours worked per week to generate an hourly rate of pay for each staff type and grade.

(2) $\frac{\text{(annual salary + on-costs) / (52 weeks – (holiday allowance / 5))}}{\text{hours worked per week}}$

Capital costs – This included understanding costs associated with the area of the care home set aside for Namaste activity. As with staff costs, pre- and post- session activities such as setting up or clearing the Namaste Care space have associated capital costs and so were included in the model. Internet searches identified a range of prices for room hire in care homes or related care settings such as hospices or day centres. In keeping with the costing

approach, these were converted into hourly costs using an assumption of an 8-hour day. To make the costings representative, a mid-range cost was selected. Comparing multiple prices from different sources gives reassurance and confidence in the selected cost, as it was chosen with knowledge of the wider context.

Consumable costs – Delivering Namaste Care involves many different items which all have associated costs. Due to the range of resources expended in NCI-UK, a standard approach was used to create a complete set of consumable costs for all resources. To ensure cost estimates were representative, a sample of eight care home staff was asked where they buy resources. This was supplemented by an internet search to identify care home suppliers who could provide national prices. The identified websites were searched systematically to find a minimum of six to eight prices for each item. For some items, different options were explored depending on the level of provision ('Minimum', 'Regular' or 'Enhanced') as illustrated in the following examples:

- Soap – The minimum acceptable level of provision would be a generic bar of toilet soap, with soap from a known brand likely be more expensive (regular). To promote reminiscence a Namaste Care worker may purchase a recognisable scented bar (enhanced).
- Chair for residents – As a minimum, residents with dementia need a comfortable chair with arms and no wings. However, an adjustable chair would be preferable, particularly a motorised rise and recliner, which helps mobility and support (regular). At the highest level of provision more expensive, posture-specific chairs may be used (enhanced).

Depending on the item, it does not always follow that cost will increase with the level of provision. A further complication is that some consumables are sold in packs of different sizes making it difficult to directly compare prices. To address this, prices were converted

into a common rate such as the price per bar of soap. As with capital prices, these comparable prices were used to select a mid-range option as a reasonable estimate, rather than looking at a single price in isolation with no context.

Cost model assumptions

Consumable resources

The cost model was designed on the assumption that a block of NCI-UK sessions would be delivered for three months (91 days). Sessions should be delivered twice a day, seven days a week, equating to 182 separate sessions across the three months. These figures were used as the basis of the cost calculations. Long-lasting consumables (such as a blanket or chair) can be used during multiple NCI-UK sessions whereas disposable ones (such as food and drink) need to be replaced every session. For the cost model, it was assumed that all items were bought new at the start of any three-month period and replaced as necessary during that time. Therefore, cost estimates for long-lasting consumables are based on their use over the initial 182 sessions. Although this may not be a reasonable assumption for some items (such as a chair), the approach allows decision-makers to isolate each session as a separate cost event, making analysis easier to perform. If more complex analysis is required, the 3-month assumption may be relaxed.

For some consumables (such as a music player) only one item is required per NCI-UK session. For others (such as pillows) one item is required per resident. In the latter case, it was assumed that each resident had their own item, but all residents had the same type. Additionally, some consumable items may be used for more than one component. For example a wash bag for toiletries could be part of hand and face washing, feet washing, hand massage, foot massage, individual scents and hair brushing. If a NCI-UK session delivers more than one of these components, duplicate items would not be required.

Additional assumptions

Other assumptions about NCI-UK sessions are:

- there are eight residents in a session;
- one member of staff delivers each session;
- one family member is present during a session;
- a session takes place in a dedicated Namaste Care room;
- a session lasts two hours;
- pre-session preparation takes 30 minutes for staff involved in setting up the Namaste space or specific components, and 15 minutes for any staff helping to bring residents to a session – this may include senior staff and managers;
- post-session clear-up takes 30 minutes for the Namaste Care worker and 15 minutes for all other staff.

These assumptions enable a representative cost to be calculated, especially on a per-resident, per-session basis. All assumptions can be adjusted within the cost model to explore different options or reflect data relating to the actual delivery of NCI-UK which will be captured during later phases of the research project.

Results

The cost model enabled the session costs for each aspect of NCI-UK to be calculated, taking the three levels of provision into account. Based on the assumptions outlined previously, Table 2 shows the staff, capital and consumable costs for a session, granulated by job role, part of session, and component respectively. The consumable costs are based on the unlikely scenario of all components being delivered during the same NCI-UK session, and do not account for duplication of resources. These costs should therefore be viewed as the maximum costs for NCI-UK.

-------Insert Table 2 here------

Session costs for a Namaste Care Intervention UK session and a 'Usual Care' session

Namaste Care is designed to be delivered where residents would usually be receiving care – in this case, a care home. If residents were not in a NCI-UK session they would still be receiving everyday 'usual care' within the home. Some components from a NCI-UK session could also be provided as part of usual care. In calculating the cost of NCI-UK it is therefore important to also calculate the cost of usual care.

