AJAN

VOLUME 37, ISSUE 2
MAR–MAY 2020
ISSN 1447-4328
DOI 2020.372

AUSTRALIAN JOURNAL OF ADVANCED NURSING

An international peer-reviewed journal of nursing and midwifery research and practice

IN THIS ISSUE

EDITORIAL

RESEARCH ARTICLES

REVIEWS AND DISCUSSION PAPERS

The *Australian Journal of Advanced Nursing* is the peer-reviewed scholarly journal of the Australian Nursing and Midwifery Federation (ANMF). The Mission of *AJAN* is to provide a forum to showcase and promote a wide variety of original research and scholarly work to inform and empower nurses, midwives, and other healthcare professionals to improve the health and wellbeing of all communities and to be prepared for the future.

Publisher and Editorial Office: Australian Nursing and Midwifery Federation • Email: ajan@anmf.org.au • www.ajan.com.au

EDITORIAL

COVID-19 – nurses and midwives impact on global security

In the year of the nurse and midwife, a global pandemic is not what we signed up for. Nor were we to predict how the world would be turned upside down with grief and devastation across the globe coupled with lethal economic impact. At the commencement of 2020 the World Health Organization (WHO) designated this year as the Year of the Nurse and Midwife in recognition of the contribution nurses and midwives make to peoples lives everyday. Nurses and midwives are the very fabric of healthcare and now we have learnt in real-time that health is an essential component to global security and economic stability. The value that nurses and midwives bring is health security; without them we would see fragile systems dangerously vulnerable to collapse, in the shadow of this global crisis. Now there is extraordinary recognition, but in ways we would have never predicted.

The widespread havoc, catastrophe, and insecurity has left the world scrambling for essential supplies, workforce, equipment, health resources, medical breakthroughs, and economic solutions. Whilst the pandemic is set to near wipe out the world's economy, many low-resourced countries are still fighting major outbreaks of other infectious diseases such as Ebola, and controllable infectious diseases like measles are making a vicious return. Cholera, a disease of the Middle Ages, continues to strike and bring devastation to millions across low resourced countries. What have we learnt? It is distressing to know that these diseases exist when we know how to prevent them and the importance of public health systems in maintaining our global health security. Whilst Australia is in the grip of the SARS-CoV-2 (COVID-19) crisis, there is no doubt it should be taken seriously, our best defense at present is strong public health messaging regarding behaviour change, coupled with a resilient and well-resourced health workforce. Across every facet of the health crisis are committed nurses and midwives who are mission critical to communities' health outcomes.

What's past is prologue; it's fair to say that the impact of COVID-19 was not something the health system had prepared for. The impact the pandemic has had and will continue to have on our health system and every day lives will change the future and our way of living for years to come. While the world battles the pandemic on all fronts, mental health is currently the great sleeper issue. The blast zone of this pandemic will be its psychosocial impact. When we do emerge from isolation, businesses start again and life begins to resemble something like normal – whenever that may be – other areas may take much longer. The warning that more people will suffer from anxiety, fear, and post-traumatic stress will take a significant toll on the community for years to come. Preparedness is focused on the here and now, and perhaps even the next six months, but we must also be planning now for two, five and ten years time as the impact will be wide ranging and hidden if we do not seek it out. One in five Australians already battle a mental illness and there is no doubt this number will increase. Connectedness and support is a critical consideration for the future. Preparing the health workforce to support the community and for the community to support the health workforce as the days ahead will be long and hard is the challenge we now need to equip ourselves for, and translate innovative opportunities for long-lasting benefit.

However, I would argue there are some positives emerging. The relentless impact of COVID-19 has resulted in the speed we have witnessed change, for example the evolution of the adoption of technology, government policy, and legislation, which in the past may linger for months or years. It has been refreshing to not be bombarded by media-fueled populist politics and stalemates in policy decision-making driven by bureaucracy. The bickering over the cost of public healthcare and job losses. The vacuum created by our relatively safe and prosperous world has disappeared. The opportunity to enact creative thinking by necessity has resulted in a new way of working, rapid access to health equipment, increased production to meet demand in certain areas and in amongst all of this has been a spotlight on the incredible work nurses and midwives do every day. On the front line there is no doubt that nurses, midwives, medical, allied health and other hospital staff have a massive challenge ahead of them and it is an investment we all need to support.

It has been said we face an enemy without a flag or a face. In response, public trust and societal stability has been tested. This was demonstrated by panic buying, disappearance of medical supplies, and for many a feeling and sense of deep loss, sadness, loneliness, isolation fatigue, fear, and the unknown. We know the pandemic will resolve, but it is the ability to cope, in the here and now and the wake of destruction that is unknown. It is happening and we need to work out how to proceed. Deep in this uncertainty are nurses and midwives working to ensure care is delivered to those who need it every day, now deployed to COVID-19 clinics and managing infectious clinics, tending to those diagnosed with COVID-19. Challenged by having to wear protective clothing all shift and then to walk out from the shift, returning to their family, knowing they must go back tomorrow, all the while wondering if (or when) they will contract the illness. Some

https://doi.org/10.37464/2020.372.112

have now chosen to distance themselves from their family, and their friends are, understandably, not taking the risk to see them. Such behaviours are indicative of a challenge bigger than any of us as individuals, so as a society we must respond.

So how do we weather the storm and where do we find the silver lining, together, in this twin crisis? A global health pandemic, and an economic crisis the likes the world has not seen since the Great Depression. These uncertain times provide opportunities to re-evaluate operations and lower former obstacles such as utilisation of innovative technology resulting in the optimisation of telehealth and mobile technology, expedite access to data, utilisation of registries, cloud-based platforms, the value of clinical research networks, artificial intelligence for health initiatives, health algorithms changing how we work and where we work enabling reach to where it is needed. The awareness and crucial role nurses and midwives are having on our health system is paramount. The results behavioural change at a population level can achieve to 'flatten the curve' when we stand together is immense. Noting that distancing is having one of the greatest impacts, rapid change sees growth and opportunity such as the importance to pull together as a nation.

April 7, 2020 was World Health Day and deliberately coincided with the release of the first publication of the WHO The State of the World's Nursing Report to mark The Year of the Nurse and Midwife. This report provides us with a detailed snapshot of the nursing workforce globally. The focus is to build our future workforce, continue to foster leadership, quality care and drive policy. Leadership that is greater than a role and title but is responsive, engaged, drives innovation, and has the will to act.

It is not by coincidence the WHO theme for 2020, *Nurses: A Voice to Lead – Nursing the World to Health* was decided, with many stories of true altruism, heroic leadership, delivering quality care to those at greatest need across the world, in a world where there is fear and uncertainty, Nurses and midwives continue to provide hope and quality care. Whilst there has not been the fanfare and celebrations that nurses and midwives may have hoped for in the Year of the Nurse and Midwife, what has emerged in the wake of this COVID-19 crisis is the worldwide awareness of the critical role nurses and midwives play to global security – a message that no coordinated media campaign could have achieved.

Professor Marion Eckert
Director, Rosemary Bryant AO Research Centre
Professor of Cancer Nursing
UniSA, Clinical and Health Sciences
University of South Australia
Adelaide, South Australia
Australia

Australian Journal of Advanced Nursing 37(2) • 2020.372.102

RESEARCH ARTICLES

The organisational socialisation of new graduate nurses and midwives within three months of their entrance into the health workforce

AUTHORS

SE OK OHR RN BN M Health Management PhD[1,3]

DOREEN HOLM RN RM Graduate Certificate Industrial Relations M Human Resource Management[2]

MICHELLE GILES RN CM BBus MIS PhD[1,3]

1 Nursing and Midwifery Research Centre, Hunter New England Local Health District, Newcastle, Australia.

2 Nursing and Midwifery Services, Hunter New England Local Health District, Newcastle, Australia.

3 School of Nursing and Midwifery, Faculty of Health, University of Newcastle, Australia.

CORRESPONDING AUTHOR

SE OK OHR Nursing and Midwifery Research Centre, Hunter New England Local Health District, Gate Cottage, James Fletcher Campus 72 Watt Street Newcastle, NSW, Australia. 2300. Phone: +61 2 4924 6724
Email: seok.ohr@health.nsw.gov.au

ABSTRACT

Objective: To investigate if the current onboarding process influences the organisational socialisation of new graduate nurses and midwives into the workforce.

Background: Positive organisational socialisation experience for new graduate nurses and midwives during their entry into the healthcare environment is an important contributor when building an organisation's ability to increase workforce capacity. However, few studies have investigated the onboarding processes to promote their organisational socialisation.

