ISSN: 2641-1911
DOI: 10.33552/ANN.2022.13.000810
Archives in Neurology & Neuroscience
Iris Publishers

Research Article

Nurses' Perspective on Using iPads as Part of Person Centered Care in an Acute Hospital Setting

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Received Date: November 01, 2022

Published Date: November 14, 2022

Abstracts

The SARS COVID 19 pandemic has uncovered unprecedented utilisation of technology in healthcare, especially in using technology to support dementia patients, while improving nurses' job satisfaction in the general and isolation wards. The use of iPads in acute hospital setting, as part of person centred care model for dementia has not been widely studied. While the hospitalised patients were isolated to minimise risk of infections, the social isolation may cause undesirable cognitive and functional decline. Being able to actively engage the older patients living with dementia in the hospital with iPads showed an improvement in the behavioural symptoms and quality of life. Using iPads as a remote virtual platform also improved social interactions between patients and their families/ caregivers. The ward nurses gained benefit from using iPads to engage their patients, with better job satisfaction and reduction in their stress levels while at work.

Keywords: Dementia; Hospital; Person centered care; Ipad; Nurses' perspectives

Introduction

According to World Health Organization, the number of persons living with dementia (PWD) is estimated to reach 82 million worldwide by 2030 [1]. Locally in Singapore, by 2030, there will be more than 100,000 people living with dementia [2]. Given the current lack of curative or disease modifying treatment for dementia, the PWDs, their families/ caregivers and health care workers face challenges daily to manage the relentlessly progressive loss of function, cognition and emergence of behavioural symptoms. Elderly patients with cognitive issues admitted to the hospital are at risk of developing delirium due to unfamiliar environment, the absence of their loved ones, new medical/ surgical issues or medication adverse effects. Delirium may result in worsening of cognition, mood, behavioural symptoms and decline in function. Therefore, it is essential to identify strategies to reduce boredom and loneliness in the hospital with an aim to improve mood and overall wellbeing. Behavioural symptoms like Anxiety, agitation, aggression are associated with cognitive decline and are often indicative of communication breakdown resulting from unmet needs and environmental stress [3]. For the patients living with dementia, hospitalisations may result in poor care, loss of dignity, worsening of cognition, function and resulting in nursing home placement [4]. Technology is used in many forms in healthcare, and will likely see an increasing trend as healthcare become more

expensive and errors are frowned upon. Utilising technology for documentation saves time, provide transparent and improve accuracy of documentation. Technology also allows rapid access to information, provide virtual and remote social interactions, which have all taken an unprecedented role during this current COVID 19 pandemic. Technology can also be used to conduct therapies and used as entertainment for individuals in the community and institution setting [5]. Technology allows people to stay in touch, despite the physical distance keeping them apart. This is especially relevant during this pandemic where social contacts are minimised to reduce cross infection [6].

With an ageing population and rapid increase in the number of PWDs, the use of technology has provided improvement in care and enhanced quality of life for the PWD. Technology also provided an adoptable means of virtually engaging PWDs and their relatives, to improve social interactions and engagement with reduction in agitation and increased enjoyment for the PWD [7]. Research conducted on portable devices such as iPad had been shown to have positive impact on seniors' quality of life [8]. For the elderly with visual impairment, iPad are as effective as traditional visual aids by directly magnifying the font or image on the screens [9]. iPads thus allow the individuals to fully focus their attention on the screen, without having to rely on availability of visual aids. This is particularly important for the elderly PWDs who often misplace or forget to put on their visual aids. iPads were also used for reminiscence therapy, visual arts, games, puzzles, music therapy, thereby, providing cognitive stimulation and social interaction [10]. Portable electronic devices are convenient and serve as a platform for the elderly to interact with their loved ones virtually, especially the elderly in institutions during the pandemic, since strict restrictions on visitations were imposed to reduce infections. Interacting virtually with family and friends is important as social isolation has been associated with depression and cognitive decline among the elderly [11].