As part of the wider research project, observations of usual care were conducted in six participating care homes. These observations involved assessing levels of engagement of residents over a two-hour period, part of which included recording the types of activity or intervention available to residents. This enabled common components to be identified as being offered in different examples of usual care, such as background music, drinks, and having items to touch and hold. Based on these observations, Table 3 shows which components may be provided as part of usual care during a comparable time period for a comparable size group of residents. It is acknowledged that outside of a NCI-UK session other types of usual care may take place involving additional resources and therefore be more expensive, for example an art session or pet therapy. For the purpose of this paper, these forms of usual care would be viewed more as an alternative activity rather than 'background' everyday usual care. While each different type of activity could potentially be costed, the example usual care session chosen for this paper is intended to represent the type of care provided in any care home without any specific activities being provided. Assumptions for usual care included:

- there are eight residents supported by one member of staff;
- care takes place in a lounge area or similar;

- the usual care period lasts two hours, but space is required for longer before and after the period to ensure all residents are present for the full two hours;
- fewer staff, and a different mix of staff, are required to help bring residents to and from usual care or prepare and clear up specific components.

Using the cost model, full staff, capital and consumable costs were calculated for both a NCI-UK session and a comparable usual care period, with Table 3 indicating which components were applicable in each. The overall consumable cost for a session is not a straightforward sum of the individual component costs shown in Table 2. Instead, it reflects only the relevant components for the session and accounts for duplication of consumables across components.

Table 3 indicates that the example NCI-UK session costs approximately £8-£10 more per resident than a comparable period of usual care. Part of the cost difference stems from the different staff mix required. While NCI-UK sessions require more staff time overall, it is likely that in practice staff would be reassigned rather than additional staff needing to be employed, especially because of the relatively small amounts of time involved for staff not actually delivering the sessions. Although beyond the scope of this paper, additional staff time for NCI-UK may be counterbalanced by savings in staff time elsewhere as a consequence of the sessions. For example, if NCI-UK sessions have an impact on resident behaviour, wellbeing and skin condition, there may be a reduction in staff time related to addressing these issues outside of the sessions. Additionally, staff turnover and sickness could be affected, which would also have an impact on staff availability. The wider project will explore some of these aspects of the NCI-UK sessions.

-------Insert Table 3 here------

Discussion

Developing this innovative cost model has required substantial work to identify and cost the components involved in delivering NCI-UK. This has resulted in a model that illuminates the specifics of NCI-UK, but one that can also be applied to other non-pharmacological interventions in similar care settings.

With regard to the research project's next steps, the cost model is in a flexible and easy-to-use format (an excel spreadsheet), meaning that as data from project becomes available it will be possible to adjust dynamically from 'intended' application to real-life implementation. This will enable us to identify how these changes affect costings. For example, if the duration of a NCI-UK session or the number of residents differed in practice, the cost model would automatically calculate the new session costs. Similarly, any changes to individual resource costs would be propagated through the model. Consequently, the cost model is flexible enough to calculate costs for sessions that have already been delivered and those still in the planning stages, which could enable care homes to compare different sessions using their own individual parameters. Such functionality has hitherto been unavailable, making the cost model an innovative tool with regards to the delivery and implementation of NCI-UK beyond the end of the project.

By using the cost model to compare NCI-UK with a comparable period of usual care we have illuminated the real cost of the intervention to care homes. This full cost is often hidden at the point of delivery, and thus prone to over or under-estimation by service providers, commissioners and policy-makers. Providing such costings will aid decision-making and better elucidate the work that staff and services do in the minutiae of day-to-day practice, something which can be obscured by descriptions such as 'person-centred care', 'psycho-social care' or 'non-pharmacological intervention'.

Costings indicated that, per resident, delivering the example NCI-UK session is £8-£10 more expensive than providing usual care for the same duration. It is possible that this additional

cost could be an important factor for care home managers when deciding whether or not to implement NCI-UK sessions within their care home. However, the additional cost must be seen in the context of the risks associated with not delivering the intervention, as any detrimental effects to resident and staff well-being will have their own associated costs. This is particularly so for NCI-UK as it is an intervention for people with high needs, focussed around creating a safe, inviting space for the individual. For example, an increase in falls, hospital admissions, behaviour that harms a person or others, and a need for increased supervision are all potential implications of favouring usual care over Namaste Care, and may well result in costs that exceed the additional cost of providing NCI-UK.

