

Supporting Regional Aged Care Nursing Staff to Manage Residents' Behavioural and Psychological Symptoms of Dementia, in Real Time, Using the Nurses' Behavioural Assistant (NBA): A Pilot Site 'End-User Attitudes' Trial

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Abstract. *Background:* This regional pilot site 'end-user attitudes' study explored nurses' experiences and impressions of using the Nurses' Behavioural Assistant (NBA) (a knowledge-based, interactive ehealth system) to assist them to better respond to behavioural and psychological symptoms of dementia (BPSD) and will be reported here. *Methods:* Focus groups were conducted, followed by a four-week pilot site 'end-user attitudes' trial of the NBA at a regional aged care residential facility (ACRF). Brief interviews were conducted with consenting nursing staff. *Results:* Focus group feedback (N = 10) required only minor cosmetic changes to the NBA prototype. Post pilot site end-user interview data (N = 10) indicated that the regional ACRF nurses were positive and enthusiastic about the NBA, however several issues were also identified. *Conclusions:* Overall the results supported the utility of the NBA to promote a person centred care approach to managing BPSD. Slight modifications may be required to maximise its uptake across all ACRF nursing staff.

Keywords. Behavioural intervention, eHealth, Residential aged care, Dementia, Psychotropic medication

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1. Introduction

Behavioural and psychological symptoms of dementia (BPSD) such as wandering, and agitation are commonplace within aged care residential facilities (ACRFs), especially amongst residents with Alzheimer's disease [1]. Within ACRFs, it is estimated that 52% of the permanent residents have a diagnosis of dementia and the administration of psychotropic medication to manage BPSD is very common [2].

The behaviour problems that residents with dementia present with can make up a large part of the nursing burden [3]. However, studies show that nursing/care staff are poorly equipped to anticipate residents' emotions and how best to deal with BPSD [4]. All too often, BPSD in ACRFs are managed with psychotropic medication and/or physical restraint and an overuse of both of these methods impact negatively on the residents' physical and mental functioning [5].

On the other hand, research demonstrates that psychologically-based interventions can be successfully used to manage BPSD especially when the strategies are person centred as an alternative to medication and restraint [6,7]. However identifying and knowing how to apply the most appropriate behavioural management strategy typically requires psychological behavioural training or expertise. Unfortunately, the majority of nursing assistants/personal care attendants, enrolled, and registered nurses do not receive such training and therefore struggle with residents who display BPSD [8]. Introducing an educational and interactive ehealth application could assist ACRF nursing staff to make informed decisions when caring for residents displaying BPSD [9], especially for nursing staff who reside in rural or remote locations, given fewer training opportunities and access to specialist behavioural interventionists.

2. Method

2.1. Participants

Two focus groups and a pilot site trial were conducted in July to September 2014, at an ACRF located in regional Victoria, Australia. The two focus groups and pilot study involved 10 nursing staff (9 female and 1 male, 6 registered nurses and 4 enrolled nurses), and five residents (3 female and 2 male; age range 59 to 88 years old) whom participated in the pilot trial, following consent.

2.2. Nurses' Behavioural system (NBA)

The NBA application provided staff with: a BPSD event screening tool that provided a series of 'safety' assessment questions around physical health and environmental causes; an easy to use BPSD menu system; recommendations and feedback about which psychological interventions to employ in response to the specific BPSD events encountered; and a simple web dashboard, graphically displaying the outcomes of the strategies employed, and educational information and screening tools. The BPSD content derived from best practice guidelines and heuristics drawn from the clinical experience of the authors.

The prototype NBA system was provided to nursing staff through a secure mobile and web-based application. Mobile phones were also provided to the nursing staff.

2.3. Procedure

- Residents: Potential participants who had previously displayed BPSD were selected by the ACRF manager. Residents' next of kin were then contacted and consent sought.
- ACRF staff: The study was conducted in two stages. In the first stage, two focus group sessions were held at different times to investigate whether modifications were required to the initial prototype and were conducted by the second and fourth authors. Focus group questions covered what types of BPSD events commonly occurred at the ACRF, what intervention strategies they typically employed, and the potential useability of the NBA system. Written notes of the nurse's feedback were taken by the second author.