However, iPads are not necessarily appropriate for everyone, their use should be based on individuals' preferences and abilities. Persons with dementia may not understand or be able to learn to use a device with touch sensitive screens, the various apps may be confusing, and ability to maintain internet connectivity may be inconsistent. Therefore, iPads should be chosen selectively for individual PWDs of different dementia severity with different needs/ interests [12].

In the recent years, computers and mobile devices like iPads have been used in day-care centres and nursing homes to conduct activities. However, there is no published data for use of iPads as means to conduct therapies in an acute hospital setting, neither are there data on the nurses' perception of using iPads as part of patient care nor the usefulness of iPads in reducing nurses' stress while caring for the elderly exhibiting behavioural symptoms of dementia. The study explored the usefulness of iPads as a novel intervention for behavioural symptoms among the elderly with dementia and the effects on nurses' work life while their patients tried this mode of therapy.

Methodology

A qualitative approach explored the understanding of nurses' experiences of using iPads as a treatment modality in caring for the elderly with behavioural symptoms to facilitate person centered care in a teaching hospital in Singapore. The iPads were a research project made available to the patients in the acute Geriatric wards and isolation wards for COVID. Prior to data collection on nurses' perspectives, 25 iPads were distributed to 6 acute geriatric wards and isolation wards. The iPads were programmed to access Youtube, games and Facetime. The patients were offered individualized choices of therapy, according to their interests, cognitive abilities, and culture. The choices available were selections of music and video playlists. Simulated presence which consisted of video calls with their family members using Facetime or playing back voice/ video recordings of the patients' families were also available. Each therapy session varied between 15 minutes to several hours, conducted on individual basis or in small groups. The staff and other patients sharing the same cubicle also benefited from passively listening to music.

Two weeks after termination of project, an online survey was conducted among the ward nurses who participated in the iPad project. Informed consent was obtained from all participants involved in the survey, and the nurses were under no obligations to complete the survey, should they refuse to do so. All data generated was treated confidentially and reported anonymously. A total of 142 nursing staff responded to the online questionnaires (Table 1).

Table 1: Questions and subsequent prompts.

1. Patients benefitted from individual use of the iPads. (Agree vs disagree)	If you agreed with the above question, in what ways was the individual iPad helpful for the patients?
2. The use of iPads was helpful for the patient's cognitive stimulation. (Agree vs disagree)	If you agreed with the statement above, in what ways did you find that patients benefitted?
3. While / after using the iPAds, patients were less agitated, able to smile and engage with others and were happier and more cheerful. (Agree vs disagree)	
4. The use of iPads in the wards has improved my job satisfaction and reduced my stress levels during my shift. (Agree vs disagree)	What did you agree or disagree with the above statement?
5. Would you recommend use of iPads as part of engagement/ therapy for the elderly– in particular elderly with dementia in the wards?	

Results and Discussion

A total 142 staff participated in the survey. There were 4 themes which emerged from the thematic analysis of staffs' perspective using iPads as therapy on the older patients with dementia with behavioral symptoms. The nurses reported that their patients were better engaged, corresponding with an improved quality of life, improved social interactions with staff/ fellow patients and reduction in behavioral symptoms.

Theme 1: Better Engagement

Most of the nursing staff found that iPads provided better engagement. Engagement refers to an act that helps to maintain function and well-being [13]. In this project, staff observed that older person with dementia were more interactive when using the iPad. "Patients were seen interacting and reacting to shows that was played on the iPads. Sometimes their facial expressions showed positive reactions to the show or movie. Patients were able to recall memories from their past, when playing old movies and song."

The patients were also noted to be actively engaging. Active engagement in activities has been identified as a potential factor in maintaining function and sense of well-being in patients with dementia [14]. "Patients were able to reminisce with the old songs/ movies. The patients could tell me what was going, shared the history of her favorite music or shows they watched when they were kids. Sometimes the patients explained the plot of the movies and told us about the actors' life stories."

Some elderly patients preferred their own company but were noted to have benefited from the iPads. The following were nurses' observations. "Patients who indulged in their alone time benefited more from iPads than group therapy. They opened themselves up more compared to group therapy as individualized therapy with their iPads matched their introvert attributes. The iPads provided entertainment for patients who preferred not to interact with others."