It should also be appreciated that while the NCI-UK and usual care sessions used in this paper are based on experience and observation, they are still examples and may not be an accurate reflection of actual care delivery in some care homes. By using and refining the model based on practical implementation of NCI-UK in later phases of the project and considering the costs associated with resident and staff outcomes as a consequence of the NCI-UK sessions, it will be possible to more accurately explore the overall costs and benefits of NCI-UK.

The above features have important implications for future evaluations of non-pharmacological interventions in care homes and similar settings. The cost model can be easily adapted for different interventions, comparisons with a variety of ‘usual care’ scenarios, and comparison between interventions. Until now, such functionality has not been available, meaning that evaluations have used static cost estimates, limited costing parameters or been unable to sufficiently explain to decision-makers the financial aspects of intervention impact. Moreover, by enabling comparisons between intervention costs and the hidden costs of *not* providing an intervention, understanding is improved regarding what a particular intervention brings.

Finally, the NCI-UK cost model provides decision-makers with useful estimates of delivery costs, which could be used to justify whether or not NCI-UK sessions should be introduced in different situations in terms of their financial viability. However, it is acknowledged that the initial version of the model has limitations. Due to the lack of detail available via the recruitment website, some estimates of staff costs may include people with the same job title in different work settings. These staff costs may not, therefore, provide an accurate reflection of costs for people working in a care home. However, actual salary costs within specific locations can be substituted.

In terms of consumables it is recognised that the cost model is theoretical, and in practice staff may be restricted to specific suppliers, or conversely may be able to shop around for better prices. It is also highly likely that care homes will use existing resources or receive donations rather than buying new items. Care homes are also unlikely to dispose of or replace many durable items at the end of a 3-month period. These factors suggest the potential for financial savings above that assumed by the cost model.

Subsequent phases of the research project will collect information from participating care homes regarding their actual implementation of the NCI-UK, helping to refine the cost model and the assumptions made within it. This will result in a more accurate, evidence-based cost model reflecting the practical implementation of the NCI-UK, and one which should be usable by decision-makers in the field.

Conclusions

NCI-UK, and indeed Namaste Care more generally, has not previously been costed, and thus some care homes may be dissuaded from implementation by the perceived expense of the resources required. Therefore, although there is room for improvement and refinement, the initial resource cost model provides the first opportunity to investigate the full costs associated with Namaste Care in a structured way.

Additionally, while the cost model has been developed specifically for costing NCI-UK sessions, the underlying principles and methodology could be adopted and adapted to explore the costs of delivering other complex (non-pharmacological) interventions in care homes and more widely.

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Table 1: An overview of the components of the Namaste Care Intervention UK

	Component	Detail
The Namaste Care Space	A beginning and an end	Participants are welcomed individually into a relaxing and calm space at the start of a session. Towards the end of a session participants are activated through changes in the music, aroma and lighting.
	The overall ambience	The space is prepared in advance and attention paid to creating a calm, warm, welcoming and safe atmosphere.
	Natural light and the ability to alter light levels	Strong light levels are avoided, and it should be possible to adjust light levels. Additional atmospheric lighting may be used.
	Specific and calming aroma	Natural aromas are used rather than artificial ones.
	Background sounds or music	Gentle and relaxing sounds or music are used to create an atmosphere rather than providing entertainment.
	Background visual stimuli on a screen	Gentle and relaxing images are used to create an atmosphere rather than providing entertainment.
Basic activities	Physical comfort	Comfortable seating is provided. Pain assessments are undertaken with individual participants prior to sessions. Levels of comfort are monitored throughout.
	Expressive touch	Closeness is communicated using touch, through activities such as hand massage, foot massage, hand and face washing, foot washing, and hair brushing.
	Food treats	Opportunities are created so participants can experience favourite tastes, sensations and textures.
	Drink/hydration	Opportunities are created so participants can experience favourite drinks and ice lollies.
	Tactile stimulation	Opportunities to experience different touch sensations are offered, including soft blankets and fabrics.
	Nature	Opportunities are created so participants can engage with and experience nature such as plants.
Individualised activities	Involvement of the family	Families and visitors are actively welcomed to join the Namaste Care Intervention UK sessions.
	Personalised music	Playlists that are significant to individual participants are incorporated into sessions where appropriate.
	Significant items	Connection and interaction is enhanced by using objects which are significant to individual participants.
	Use of dolls	If participants enjoy interacting with or holding dolls then this is incorporated.
	Use of animals	If participants enjoy interacting with or holding animals (live or toys) then this is incorporated. If in-house or visiting animals are available, these can be included in Namaste Care Intervention UK sessions. Robotic simulations can be used if already available.
	Snoezelen/multi-sensory equipment	If sensory equipment/Snoezelen environments are already available, they can be used in Namaste Care Intervention UK sessions.