Study design and methods: A quantitative, descriptive, cross-sectional study design was conducted at a large Local Health District that provides health services to almost one million people in metropolitan, rural and remote locations. Participants were 170 new graduate nurses and midwives who commenced their transition program at 21 acute and community healthcare settings within the District in January and February 2017. Data was collected through a document review of current onboarding processes and by an online survey of new graduates. Data sets were analysed using descriptive statistics and content analysis.

Results: The survey response rate was 47% (n= 80). Findings highlight that the onboarding process provided by the District was useful for the new graduate's transition into the workplace. The findings also indicated that the onboarding process was inconsistent across different contexts in the District and required more relevant and practical components. In addition, the current onboarding did not adequately provide strategies to build relationships for new graduates within their work environments.

Discussion: This study provides valuable insight into current onboarding practices in both metropolitan and rural contexts and highlights gaps in this process across the health District. The findings of the study provide insights and future direction for improvements by addressing the inconsistency in the structure and content of orientation programs. The need for more accessible and consistent organisational information and a more structured

https://doi.org/10.37464/2020.372.102

framework for the organisational wide onboarding process was also identified.

Conclusion: Re-design of an onboarding process that is relevant, consistent and enhances relationship-building is imperative to meeting both the professional and organisational needs of new graduate nurses and midwives.

Implications for research, policy and practice: The findings of the study imply a need to streamline the onboarding process to provide greater opportunity for new graduates to develop and sustain professional networks and associated workplace relationships regardless of their locations. They also signal a need to develop policies practice and future research to assist a better organisational socialisation, in particular, the allocation of resources, better utilisation of time spent on education and workplace support in the transition into their clinical workplaces.

What is already known about the topic?

- Supporting new graduate nurses and midwives in their first year is important for their transition into the workforce and to increase their retention in the profession.
- Onboarding processes for new graduates during their transition into the workplace enhances their professional knowledge and confidence, which increases their capacity to provide safe quality healthcare.
- Few studies have investigated the relationship between the onboarding process and the promotion of organisational socialisation within the first three months of entering the health workforce.

What this paper adds:

- Findings identify the need to improve the onboarding process to better meet the complex needs of the new graduates.
- Implementation of a tailored onboarding process, especially in rural and specialty areas improves organisational socialisation.

Key words: Onboarding; orientation; personal support; transitioning to practice

INTRODUCTION

Organisational socialisation is critical for new employees as it is a learning and adjustment process that enables an individual to assume an organisational role that fits both organisational and individual needs.[1] Further, organisational socialisation is emphasised in the literature as crucial and necessary to assist new employees with the capability to transit into the workforce.[2,3] This is because organisational socialisation provides opportunity to gain organisational knowledge and increases the new employees understanding of organisational expectations, and its culture in their particular profession.[2,4] Hence, organisational socialisation assists new employees to assimilate into their new work community with reduced uncertainty because of access to organisational information such as policies and procedures and introduction to ways of working and building relationships.[2] Organisational socialisation also assists new employees to develop relationships with others, while learning the social norms and how the organisation operates.[3–5]

Organisational socialisation is a dynamic and complex concept and an important step is 'onboarding'.[1,2] Onboarding is defined as the process of helping new employees adjust to social and performance aspects of their new jobs.[2] Health organisations provide an onboarding for new graduate nurses and midwives (NG) aimed at facilitating their organisational socialisation in the initial period of employment. A positive organisational socialisation experience for NGs during their transition and entry into the healthcare environment is an important contributor to building an organisation's ability to retain staff and increase workforce capacity.[4]

The onboarding process is recognised as an important priority for policy makers, administrators and educators working within healthcare environments,[4,6] a number of aspects to the onboarding process for NGs are identified in the literature. These include structured or non-structured orientation programs, preceptorship/mentorship programs, supernumerary time, and professional education opportunities.[7–9] Orientation programs have been used as an onboarding strategy to assist NGs to gain organisational knowledge and skills so they can assimilate and perform in the workplace.[2,10] Support through preceptorship and/or mentorship, including supernumerary time, and providing education and training is also recognised as essential during the transition of NGs into clinical practice.[11–13]

It has been identified that some NGs feel inadequately prepared through their university studies to work in healthcare work environments.[13,14] In fact, the transition of NGs into healthcare work environments is described frequently as stressful.[15] Some authors described expectations that NGs need to 'hit the ground running'.[16] If NGs are not provided with clear direction and mentorship in the first few months of practice they are known to develop role ambiguity, characterised by coping poorly, anxiety and a lack of confidence.[3,4] Similarly, an Australian mixed method cross-sectional study exploring the experiences of NGs in their first year of employment indicated there was a lack of evaluation of onboarding processes for NGs in health services in New South Wales (NSW), one of the largest states in Australia.[17] In particular, there is a lack of information on the NGs perspectives about their experiences in both rural and metropolitan health service settings.[17] Addressing the NGs' needs through a substantial and relevant onboarding process may be beneficial in improving their performance, job satisfaction and long term retention.[18,19] This aspect of organisational socialisation may be pivotal for the retention of the Australian nursing and midwifery workforce, experiencing long term workforce shortages.[20]

The District involved in this study has experienced an increase in NG recruitment of 33% across a ten year period (171 NGs in 2008 to 228 NGs in 2018),[21] paralleling with increasing intakes of nursing students in surrounding universities. Therefore, it is timely for the District to explore the effectiveness of its onboarding processes in meeting the socialisation needs of those NGs. This aligns with the NSW State Health Plan that emphasises support and development of NGs into their clinical roles.[22] As the initial onboarding experience is known to improve job performance and job satisfaction and reduce unwanted turnover,[2] it is therefore important that organisations optimise their onboarding processes. The study presented in this paper aims to provide a deeper understanding of the onboarding process of NGs, its impact on them, and to identify key priority areas in the onboarding process for healthcare organisations employing NGs.

STUDY DESIGN AND METHODS

DESIGN

This study used a quantitative, descriptive, cross-sectional study design.

SETTING

The setting was a large health district (the District) in New South Wales, Australia, providing health services to almost one million people in metropolitan, rural and remote locations. The District consists of three tertiary referral hospitals, four rural referral hospitals, 22 district and community hospitals, 70 multipurpose services and community health services, three mental health facilities and one residential aged care facility spread across 25 local government areas (geographically about 133,000 square kilometres in size).

PARTICIPANTS

One hundred and seventy NGs who commenced their transition program in the health District in January and February 2017 across 21 acute and community healthcare settings.

DATA COLLECTION

Phase one: A review of current onboarding processes was undertaken through examination of current programs and related documents, specifically reviewing orientation programs and induction, supernumerary days, personal support offered, and NGs information sources.

Phase two: An online survey containing 41 items was circulated via work email to the 170 NGs at four to six weeks after commencement of employment. The survey was opened for six weeks with a reminder sent half way through at three weeks.

DEVELOPMENT OF SURVEY

The survey was developed based on key constructs identified in an extensive literature review and modifications made from a previously validated survey used by Parker et al.[17] by adding questions specifically related to the onboarding process. The survey collected information on NG demographics, prior nursing/midwifery work experience, program structure and content relevance along with locations and NG satisfaction with the onboarding process. The survey also included a total of 19 items that explored future education topics; four items about organisational information, seven items about ways of working and eight items related to coping skills. Content validity was ensured through consultation with seven nursing and midwifery leaders, including clinical educators and NG coordinators who reviewed the survey and provided feedback.[23]

Survey questions were structured as either multiple choice questions or as a Likert scale where respondents were asked to choose an option from 1 (strongly disagree) to 5 (strongly agree). The respondents were provided with free text fields on some questions so that they could make additional comments.

DATA ANALYSIS

Quantitative data were analysed using descriptive statistics and frequency distribution and additional free text comments were analysed using content analysis as described.[24] All text was analysed by taking the following steps: read and re-read the texts, condense into meaningful units, formulate codes, develop codes into categories and create themes.

ETHICAL STATEMENT

Approval to conduct this study was granted by the District Ethics Committee (HNEHREC Reference No: 16/12/14/5.14). Completion of the online survey implied consent. NGs were informed that participation was voluntary and all information obtained during the course of the study was de-identified to ensure anonymity.