The consenting nurses were provided with a one hour training session and then asked to use the NBA system over four weeks (stage two) with the residents, whose next of kin had consented, when they displayed BPSD. At the end of four weeks, nursing staff were briefly interviewed by the second and fourth authors to gauge their impressions and experiences of using the NBA system onsite. Ethical clearance was obtained through Federation University Australia's Human Research Ethics Committee.

3. Results

3.1. Stage 1 - Focus groups

The outcomes from the two focus group sessions only necessitated a change in the text font and colour of the NBA web pages, as it was not highly compatible with the ACRF's chosen web browser.

3.2. Stage 2 - Pilot site testing of NBA

Nurses were interviewed post the pilot trial to gauge their general impressions and experiences (both positive and negative) of using the NBA system and are discussed below.

3.3. End user behaviour impression/experience (positive)

Participating ACRF staff highlighted a number of potential benefits of using the NBA system. Staff reported that the ease of use of the NBA system was a very important feature. In addition, the NBA system enabled staff to quickly access a summary of the BPSD events and the behavioural interventions that had been used for each individual resident. Nurses were able to then view the interventions that had been successful, which facilitated informed decision making. Most staff commented that using the NBA system was quicker and less time consuming than the current practice of accessing progress notes per resident as BPSD events were quickly visible and not lost within other documented information. Staff also reported that this efficiency enabled them to attend to the residents in a timelier manner when managing BPSD events.

Most staff also commented on the benefits of having a more consistent approach across nursing staff in dealing with BPSD events and how this may positively impact on the residents. Staff were also particularly interested in utilising the NBA system to target new or respite residents across facilities. Several staff members also noted that having such an easy to use system reduced their own stress and anxiety levels when dealing with daily BPSD events.

Another advantage of the NBA system noted was the follow-up BPSD intervention strategy questions. These follow-up questions asked staff to identify any environmental factors associated with the presenting BPSD. This information allowed several staff to identify common patterns in behaviours and triggers, consequently leading one staff to implement effective strategies prior to the onset of the BPSD.

3.4. End user behaviour impression/experience (negative)

Some participating ACRF staff raised a few issues. On several occasions, one of the nurses forgot to consult with the NBA and used psychotropic medication. The dual reporting system of care progress notes and the NBA also presented some issues. A review of behavioural incidences in the written progress notes revealed that some BPSD events were reported in the progress notes but not in the NBA system, and vice versa. Having a dual reporting system is likely to have caused this confusion. However, several nurses suggested that while some behavioural issues were documented in the progress notes, they were not necessarily perceived as highly problematic and so, were not entered into the NBA. Last, two nurses expressed some initial apprehension around using the NBA, acknowledging they were less comfortable with mobile technology.

4. Discussion

Overall the utility of the NBA system was established based on the regional nurses' impressions and experiences of using the NBA system. The nurses involved in the pilot site trial also reported that they would like to continue to use the NBA system post trialling. Nursing staff found that the format and layout of the NBA application made it easy to use, and the decision support functions, as well as the graphical representation of BPSD events, was very time efficient and informed their decision making. Some nurses also reported that the NBA decreased their stress and anxiety levels when responding to BPSD events.

However given this was a very small pilot trial of a new system with 10 ACRF staff members participating, and all staff being from the one regional ACRF location, the generalisability of the nurses' impressions are limited. In addition, the ACRF pilot site in this study comprise of registered and enrolled nurses only. No personal care attendants were employed at this facility. Given the differences in training levels between registered, enrolled, and nursing attendants, we are unable to comment on the usefulness of the NBA with personal care attendants.

Furthermore, given that two of the nursing staff in the pilot trial were initially hesitant to use a mobile phone to log BPSD events, it will be necessary when working with staff who are technologically fearful to provide them with greater training opportunities. In addition, given that some nurses will typically and automatically respond to BPSD events by using medication, there will be a need to build in other strategies to decrease this habitual first line medication response.

5. Conclusion

The pilot site NBA 'end-user attitudes' trial established its utility in a 'real world' regional setting. All staff identified a number of benefits resulting from using the NBA, such as ease of use and a consistency of care. Limitations and future recommendations were also identified. Further development of the current NBA system will occur to circumvent the issues raised in the pilot trial and the revised system will be subject to a larger trial.

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