In the current healthcare environment where resources are tight, most of the patients would be left on their own in the busy hospital wards without any planned therapies/ activities. This frequently resulted in cognitive and functional decline. Actively involving the elderly patients with dementia in their own care while they received treatment for their medical conditions presented great opportunities for improving outcomes; the evidence on cognitive and physical strategies is compelling [15].

Theme 2: Improve Quality of Life

The use of iPads was shown to improve quality of life for the older patients. Listening to music and watching movies were the most commonly chosen therapy in this study, followed by facetime and audio recording. Patients were noted to have better control of their behavioral symptoms during their stay in the wards. Among the elderly patients with existing BPSD, their agitation scores were reduced. "The therapy sessions with iPads helped to calm patients down gradually when music was playing and the games kept patients occupied. The patients were calmer, less restless and less disruptive. The patients were kept occupied with watching videos of their choice, which made them less agitated when the staff approached them for care. The patients were more cheerful and happy after listening to their favorite songs"

The iPads provided a sense of wellness. It improved engagement to activities and the patients were less combative while the staff assisted them with their daily activities. "They were more willing to open themselves up. "After engaging in iPad therapy, they were more participative in their daily activities, lessening the load on the care staff".

Music therapy has been studied for the management off behavioural and psychiatric symptoms of dementia, either in the form of passive listening, active participation, singing or engaging music therapists in therapy sessions. The BPSD (delusions, agitation, anxiety, irritability, apathy, aberrant motor behaviour and night time behavioural symptoms) had been shown to reduce with music therapy among subjects with moderate to severe dementia[16]. Music therapy has also been tried among the subjects with dementia to determine if there is an impact on cognition and speech. Brotons (2000) showed an improvement in content and fluency of speech among study participants who took part in music therapy, compared to conversational intervention. With the improvement in BPSD and language abilities, music therapy may improve communication among the PWDs and their caregivers and perhaps in doing so, reduce caregiver stress. One of the theories of BPSD emergence is due to unmet needs and this frequently arise due to communication breakdown [17].

Theme 3: Improve Connection with People

The use of iPads had positive impacts on patients, relatives and staff in multiple ways, one of which was connecting patients with their families who could not visit. iPads provided a virtual platform for the patients to communicate with their loved ones while they were hospitalised in the general wards or isolated on their own in the isolation ward. Simulated presence therapy (SPT) allowed the patients to stay in touch with families and left a positive impact for the patients, by exhibiting lesser agitation, greater life satisfaction [18] and reduced separation anxiety experienced by the patient [19]. A familiar face and reassuring voice of a relative offered a sense of comfort and security. It also encouraged patients to engage with others around them rather than spending time alone.

According to the consequences for need driven compromised behaviour model, behavioural disturbances exhibited by the persons with dementia is an expression of an unmet need or goal. The unmet needs ranged from physiological needs like hunger, thirst, pain, toileting needs or unfulfilled psychological needs such as boredom and anxiety. These behavioural symptoms should therefore be seen as communication breakdown where the PWDs' needs are not satisfactorily communicated to their caregivers [20,21] The nurses reported a substantial reduction of behavioural symptoms such as agitation at the same time, an increase in positive behaviours such as more receptive in communication and appears happier.

"..Patients were happier when they talked to their loved one.."

"..able to connect to families on faceTime.."

" Patient became more receptive to communicate with nurses…"

Theme 4: Improve Behavior

Staying in the hospital can be very stressful experience for the older people with dementia. The changes in their usual routine, the unfamiliar hospital environment and schedule, unfamiliar caregivers, food, etc are all disorientating and confusing for the PWDs [22]. The PWDs are more likely to be upset and putting in fun activities is an excellent way to take their minds off the hospital environment and in doing so, produces a calming effect. Previous studies on use of iPad showed it reduced agitation, with a significant lower level of agitation and restlessness after iPad sessions among women compared to men [23].