RESULTS

PHASE ONE: REVIEW OF THE CURRENT ONBOARDING PROCESS WITHIN THE DISTRICT

New graduates were expected to participate in the following four orientation components in a face-to-face mode across the District: 1) Corporate orientation: a two-day program which included organisation information (eg. clinical governance, ethics, staff health and security) and mandatory education (manual handling, infection control, fire safety, roles and expectation of nurses/midwives); 2) NG specific orientation, where the information provided focused on the perceived needs of new graduate nurses and midwives; 3) Ward induction, focused on specific ward information; 4) Supernumerary days, allowing the NG to not have a patient load. Wide-ranging variations were identified in these four orientation components. Further review identified that the length and content of each component of the program varied depending on location, facility resources and the needs of speciality areas. An acute care hospital in a metropolitan environment allocated a minimum of three days for orientation, whereas an acute care setting in a rural area provided a total of five days orientation. In addition, new graduates in rural or remote areas and speciality areas such as mental health or critical care were more likely to participate in a longer orientation period, as much as two weeks. Depending on the facilities, the length of orientation and education topics were varied. For example, medication safety was included in all orientation programs, but the length of the sessions ranged from 30 minutes in one facility to 120 minutes in another facility, and a medication safety competency assessment was only included in two facilities. In addition, NGs from all facilities were provided with a site-specific NG Handbook that guided them in their first year of clinical practice. The content and extent of this information varied, with much duplication of information in the handbooks. The District, in collaboration with NSW Health, was working towards providing greater capacity for staff to undertake online courses including specific modules for NGs, however there was limited uptake of online courses included in the onboarding process, with a greater reliance on nursing/midwifery educators.

PHASE TWO: SURVEY RESULTS

The survey yielded a 47% response rate (n=80). The characteristics of respondents were similar with the cohort of NGs who commenced their work, except there was less representation of male respondents in the survey (see Table 1). The majority of respondents (66%, n=53) were aged 20-29 years and 75% (n=60) reported having had prior nursing and/or midwifery experiences before recruitment to the NG program. The respondents were almost equally located between metropolitan facilities and rural/remote facilities, and 34% (n=27) needed to relocate to take up their employment. Overall, all except one (98.8%) of the respondents stated they were happy to commence their work at the District.

ORIENTATION, WARD INDUCTION AND SUPERNUMERARY TIME

All NGs attended either Corporate Orientation or New Graduate Orientation with orientation periods varying from one day to two weeks. Over 30% of respondents (n=25) identified that they did not participate in a ward induction, but the rest attended one to two days ward induction. All except six NGs had supernumerary days, which varied from one day up to two weeks.

Further, 82% (n=66) of respondents agreed that 'the orientation program was beneficial to a new employee' in their transition period. The following comments reflect the NGs satisfaction with the orientation program:

TABLE 1: CHARACTERISTICS OF RESPONDENTS

		All NGs (N=170)	Respondents (N=80)
Age	20–29 years old	73% (125)	66% (53)
	30–39 years old	18% (30)	24% (19)
	40–49 years old	6% (10)	8% (6)
	≥50 years old	3% (5)	2% (2)
Gender	Male	12% (20)	2% (2)
	Female	88% (150)	98% (78)
Location	Metropolitan	65% (111)	54% (43)
	Rural	35% (59)	46% (37)
Prior nursing and/or midwifery experience †	Yes	70% (119)	75% (40)
	No	30% (51)	25% (20)
The duration of your experience	≤ 12 months	30% (35)	31% (19)
	>12 months	70% (135)	69% (41)

† Some respondents had worked more than one job.

> *'It was great. I felt very supported and welcomed. Coming from out of area it was a great introduction to the XX Hospital and made an enormous difference in my transition into the workplace. I would definitely continue it for future New Grads.'* (Metropolitan area)

> *'It has been great so far and I really have enjoyed my overall time here at XX Hospital.'* (Rural area)

Respondents (n=53) also made comments suggesting areas for improvement in the orientation process such as need for relevance, practicality and redesign of supernumerary days. Ten comments related to the relevance of the content in meeting NGs particular workplace needs. They pointed out that some information was redundant, for example, topics that had previously been covered by their university study or NGs previously employed in a different capacity at the District were required to re-attend the orientation program. Two respondents highlighted the need for more localisation of content of the orientation program.

> '(The orientation program) *feels like a one-size fits all process.'* (Rural area)

> *'I went to XX Hospital for my orientation and I am working a Y Hospital, and the orientation at XX Hospital was very site specific and not relevant to me.'* (Rural area)

Eleven comments were about the need for orientation topics to be more practical to assist with familiarising NGs to the clinical practice environment.

> *'Introduction to all the programs that nurses use on the wards, what they are for, and how they are used would be helpful. They are hard to navigate and use when in the first few weeks of the first rotation.'* (Metropolitan area)

> *'Include education on expectations of documentation e.g. falls risk, Waterlow score, and explanation of CPD points, how it works, how to document points etc.'* (Rural area)

Some respondents asked for demonstrations of certain procedures to enhance their skill in areas that are relevant and important to the organisation, such as the use of computer system procedures for leave requests, and how to manage rosters and source policies. Another element highlighted for improvement in the orientation program was the lack of information available about Aboriginal health and staff health and lack of guidance or support in developing the competency levels they needed to achieve.

A further eight comments related to supernumerary days, and indicated a lack of clarity about the role and responsibilities of preceptors and NGs, and a lack of transparency about the goals of supernumerary days.

> *'I was allocated three booking in visits on my first day without a proper supernumerary day. I found this scenario to be extremely challenging.'* (Metropolitan area)

> *'We need to have more appropriate supernumerary buddies. Educate nurses on being supernumerary buddies so they know what to do and how to support new grads. My buddy gave me two of her patients without an introduction to the ward and sat at the desk for most of the day. She also only worked one day a week on that ward. Not an appropriate buddy.'* (Rural area)

PERSONAL SUPPORT

Respondents were asked to rate the types of personal support they were being offered during the first month of their employment. The majority indicated that all types of personal support were beneficial (Table 2). In particular, 94% of respondents agreed that the benefit of support from a clinical mentor/preceptor or clinical educators in the initial part of their working life as new nurses or midwives was most beneficial. Some respondents were not sure how beneficial regular meetings with managers and clinical supervisors were, but they felt there was a need for them.

Twenty percent of respondents (n=16) made comments about the importance of personal support and the lack of access and consistency of access to personal support.

> *'Having XX as an educator has been my survival line. XX really helps the transition and also to be there to help explain things on the ward and help us'* (Rural area)

> *'Having a mentor on the ward has been amazing to bounce questions off and know that they are okay with that rather than burdened by it. Regularly seeing the educators has also been so good to chat about different situations and get a helping hand. …(with) a skill I was not confident with on my own but now feel confident following supervision and guidance from the educators.'* (Metropolitan area)

> *'Different wards provided differing levels of support. I found to have a lot of support in Medical 1 was brilliant and so helpful and I found to have very minimal support in Surgical 2 which was really hard and not fair as it has a heavy workload and is a difficult ward to work in as a new grad RN.'* (Rural area)

TABLE 2: TYPE OF PERSONAL SUPPORT YOU FEEL WOULD BE BENEFICIAL TO YOU DURING THE TRANSITION PROGRAM

	(Strongly) Disagree	Neutral/Don't know	(Strongly) Agree
Clinical Mentor/Preceptor	1.25% (1)	4 5% (4)	93.75% (75)
Regular meeting with Nursing/Midwifery Unit Manager	10% (8)	17.5% (14)	72.5% (58)
Regular meeting with Clinical Educator	0% (0)	6.25% (5)	93.75% (75)
Clinical Supervision	3.75% (3)	21.25% (17)	75% (60)

FUTURE EDUCATION NEEDS

Respondents were provided with a list of topics grouped into three categories; organisational information (OI), ways of working (WOW) and coping skills (CS). The Phase one of the review of current onboarding processes identified these to be the topics of education days throughout the year, rather than during the initial onboarding period. They were asked to rate the importance of each topic to their future educational needs. Table 3 demonstrates that respondents rated all three categories highly. In addition, more than 95% of the respondents strongly agreed or agreed that some educational topics should be addressed at the beginning of their transition period, for example, knowing roles and responsibilities, patient assessment, prioritising and planning, time management and introductions to other new graduates.