Table 2: General Namaste Care Intervention UK session costs based on assumed resource use across 182 sessions (two sessions per day over a three-month period)

	General session assumptions		
Number of residents	8		
Number of staff in session	1		
Number of relatives in session	1		
Location	Dedicated room		
Duration	2 hours (plus preparation & clear-up)		
	Staff costs per session		
	Minimum (M)	**Regular (R)**	**Enhanced (E)**
Care staff (1 Namaste Care Worker for 3 hours, 1 other Care Staff for 30 minutes)	£41.80	£37.62	£73.62
Director of Nursing (30 minutes)	£11.14	£11.14	£11.14
Home Manager (30 minutes)	£10.05	£14.92	£14.92
Laundry/Housekeeping Staff (45 minutes)	£8.76	£8.76	£8.76
Kitchen Staff (45 minutes)	£9.32	£9.32	£9.32
Maintenance Staff (30 minutes)	£9.67	£9.67	£9.67
Administrative Staff (30 minutes)	£8.67	£8.67	£8.67
Total	**£99.41**	**£100.09**	**£136.10**
	Capital costs per session		
Pre session	£12.50		
During session	£50.00		
Post session	£12.50		
Total	**£75.00**		
	Consumable costs per session		
	M	**R**	**E**
The overall ambience – general room set up	£4.47	£4.86	£4.86
Specific and calming aroma	£0.04	£0.42	£0.42
Background sounds or music	£0.36	£0.41	£1.18
Background visual stimuli on a screen	£1.32	£1.32	£2.15
Physical comfort – seating	£11.20	£36.87	£60.08
Physical comfort – comfort and positioning	£2.18	£0.63	£0.93
Physical comfort – pain assessment	£0.43	£0.43	£0.43
Expressive touch – hand massage	£6.73	£6.84	£7.54
Expressive touch – foot massage	£4.14	£4.24	£4.94
Expressive touch – hand and face washing	£10.95	£11.16	£11.45
Expressive touch – foot washing	£2.04	£2.39	£2.68
Expressive touch – hair brushing	£0.38	£0.38	£0.38
Food treats	£12.22	£13.21	£18.90
Drink/hydration	£18.83	£19.98	£24.89
Tactile stimulation – soft blankets	£1.05	£1.05	£1.05
Tactile stimulation – rummage box	£0.14	£0.14	£0.14
Tactile stimulation – textured items	£1.32	£1.32	£1.32
Nature	£0.05	£2.68	£0.05
Personalised music	£0.97	£0.33	£1.10
Significant items – individual scents	£5.78	£5.78	£5.78
Significant items – memory box	£1.32	£1.32	£1.32
Significant items – pictures to share	£0.11	£0.11	£0.11
Significant items – reading aloud	£0.04	£0.04	£0.04
Use of dolls	£2.77	£2.77	£2.77
Use of animals – soft toys	£1.01	£1.16	£1.16
Total cost of delivering ALL components in a session	**£89.83**	**£119.83**	**£155.67**

Table 3: Costs for example Namaste Care Intervention UK and Usual Care sessions

Components	Example Namaste Care Intervention UK session			Example Usual Care session		
The overall ambience – general room set up	Yes					
Specific and calming aroma	Yes					
Background sounds or music	Yes			Yes		
Background visual stimuli on a screen	Yes			Yes		
Physical comfort – seating	Yes			Yes		
Physical comfort – comfort and positioning	Yes					
Physical comfort – pain assessment	Yes					
Expressive touch – hand massage	Yes					
Expressive touch – foot massage						
Expressive touch – hand and face washing						
Expressive touch – foot washing						
Expressive touch – hair brushing	Yes					
Food treats	Yes					
Drink/hydration	Yes			Yes		
Tactile stimulation – soft blankets	Yes			Yes		
Tactile stimulation – rummage box				Yes		
Tactile stimulation – textured items	Yes					
Nature	Yes					
Personalised music						
Significant items – individual scents	Yes					
Significant items – memory box						
Significant items – pictures to share	Yes					
Significant items – reading aloud						
Use of dolls				Yes		
Use of animals – soft toys	Yes			Yes		
Costs	**M**	**R**	**E**	**M**	**R**	**E**
Staff	£99.41	£100.09	£136.10	£52.94	£51.89	£81.89
Capital	£75.00	£75.00	£75.00	£75.00	£75.00	£75.00
Consumables	£63.36	£91.94	£120.55	£40.44	£67.86	£97.58
Total cost per session	**£237.78**	**£267.04**	**£331.65**	**£168.38**	**£194.75**	**£254.47**
Total session cost per resident	**£29.72**	**£33.38**	**£41.46**	**£21.05**	**£24.34**	**£31.81**
NCI-UK compared to Usual Care	**M**		**R**		**E**	
Net difference in costs per session	**£69.40**		**£72.29**		**£77.18**	
Net difference in costs per session	**£8.67**		**£9.04**		**£9.65**	