"able to distract patients with dementia thereby reducing the staff's stress with patients who repeatedly attempted to climb out of bed and wanting to go home"

" able to distract patients and direct their focus on the iPad, rather than create havoc in the ward and even helped to prevent boredom for patients"

" for those patients who liked to wander, they were, noted to be occupied , thereby stopping them from wandering "

Participants were asked for any additional comments about the use of iPads in the hospital setting (Table 2).

Table 2:

POSITIVES QUOTES
• *"Please do initiate IPAD use again in elderly wards. It will be a great help for nurses and also good form of engagement for all patients"*
• *"Please make it permanent- the iPad therapy"*
• *"Continue using iPad in our reach out to patients during therapy as these arouse the interest and patients' participation were better"*
• *"Use of iPad is recommended in the general wards if there are extra staffing to sit, engage and watch over elderly patient with dementia".*
• *"Please give back the iPads :) very beneficial for elderly in the ward especially for long stayers, they felt very bored"*
• *"It also helped patients who were bored with nothing to do now that visitors can only have short visiting hours"*
• *We can also use the iPads as the tool for orientation for the confused patients, as advances in technology, instead of having to move the orientation boards to patients' bedside. Carrying an orientation board is no longer feasible. This also reduces infection rates.*

There are barriers identified in the use iPads.

- iPad therapy was not suitable for everyone, especially those with severe dementia, visual and hearing impairment. There were 3 occasions where a confused elderly, attempted to snatch the iPad from nurses when the nurses placed it on their side of their beds.
- It required assistance from a staff to initiate the treatment, to identify suitable strategy for the individual patients with different interests and needs.
- It required internet connection. During the project, the Wifi in the whole institution was cut off for security reasons, we had to secure additional data plans for some of the programs and apps to work.
- Additional responsibility of nursing staff: The nurses felt that it was additional job for them and some were afraid they would accidentally lose the iPad, and it had become part of their routine to check the iPad every shift.

The barrier statements are as follows (Table 3):

Table 3:

NEGATIVES QUOTES
• *Downside was when elderly patients didn't know how to use iPads.*
• *Those with severe cognitive, hearing and visual impairment did not benefit from iPads.*
• *Personally, I felt the usefulness of iPads for patients with dementia was 50%, not all of them took to ipads. Also, rather than limit the use of ipad to patients with dementia, elderly with intact cognition may also benefit from the use of ipads. Tablets with a bigger screen may also be better for the elderly.*
• *The only problem was the internet connection of the iPads. Unable to connect in 3 out of 4 of the iPads available*
• *Wifi connection may be a problem at times.*
• *Add more iPad and games suitable for the older generation, and recommend some iPad protector as patient sometimes drop the iPads.*
• *Additional job for nurses to take care of the iPads. If the iPads were damaged, the blame may fall on nurses.*
• *Cons - need to check iPad every shift to ensure it's not lost*
• *Need to fill up the form to those patients who use the iPad, which was additional work*

Adopting a person-centred approach involved taking into account the individual's cognitive abilities, choice, preferences and cognitive abilities. Elderly patients with cognitive impairment required varying levels of supervision and support while using an iPad, depending on their previous experience with technology. The current generation of older adults in the general Geriatric wards are >80 years of age, and most of them have poor technology literacy and most did not own an electronic device.

Conclusion

The use of iPads by nurses in acute care settings for patients with dementia and delirium has a potential to enhance patient care, especially in active engagement, quality of life, improvement of connection with loved ones and improvement of behaviour symptoms. To our knowledge, this study is significant and the use of iPad in acute care unit has a positive impact on patient's care and has benefitted the nursing staff as well. This study focused on the qualitative aspect on the nurse's perspective on use of iPad in the general acute ward settings and isolation wards. This study is encouraging such that nurses benefited from the iPads as a form of therapy for the older patients with dementia, where the patients' behavioural symptoms and agitation improved after therapy. There were of course negative feedback from the nurses which were minor which the authors believed would improve with longer term use as the nurses gained more experience with the iPads. iPads were able to engage the patients socially and mentally with improvement in mood while the nurses could cope better with their stress levels and this therefore should be scaled up to involve more patients in the general wards.

Acknowledgement

None.

Conflict of Interest

No Conflict of interest.

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