DISCUSSION

This study provides valuable insight into current onboarding practices in both metropolitan and rural contexts and highlights gaps in this process in a District where 170 NGs commenced their professional practice together. Thirty percent of this cohort were mature aged NGs, following a trend identified by Kenny et al.[16] Study findings are similar to those in a study of NGs in NSW public sector,[17] with almost 70% of NGs having more than 12 months prior nursing and midwifery experience. These characteristics impact on a NGs socialisation into the organisation as their life and work experiences are factors that need to be taken into account when planning onboarding processes.[3]

The District's efforts to enhance socialisation were accepted well by the NGs, with almost all respondents identifying that they accessed a variety of onboarding processes such as corporate orientation, new graduate orientation sessions, and supernumerary days. They found that these onboarding processes were useful for their organisational socialisation in the beginning of their professional practice. However, more than 30% of respondents reported not having a ward specific induction. The District where this study was conducted uses the ward induction as an opportunity for NGs to familiarise themselves with their immediate working environment and identify the people they work with. This could be a critical limitation of the onboarding process as relationship building is key in organisational socialisation of NGs and a challenge for NGs.[4]

TABLE 3: FUTURE EDUCATION TOPICS

		(Strongly) Disagree	Neutral/Don't know	(Strongly) Agree
OI	An overview of the organisation	3.75% (3)	13.75% (11)	82.5% (66)
	Your rights and responsibilities as a nurse/midwife	1.25% (1)	5% (4)	93.75% (75)
	Incident reporting	1.25% (1)	10% (8)	88.75% (71)
	Education management system	1.25% (1)	8.75% (7)	90% (72)
WOW	Patient assessment	1.25% (1)	2.5% (2)	95% (76)
	Documentation	2.5% (2)	11.25% (9)	86.25% (69)
	Cultural awareness	3.75% (3)	8.75% (7)	87.5% (70)
	Essential of care §	2.5% (2)	10% (8)	87.5% (70)
	Excellence*	5% (4)	10% (8)	82.5% (66)
	Work health and safety	3.75% (3)	13.75% (11)	82.5% (66)
	Infection control	5% (4)	12.5% (10)	82.5% (66)
CS	Prioritisation and planning	0% (0)	3.75% (3)	96.25% (77)
	Time management	2.5% (2)	2.5% (2)	95% (76)
	Stress management as a new employee	2.5% (2)	8.75% (7)	88.75% (71)
	Communication strategies	5% (4)	12.5% (10)	82.5% (66)
	Conflict resolution strategies	3.75% (3)	7.5% (6)	88.75% (71)
	How to deal with discrimination/racism/bullying	6.25% (5)	6.25% (5)	87.5% (70)
	Network building	2.5% (2)	12.5% (10)	85% (68)
	Introduced to other new starters	2.5% (2)	5% (4)	92.5% (74)

§ Essentials of care: a model of care.[25]

*Excellence includes Hourly patient rounding, Bedside clinical handover, Patient care board, and Follow up phone calls.[25]

Based on the findings of this study, the authors are calling for improvements in addressing the inconsistency in the structure and content of the orientation programs, and the quality of supernumerary time and levels of support across facilities and even at ward level. In addition, the respondents asked for more practical and relevant information to support them through their initial transition into the workforce. Suggestions covered more information about the organisation, ways of working and coping skills. Further, some respondents described parts of the onboarding process as repetitive and unnecessary. A number of respondents were required to complete six mandatory education modules, which they had previously completed as part of their clinical placements. Respondents who previously worked in the District as enrolled nurses or as assistants in nursing prior to being employed as NGs, felt they did not need to attend another corporate orientation. However, attending orientation again as a NG may be useful as the content of the program may differ from previous orientation programs, particularly if they were located in a different facility/ward as the localised content would differ. This point is particularly relevant for respondents in rural and remote locations, who at times felt geographically isolated. NG respondents employed in small rural locations needed to attend their orientation program in a larger facility, but found the content of this orientation not particularly relevant to their smaller facilities.

The importance of a clinical mentor/preceptor and supportive manager in the transition is well established in the organisational socialisation.[4,11,17,26] Personal support was seen as an important element of the onboarding process by NGs, who agreed that it helped them with learning coping skills such as relationship building and time/priority management skills in their initial six weeks of employment. However, at the same time, NG respondents reported that personal support, especially with availability and accessibility was not adequate at times. The provision of personal support assists the NGs' ability to learn workplace cultural norms, to build relationships with colleagues, and confidence,[13,27] and is therefore identified as one of the key aspects that requires improvement in the current onboarding process in this District.

The findings from this study highlight an onboarding process that needs to be more tailored to the individual's needs to make it more meaningful, relevant, and engaging. It calls for a District level open discussion about sustainable and practical onboarding strategies that better meet the needs of individual NGs. Similar to findings in the study by Parker et al.,[17] the need for better provision of consistent organisational information and a structured framework for an organisational onboarding process is required. An exploration of the feasibility of alternative models, such as a centralised internet based repository of relevant information for NGs that links to policy documents, organisational information and clinical practice may be a solution to address the lack of access to information. This could be especially useful for the District which now employs more than 220 NGs annually in geographically dispersed healthcare settings. A successful onboarding process to maximise organisational socialisation of NGs will enhance job satisfaction and retention, and potentially achieve the provision of quality healthcare by an adequately skilled nursing and midwifery health workforce.

LIMITATIONS OF THE STUDY

The study focused on an investigation of a small number of NGs' and reflected the onboarding experiences following a period of three months from commencement of employment in one District only. Results of this study may not be generalisable to other health areas, states and countries. Further investigations about how the onboarding process would impact socialisation across a longer term would be useful, and how it relates to the competence of NGs' to deliver evidence-based, safe patient care.

CONCLUSION

Onboarding processes for NGs are important to provide a smooth and meaningful transition experience into health organisations and clinical practice environments to ensure a more positive experience and increase employee engagement. This is critical, especially for health services which often experience high vacancy rates. This study has been instrumental in facilitating open discussion about the level and type of organisational support required for NGs. It has also been the driver for the exploration of sustainable strategies to meet NGs' needs. Re-designing the onboarding process to make it more relevant and consistent will enhance relationship-building and employee socialisation which are imperatives when trying to meet both the NGs professional needs and those of the organisation.

Acknowledgments: The authors would like to thank all new graduate nurses and midwives who participated in this study. I would like to thank the Nursing and Midwifery Research Centre for their assistance in editing of this manuscript.

Declaration of conflicting interests: All authors declare that they have no conflict of interest in relation to this work.

Funding support: No funding was received for the conduct or write up of this work.

REFERENCES

1. Chao GT. Organizational Socialization: Background, Basics, and a Blueprint for Adjustment at Work. 2012. 579-614
2. Bauer TN. Onboarding new employees: maximizing success. SHRM Foundation's Effective Practice Guideline Series. 2011 [Available from: https://www.shrm.org/foundation/ourwork/initiatives/resources-from-past-initiatives/Documents/Onboarding%20New%20Employees.pdf (accessed 12 July 2018)
3. Phillips C, Esterman A, Kenny A. The theory of organisational socialisation and its potential for improving transition experiences for new graduate nurses. *Nurse Educ Today*. 2015;35(1): 118-24.
4. Feng RF, Tsai YF. Socialisation of new graduate nurses to practising nurses. *J Clin Nurs*. 2012;21(13-14): 2064-71.
5. Thompson E. Successfully onboarding new employees. *OR Nurse*. 2014;8(5):6.
6. Tuckett A, Eley R, Ng L. Transition to practice programs: what Australian and New Zealand nursing and midwifery graduates said. A Graduate eCohort Sub-Study. *Collegian*. 2017;24:101-8.
7. Ankers MD, Barton CA, Parry YK. A phenomenological exploration of graduate nurse transition to professional practice within a transition to practice program. *Collegian*. 2018;25(3): 319-25.
8. Blevins S, Millen E. Foundation for New Graduate Nurse Success. *Medsurg Nurs*. 2016;25(3): 194-5.
9. Thomas C, Bertram E, Allen R. The transition from student to new Registered Nurse in professional practice. *J Nurs Staff Dev*. 2012;28(5): 243-9.
10. Strauss E, Ovnat C, Gonen A, Lev-Ari L, Mizrahi A. Do orientation programs help new graduates? *Nurse Educ Today*. 2016;36:422-6.
11. Allan HT, Magnusson C, Evans K, Horton K, Curtis K, Ball E, et al. Putting knowledge to work in clinical practice: understanding experiences of preceptorship as outcomes of interconnected domains of learning. *J Clin Nurs*. 2018;27(1-2):123-31.
12. Baxter PE. Providing orientation programs to new graduate nurses: points to consider. *J Nurs Staff Dev*. 2010;26(4): E12-7.
13. Edwards D, Hawker C, Carrier J, Rees C. A systematic review of the effectiveness of strategies and interventions to improve the transition from student to newly qualified nurse. *Int J Nurs Stud*. 2015;52(7): 1254-68.
14. Irwin C, Bliss J, Poole K. Does preceptorship improve confidence and competence in newly qualified nurses: a systematic literature review. *Nurse Educ Today*. 2018;60: 35-46.
15. Duchscher JEB. Transition shock: the initial stage of role adaptation for newly graduated registered nurses. *J Adv Nurs*. 2009;65(5): 1103-13.
16. Kenny A, Kidd T, Nankervis K, Connell S. Mature age students access, entry and success in nurse education: an action research study. *Contemp Nurse*. 2011;38(1-2): 106-18.
17. Parker V, Giles M, Lantry G, McMillan M. New graduate nurses' experiences in their first year of practice. *Nurse Educ Today*. 2014;34(1): 150-6.
18. Lin P, Viscardi M, McHugh M. Factors influencing job satisfaction of new graduate nurses participating in nurse residency program:a systematic review *J Contin Educ Nurs*. 2014;45(10): 439-52.
19. Moloney W, Boxall P, Parsons M, Cheung G. Factors predicting Registered Nurses' intentions to leave their organization and profession: A job demands-resources framework. *J Adv Nurs*. 2018;74(4): 864-75.
20. Health Workforce Australia (HWA). Health Workforce 2025 - Doctors, Nurses and Midwives. 2012.
21. Ohr S, Holm D. Evaluation of the Transition of New Graduate Nurses and Midwives in HNELHD. Unpublished. 2018.
22. NSW Nursing and Midwifery Office (NAMO). Retention of New Gradate Nurses and Midwives NSW 2008-2012. 2014.
23. Etchegaray JM, Fischer W. Survey research: be careful where you step. *Qual Saf Health Care*. 2006;15(3): 154–5.
24. Erlingsson C, Brysiewicz P. A hands-on guide to doing content analysis. *Afr J Emerg Med*. 2017;7: 93-9.
25. Hunter New England Local Health District (HNELHD). Excellence 2017 [Available from: http://intranet.hne.health.nsw.gov.au/excellence2 (accessed 30 April 2017).
26. Walker A, Costa B, Foster A, deBruin R,L. Transition and integration experiences of Australian graduate nurses: a qualitative systematic review. *Collegian*. 2017;24: 505-12.
27. Hofler L, Thomas K. Transition of new graduate nurses to the workforce: challenges and solutions in the changing health care environment. *N C Med J*. 2016;77(2): 133-6.

Australian Journal of Advanced Nursing 37(2) • 2020.372.65

Registered nurses as role models for healthy lifestyles

AUTHORS

PENNY HEIDKE BN GDLT M HSc PHD (cand)[1]

WENDY L MADSEN BA MHSc PhD GCFL[2]

ERIKA M LANGHAM MPopStud[2]

1 School of Nursing and Midwifery, CQUniversity Australia.

2 School of Health, Medical and Applied Sciences, CQUniversity Australia.

CORRESPONDING AUTHOR

PENNY HEIDKE School of Nursing and Midwifery, CQUniversity Australia, Building A, 90 Goodchap Street, Noosaville, QLD. 4566. Phone: +61 7 5440 7019
Email: p.heidke@cqu.edu.au

ABSTRACT

Objective: The aim of this paper is to report on registered nurses' adherence to current Australian health behaviour recommendations. Barriers and facilitators to healthy lifestyles, and their attitudes towards being role models and promoting healthy lifestyles to their patients.

Background: It is widely accepted that a healthy diet, limiting alcohol consumption, abstinence from smoking and regular physical exercise are important components of healthy lifestyles and play a significant role in preventing chronic diseases. Nurses are well situated to contribute to providing health and patient education regarding modifiable health risk factors, however their own adherence to health behaviours may impact this.

Study design and methods: The research is a mixed methods study of 123 registered nurses from both public and private organisations in regional Queensland. Data for this paper were generated from an online survey which is the first of two phases in the broader study.

Results: Four health risk factors were examined; diet, smoking, physical exercise and alcohol consumption. BMI was also calculated and considered as a fifth risk factor. Of this sample, 13% of participants met the guidelines for fruit and vegetable intake, 5.2% smoked, and only 24.2% exercised enough to be classed sufficiently active for their health. Of the 93.62% of participants whom consumed alcohol, 69.3% consumed more than two standard drinks/day. The most common barriers to adhering to healthy lifestyles were shift work, long working hours and family commitments.

Conclusion: Many nurses are not adhering to healthy lifestyle recommendations. It is recommended that the health and wellbeing of our health professionals, especially nurses be considered. Providing support and resources to enable them to care for themselves, may in turn allow them to better care for patients.

Implications for research, policy, and practice: Research is needed into strategies to enable registered nurses' better work/life balance. To make a real difference to health outcomes, nurses own health and health education needs to be made a priority that is supported and implemented at multiple points: by policymakers, within nursing practice, nursing curriculum, and in healthcare institutions. Nurses need to be supported to provide health education to their patients with better resources, education, and time allocation. Future research should include studies conducted in different regions or ideally a large nationally representative sample.

Key words: lifestyle risk factors, health behaviour, physical exercise, patient education

https://doi.org/10.37464/2020.372.65

What is already known about this topic?

- Healthy diet, limiting alcohol consumption, not smoking and regular physical exercise are important for healthy lifestyles.
- Nurses are seen as role models for patients and the community.

What this paper adds:

- Insight into nurse's adherence to health guidelines.
- Nurses beliefs of how their own behaviours impact their role model status and the health education they provide to people they care for.

OBJECTIVE

It is widely accepted that a healthy diet, limiting alcohol consumption, abstinence from smoking and regular physical exercise are important components of healthy lifestyles and play a significant role in preventing chronic diseases.[1] There is a lack of adherence to healthy lifestyles, at a population level, that has contributed to the increasing prevalence of obesity and smoking related illnesses.[2] This phenomenon has attracted significant attention at both national and global levels. Nurses are well positioned to contribute to providing health and patient education regarding modifiable health risk factors.[3] However, some studies report that nurse's personal adherence to healthy lifestyle recommendations is decreasing.[4–6] Furthermore, nurses' own behaviours and values are believed to impact on the quality and amount of health education they provide to their patients.[3,7]

This paper presents the findings of an exploratory research project that considered the role of registered nurses (RNs) in promoting healthy lifestyles. Underpinning the research is the premise that whilst health education is a recognised standard for practice for Australian RNs,[8] the reality of nursing practice is significantly restricting the ability of nurses to adequately meet this competency expectation.[9] Furthermore, nurses' own health behaviours may be an inhibiting factor in nurses effectively promoting healthy lifestyles to others.

BACKGROUND

In Australia, the Standards for Practice require that the role of the RN includes the promotion and maintenance of health and prevention of illness for individuals.[8] Standard 2.4 states RNs are to 'provide support and direct people to resources to optimise health-related decisions' whilst standard 3 mandates that RNs must ensure their own health and wellbeing as well as 'provide information and education to enable people to make decisions and take action in relation to their health'.[8] However, sometimes there is a dissonance between what nurses educate their patients on in regard to healthy lifestyles, and their own health behaviour.[10,11]

When RNs personally engage in behaviours that are detrimental to their own health, they not only put the profession in a negative light,[12] but their health behaviour may negatively impact on the behaviour of others through behaviour modelling.[13] Research is being undertaken to identify the cause of dissonance between what nurses say and what they do, and the rationale behind what prevents some nurses from adhering to the health behaviour they are expected to teach and model.[5] In Australia, with increased attention on preventing and decreasing lifestyle-related diseases, nurses are anticipated to be behavioural role models for their patients, families and the wider community.[14] When nurses adhere to healthy lifestyles it not only enhances their own health but also increases their credibility as health educators and role models. The focus of the work to date has been on the four modifiable health behaviours most commonly reported by the World Health Organization (WHO): smoking, unbalanced diet, excessive alcohol consumption and lack of physical activity.[1] Little is currently known of the personal dietary and exercise patterns of the RN workforce from an Australian perspective. One cross-sectional Australian study by Perry and colleagues found that even though nurses perceive they have good health, almost half indicated they had chronic disease and other health risk behaviours.[12] Other worldwide studies have tended to concentrate on health behaviours in nursing students,[13] obesity in healthcare workers,[15,16] and the impact of shift patterns on the health of nurses,[17,12] and health and chronic diseases.[5] However, research into actual excess weight and associated health behaviours in nurses is limited.[18] Of the studies conducted on nurses, most have identified prevalence rates of health risk factors amongst nurses at least equivalent to, or greater than general population levels.[5,12]

The relationship between nurse's personal health behaviours and nurse's counselling of patients about health issues has been examined in several studies. Researchers have found that nurses who practised positive healthy behaviours were more likely to advise patients in relation to these and reported that compliance of health promoting behaviours in patients had been influenced by the behaviours of those nurses caring for them.[7]

The Australian guidelines for adults' state: 'Guideline 1 - drinking no more than two standard drinks on any day reduces the lifetime risk of harm from alcohol-related disease or injury'.[19] The guidelines also recommend that to reduce the risk of injury on a single occasion ofdrinking, adults should drink 'no more than four standard drinks on a single occasion' (Guideline 2).[19] Australian dietary guidelines recommend a daily intake of five servings of vegetables and two servings of fruit.[20] The recommended national guidelines for physical activity are exercise at least five days per week, with 150 minutes or more being classed as sufficiently active and less than 150 minutes per week or less than five sessions a week classified as 'insufficiently active' to maintain health.[21]

There have been no studies identified that focus on RNs in regional Australia, where the general population are found to have higher rates of smoking and alcohol consumption, and lower rates of meeting physical activity and fruit and vegetable consumption than urban populations.[22] This paper focuses on the first phase of a larger exploratory, sequential mixed methods study. This research aimed to measure the prevalence of modifiable risk factors in RNs within a regional Queensland area and to explore the perceptions of nurses towards promoting healthy lifestyles to their patients.

METHOD

A cross-sectional, online (SurveyMonkey®) anonymous survey of RNs in the region was conducted (n = 123).

DATA COLLECTION

The survey instrument was developed using core items from the National Health Survey (NHS) and National Nutrition and Physical Activity Survey (NNPAS).[21,24] Full details of the survey design and measurements are available on the ABS website.[21] The instruments were adapted for this study by selecting scales or questions of direct relevance to the research aim. Questions were included that related to the health risk factors of tobacco smoking, dietary behaviours (fruit and vegetable intake), physical activity, alcohol consumption, height, weight as well as self-rated health and weight status. Self-rated health is a commonly used health outcome measure and has been found to be valid and reliable in a wide range of populations.[25] The survey also included open-ended questions relating to: barriers RNs face in adopting and maintaining healthy behaviours themselves; and suggested strategies to overcome these barriers, and whether they believed that nurses who engage in unhealthy behaviours are less likely to counsel their patients on these behaviours. As the tool utilised a variety of formats in the question designs, Cronbachs alpha was unable to be used for validity.[26] A copy of the final survey is available from the corresponding author on request.

PARTICIPANTS

Convenience sampling was utilised and data collected via an online survey, hosted on SurveyMonkey®. The explanatory letter on the first page of the survey outlined the research project and reminded participants of the inclusion criteria, that is, RNs who lived in the study region. The survey was posted to social media accounts; that being the researchers' personal Facebook page and the local nurses Facebook group via hyperlink, asking RNs to share on their own pages and also a URL to share via email with those that did not have access to Facebook. To reduce the effects of selection bias within the limits of the study, the survey was anonymous, and nurses were asked to share as broadly as possible with colleagues.

DATA ANALYSIS

The data was downloaded from SurveyMonkey® into Microsoft Excel for checking and cleaning before being uploaded to SPSS v22 for statistical analyses.[27] Frequencies and descriptive statistics were generated and checked for each variable and any statistical outliers were identified. The open-ended question data from the individual responses were analysed using both content and thematic analyses identifying key words, frequencies and themes. Content analysis was used to code the responses to the first three open-ended questions as the responses were only short.[28] An inductive categorisation method was utilised in which recurring factors found in the responses were identified.[29] The final open-ended question was analysed using thematic analysis as participants had responded in short paragraphs allowing emergent themes to evolve from the data.

ETHICS

The project received approval by the Human Ethics Research Review Panel at CQUniversity (PROJECT H14/07-167). Participant consent to take part in the study was indicated upon their completion and submission of the survey.

RESULTS

In total 123 responses were received of which 101 had complete data and were subsequently analysed. The estimated population of RNs in the region is 600, according to Human Resource records from Qld Health and the private healthcare facilities. Therefore, the response rate was estimated to be approximately 20.5% of RN population.

The age distribution (23-65 years, average 47 years) of the sample is relatively consistent with the RN population of Australia, which is 44.4 years.[30] The distribution of gender in this sample was 90% females and 10% males. All participants were qualified RNs working: part-time (51%); full-time (46%); or currently unemployed (3%). The average years of experience were 17.16 years (SD 12.435).

SELF-RATED HEALTH AND WEIGHT

Participants rated their health on a standard five-point scale from excellent to poor with the majority rating their health as being good (42%). Participants self-rated their weight status although when their Body Mass Index (BMI) was calculated using their self-reported height and weight, estimations of weight classification were consistently inaccurate (see Table 1). When asked had their weight altered in the last twelve months, 22.7% reported an increase while 25.7% reported a decrease; 51.5% reported their weight had stayed the same.

TABLE 1: COMPARISON OF PARTICIPANTS' SELF-RATED WEIGHT VS. CALCULATED BMI

Weight status	Self-Rated (%)	BMI* (calculated)	Australian general population (%)
Overweight* for BMI includes Overweight and Obese	57.84%	70.21%	63.4
Healthy Weight	39.22%	29.79%	35.0
Underweight	0.98%	Not calculated	1.6
Currently pregnant	1.96%	Not calculated	n/a

Total N=102

HEALTH BEHAVIOURS

Only 5.2% of participants identified that they currently smoke (4.2% daily smokers; 1% less than daily). Of those participants who responded that they did not currently smoke, 55.6% identified as ex-smokers and 15.7% as having never smoked.

Nearly all participants in this study (93.62%) reported having consumed alcohol in the last 12 months: less than weekly (56.82%); 1-2 days a week (17.05%); 3-4 days a week (12.5%); 5-6 days a week (7.95%); and every day (4.55%). On the occasions that they did drink alcohol in the last twelve months, 69.3% reported drinking more than the recommended two standard drinks on a single occasion,[19] and 39.7% reported drinking more than the recommended four standard drinks on a single occasion. The 55-64 year age group (N=16) most closely met the Australian guidelines for alcohol with 56.3% drinking within acceptable limits.[19] Over the last twelve months, 8.89% said their alcohol intake had increased, 21.11% said it had decreased and 70% said it had stayed about the same.

TABLE 2: PERCENTAGE OF PARTICIPANTS THAT MET ALCOHOL GUIDELINES

Age Groups	% of sample that met NHRMC guidelines for alcohol consumption		
	Guideline 1	Guideline 2	Both Guidelines
18-24	60.0	60.0	20.0
25-34	50.0	56.3	43.8
35-44	36.7	50.0	30.0
45-54	40.6	65.6	37.5
55-64	56.3	87.5	56.3
65-74	100.0	100.0	100.0

Only 18% of participants were meeting the Australian dietary guidelines' recommended intake of vegetables (five servings per day), but 61.7% were meeting the recommended daily intake of fruit (two servings per day).[20] When compared to the guidelines, 13% of participants met both the recommended daily guidelines for vegetables and fruit. The age group most likely to meet the dietary guidelines were between 45 and 54 years (30.8%). Those who worked part-time (15.7%) were also more likely to adhere to the dietary guidelines.

Physical activity was analysed based on whether participants met the recommended national guidelines.[21] Nearly all participants (N=99) responded to the questions regarding their physical activity. Table 3 shows that over half of the participants exercised less than 150 minutes per week and were classified as 'insufficiently active' to maintain their health. The age group that met the guidelines the most was 45-54 years (52.9%).

TABLE 3: COMPARISON OF PARTICIPANTS' PHYSICAL ACTIVITY TO THE RECOMMENDED GUIDELINES VS. THE AUSTRALIAN POPULATION

Recommended Guidelines	% of Participants	% of Australian general population
Sufficiently active: 150 mins or more and five sessions per week	24.2	55.5
Insufficiently active: 1-149 mins or less than five sessions/week	59.6	29.7
Inactive: 0 mins	16.2	14.8

ADDING UP THE LIFESTYLE RISK FACTORS

The prevalence of risk factors is frequently considered in isolation. However, there is increasing evidence that they also have an interactive and cumulative effect.[22,31] Figure 1 shows the six risk factors used in the analysis for this section.

RISK FACTOR	GUIDELINE IDENTIFIER
Smoking	Current daily smoking
Physical inactivity	Insufficient time and sessions
Low fruit consumption	Less than two serves
Low vegetable consumption	Less than five serves
Risky alcohol consumption	Over two standard drinks in any one day
Obesity	BMI of 30 or more

FIGURE 1: RISK FACTORS USED IN THE ANALYSIS FOR THIS SECTION

TABLE 4: PERCENTAGE OF MULTIPLE RISK FACTORS COMPARED TO AGE GROUPS

Age Groups	% of age group with multiple risk factors						
	0	1	2	3	4	5	6
18–24	0.0	0.0	20.0	60.0	20.0	0.0	0.0
25–34	0.0	6.3	37.5	25.0	25.0	0.0	6.3
35–44	3.3	3.3	6.7	40.0	40.0	6.7	0.0
45–54	3.1	3.1	12.5	50.0	18.8	9.4	3.1
55–64	0.0	12.5	31.3	31.3	18.8	6.3	0.0
65–74	0.0	0.0	0.0	0.0	100.0	0.0	0.0

Most participants (98%) had at least one of the six risk factors listed above (Figure 1), with the majority having two to four (85%) (Table 4). There was no significant difference in the distribution of risk factors according to gender or age. This may be attributed to the sample being mostly female and the median age 47 years.

BARRIERS AND STRATEGIES

These questions asked participants to elucidate on the barriers and strategies to adopting and maintaining healthy behaviours themselves. Participants identified two main issues regarding perceived barriers RNs face in adopting and maintaining healthy behaviours themselves. Shift work and working long hours were cited by many participants (61.5%), with time and family commitments also being cited by almost half (47.4%). The detrimental impact of shift work was described by one participant:

> *'Shift work and being on our feet all day, early starts, makes me tired, so I am more reluctant to go to the gym or go for a run. Doing shift work makes it hard to get into a good routine with diet sometimes also.'*

Whilst the lack of time was explained by another participant:

> *'Time poor. I go to work, long hours, then come home to family, kids, chores and it is often extremely difficult to find ten minutes to do a survey let alone find 30 minutes to walk around the block.'*

When considering strategies to overcome perceived barriers to adopting and maintaining healthy lifestyles, prioritising, planning and making time was reported as a potential strategy by 34.4% of participants, whilst 28% suggested better rostering and improved work-life balance as well as education and support. One participant outlines how planning could be a strategy:

> *'Taking the time to plan healthy meals ahead of time and ensure that healthy snacks are brought to work all the time so that the temptation of vending machine food is not there.'*

Whilst another discussed an improvement to rostering:

> *'If shift rotation must be done, do the shifts in blocks so that a routine for eating, sleeping and living can be established.'*

Over half of the participants believed that RNs who engage in unhealthy behaviour were less likely to counsel their patients on these behaviours. This is at odds with the belief held by the majority of participants that an RN has an important role in the provision of health education. While there was no statistically significant relationship, there was a slight tendency towards not providing health education by those not engaging in the healthy behaviours and that they saw this in terms of hypocrisy, credibility and self-efficacy.

The feeling of hypocrisy was highlighted by one participant:

> *'It's easy to give education on healthy behaviours, however, up until I quit smoking six months ago I always felt like a hypocrite when advising others to quit smoking. I think people who are engaging in healthy behaviours would be more likely to provide education as people who don't would probably feel ashamed or feel like a hypocrite.'*

Another participant emphasised the importance of credibility:

> *'If you aren't walking the walk you can't talk the talk. Nurses who are overweight, smoke, eat loads of takeaway do not portray healthy habits to patients and patients would be less likely to want to change if they see that in nurses who do the same as themselves.'*

Those who believed nurses' own health behaviours did not influence their health education practices saw health education as part of their job that was not reflective of their own lifestyle. One participant stated it is not taken into consideration:

> *'Because when it comes to looking after patients and providing education this is not really taken into consideration what we do in our own lives. It's like the saying do as I say, not as I do.'*

The participants reported that their knowledge and experiences made them more relatable and authentic and that they believed patients felt they could understand the challenges and barriers to achieving good health.

LIMITATIONS

The current study has a number of limitations that are worth highlighting. The study utilised a convenience sample conducted in a single regional area, which means the results are not generalisable to RNs nationally. The geographic restriction might also influence particular findings, for example comments on workload and staffing may be more reflective of conditions in that area. The sample size and question format limited the analysis able to be undertaken.

DISCUSSION

RNs working in regional Australia play a particularly important role in promoting healthy lifestyles to their patients and the community at large.[32] While this study has demonstrated some adherence to recommended guidelines, it has highlighted RNs in regional Queensland may not be adhering as closely to national guidelines around healthy behaviours and that this may be impacting on their willingness to provide advice around healthy lifestyles.

Self-rated health of the cohort in this study was lower than the Australian general population as reported by the ABS.[21] This could be reflective of the influence of the risk factors under investigation – whilst smoking rates were lower, and fruit and vegetable consumption were higher than the general population, alcohol consumption was higher, physical activity was lower than the general population and there were higher rates of overweight and obesity.[21] These findings are consistent with another study by Perry and colleagues,[23] of nurses in New South Wales, although smoking rates were twice as high in their cohort, fruit and vegetable intake, low physical activity and risky drinking were common. When considering self-rated weight however, the opposite effect of under reporting occurred. This is unsurprising given previous findings around the under estimation of self-reported weight in general.[33]

The prevalence of risk behaviours is of concern both in terms of the RN's health outcomes but also the influence on providing health education. From a chronic disease perspective, as the numbers of risk factors increase, so does the likelihood of developing health problems.[22,34,35] In addition to the prevalence of chronic disease rates, with the ageing of the RN workforce in Australia (current average age of 44.3 years),[22] reductions in overall health also put them at higher risk of injury and emotional disease through compromised work performance.[5,18]

Even though we know that adherence to healthy lifestyles directly reduces the incidence of chronic diseases and work-related injuries as well as increasing wellbeing, there are barriers to this adherence. The high frequency of shift work was cited as a barrier in this study and this is consistent with findings from other studies.[17,22] The present study identified that RNs working part-time were more likely to meet dietary guidelines, suggesting the influence of the time pressures around full-time work may have a negative influence.

However, a study by West and colleagues,[36] which critically analysed findings from two previous studies, claim the opposite and assert that nurses who do shift work have more time to engage in activities such as going to the gym or exercise classes and that nurses are aware of the need to maintain health. The author's claimed that nurses can develop a shift work tolerance and use it to negotiate a more manageable work/life balance. It is important to highlight that these findings were from mid-life nurses, which is consistent with some findings within the present study. In the present study RN's in the older age brackets were also more likely to meet guidelines. Whether this is because they were less likely to have younger children creating additional demands on their time or because they have developed shift work tolerance is an issue for future investigation.

The strategies suggested by participants for assisting them to achieve health behaviour guidelines were very broad. Two of the suggestions were directed at themselves, highlighting a perceived need to prioritise, plan and make time for healthier meals and physical activity, and the desire for a better work life balance. The findings of the current study illustrated that nurses who had achieved success in certain areas such as losing weight, increasing physical activity and/or stopping smoking felt more motivated to adhere to the recommended guidelines and confident as role models for good health. They were also more likely to feel confident in educating patients on the behaviours they had success in achieving. Whereas those who smoked or were overweight were less confident in providing education and more likely to feel hypocritical and avoid these topics with patients. Other researchers have found similar results reporting that nurses felt patients would heed advice given by healthy role models and that this would add credibility and validity to the health education they gave whilst also reflecting well on the organisation where they work.[13,37] Confidence and self-efficacy in overcoming barriers and providing regular health education would then in turn improve patient care.[13]

Some participants in the current study believed that their own health did not impact on the care and education they provided to patients and that the fact they were not seen as 'perfect' would allow patients to feel less threatened and that they understood the same challenges. These beliefs were also reported in other studies, with some believing that if nurses' own health behaviours were seen as those of a real person, patients would connect more and that unhealthy nurses were able to provide better care as they have a greater capacity to empathise with patients as they suffer the same conditions.[38] With the rising incidence of non-communicable diseases, many researchers are arguing that nurses are crucial as healthy role models and are uniquely placed to support the delivery of government and international health policy.[23,39] For RNs to make a real difference to health outcomes, nurses own health and health education needs to be made a priority that is supported and implemented at multiple points: by policymakers, within nursing practice, within nursing curriculum, and in healthcare institutions. [23,37,40]

As mentioned earlier, this paper reports the results of the first stage of the research. These informed the development of interview questions used in phase two which delves more deeply into the value placed on health education, personal beliefs, and perceived patient perceptions around nurse credibility and patient readiness to accept education.

CONCLUSION

The International Council of Nurses[41] issued a call to action for nurses everywhere to lead the fight against chronic disease; to act as healthy role models for their families, their patients and their communities. Nurses need to be physically and mentally healthy to reliably focus on providing the best care for themselves and others. The results of this study highlight the dissonance between the health behaviours of RN's for this regional area and the national guidelines as well as the perceived influence of shift work, long working hours and family commitments on them. Whilst this was a small exploratory study, it identifies some individual and systematic challenges to RN's meeting health behaviour guidelines.

IMPLICATIONS FOR FURTHER RESEARCH, POLICY, AND PRACTICE

Facilities need to implement more strategies to enable nurses' better work/life balance especially around rostering. Nurses need to be supported to provide health education to their patients with better resources, education and time allocation. Future research should include studies conducted in different regions or ideally a large nationally representative sample.

Funding support: No funding was received in relation to the work reported in this manuscript. This research was part of a Research Higher Degree through CQUniversity Australia.

Declaration of conflicting interests: The authors declare no conflict of interest.

REFERENCES

1. World Health Organization. A comprehensive global monitoring framework including indicators and a set of voluntary global targets for the prevention and control of noncommunicable diseases [Internet]. Who.int. 2012 [accessed 10 Feb 2019]. Available from: http://www.who.int/nmh/events/2012/discussion_paper2_20120322.pdf
2. Estabrook, B, Zapka, J, Lemon, S.C. Evaluating the Implementation of a Hospital Work-Site Obesity Prevention Intervention Applying the RE-AIM Framework. *Health promot pract.* 2012;13(2): 190-197.
3. Bakhshi S, Fei S, Murrells T, While A. Nurses' health behaviours and physical activity-related health-promotion practices. *Br J Community Nurs.* 2015; 20(6):289-96.
4. Blake H, Malik S, Mo PK, Pisano C. 'Do as say, but not as I do': are next generation nurses role models for health? *Perspect Public Health.* 2011;131(5):231-9.
5. Gallagher R, Perry L, Duffield C, Sibbritt D, Ying Ko C. The health of working nurses: Hypertension prevalence, awareness, treatment and control by medication. *J Nurs manag.* 2018 May;26(4):403-10.
6. Neall RA, Atherton IM, Kyle RG. Nurses' health-related behaviours: protocol for a quantitative systematic review of prevalence of tobacco smoking, physical activity, alcohol consumption and dietary habits. *J Adv Nurs.* 2016: Jan;72(1):197-204.
7. Fie S, Norman IJ, While AE. The relationship between physicians' and nurses' personal physical activity habits and their health-promotion practice: A systematic review. *Health Ed J.* 2013;72(1):102-19.
8. Nursing Midwifery Board of Australia. Registered nurse standards for practice. 2016. [online] Available at: http://www.nursingmidwiferyboard.gov.au/Codes-Guidelines-Statements/Professional-standards.aspx [Accessed 19 Feb 2020].
9. Beaudet N, Richard L, Gendron S, Boisvert N. Advancing population-based health-promotion and prevention practice in community-health nursing: Key conditions for change. *Adv Nurs sc.* 2011: Oct 1;34(4): E1-2.
10. Al Hosani S, Al Ali M, Al-Marashda K, Al-Shamsi N, Al-Ansari T, Al-Behandy A, et al. Smoking Prevalence, Attitudes and Behaviors of Primary Healthcare Providers and its Impact on Their Smoking Cessation Counseling Practices. Ibnosina. *J Med & Biomed Sc.* 2015:47-55.
11. Aydin LY, Baltaci D, Ozturk S, Saritas A, Eroz R, Celepkolu T, et al. Smoking habits of nurses and midwives and their attitudes tobacco control; a primary care based study from four major cities of Turkey. *HealthMed.* 2012;6(12):3920-8.
12. Perry L, Gallagher R, Duffield C. The health and health behaviours of Australian metropolitan nurses: an exploratory study. *BMC nurs.* 2015 Dec 1;14(1):45.
13. Blake H, Harrison C. Health behaviours and attitudes towards being role models. *Br J Nurs.* 2013;22(2):86-94.
14. Malik S, Blake H, Batt M. How healthy are our nurses? New and registered nurses compared. *Br J Nurs.* 2011;20(8):489-96.
15. Esposito EM, Fitzpatrick JJ. Registered nurses' beliefs of the benefits of exercise, their exercise behaviour and their patient teaching regarding exercise. *Int J Nurs Pract.* 2011;17(4):351-6.
16. Kyle RG, Neall RA, Atherton IM. Prevalence of overweight and obesity among nurses in Scotland: A cross-sectional study using the Scottish Health Survey. *Int J Nurs Stud.* 2016;53:126-33.
17. Jensen HI, Larsen JW, Thomsen TD. The impact of shift work on intensive care nurses' lives outside work: A cross-sectional study. *J Clin Nurs.* 2018 Feb;27(3-4): e703-9.
18. Tuckett A, Henwood T. The impact of five lifestyle factors on nurses' and midwives' health: the Australian and New Zealand nurses' and midwives' e-cohort study. *Int J Health Promot Educ.* 2015 May 4;53(3):156-68.
19. National Health and Medical Research Council. Australian guidelines to reduce health risks from drinking alcohol. Canberra: Commonwealth of Australia; 2009 [accessed 29 May 2016]. Available from: www.nhmrc.gov.au/_files_nhmrc/publications/attachments/ds10-alcohol.pdf
20. National Health and Medical Research Council. Australian Dietary Guidelines. Canberra: Commonwealth of Australia; 2013 [accessed 23 June 2018]. Available from: http://www.nhmrc.gov.au
21. Australian Bureau of Statistics. Australian Health Survey: Users' Guide, 2011-13 (cat. No.4363.0.55.001) [Internet]. Canberra: ABS; 2013 [accessed 15 February 2017]. Available from: https://www.abs.gov.au/ausstats
22. Australian Institute of Health and Welfare. *Australia's health 2016. Australia's health series no. 16.* (cat. no. AUS 199). [Internet]. Canberra: AIHW; 2016. Available from: https://www.aihw.gov.au/reports/australias-health/australias-health-2016
23. Lin P, Xu X, Gallagher R, Nicholls R, Sibbritt D, Duffield C. Lifestyle Health Behaviors of Nurses and Midwives: The 'Fit for the Future' Study. *Int J Environ Res Public Health.* 2018;15(5):945.

24. Department of Health. *Australia's Physical Activity and Sedentary Behaviour Guidelines*. [Internet]. Canberra: Commonwealth of Australia; 2014 [accessed 12 January 2015]. Available from: http://www.health.gov.au/internet/main/publishing.nsf/content/health-pubhlth-strateg-phys-act-guidelines#apaadult
25. Gunasekara FI, Carter K, Blakely T. Comparing self-rated health and self-assessed change in health in a longitudinal survey: Which is more valid? *Soc Sci Med*. 2012;74(7):1117-24. doi: 10.1016/j.socscimed.2011.11.038
26. Dennick R, Tavakol M. Making sense of Cronbach's alpha. *Int J Med Educ*. 2011;2(1):53-5.
27. IBM Corp N. IBM SPSS statistics for windows. Version 22.0. 2013 Jul 29
28. Vaismoradi M, Turunen H, Bondas T. Content analysis and thematic analysis: Implications for conducting a qualitative descriptive study. *Nurs Health Sci*. 2013;15(3):398-405. doi:10.1111/nhs.12048
29. Bazeley P. Qualitative data analysis: Practical strategies: Sage; 2013.
30. AIHW. Who are nurses and midwives? [Online]. Available from: https://www.aihw.gov.au/reports/workforce/nursing-and-midwifery-workforce-2015/contents/who-are-nurses-and-midwives [Accessed 23 March 2017].
31. Chakravarty EF, Hubert HB, Krishnan E, Bruce BB, Lingala VB, Fries JF. Lifestyle Risk Factors Predict Disability and Death in Healthy Aging Adults. *Am J Med*. 2012;125(2):190-7.
32. Commonwealth of Australia. National Strategic Framework for Rural and Remote Health. [Online]. Brisbane: Department of Health; 2016. Available from: https://www1.health.gov.au/internet/main/publishing.nsf/Content/national-strategic-framework-rural-remote-health
33. Ambwani S, Chmielewski JF. Weighing the evidence: Social desirability, eating disorder symptomatology, and accuracy of self-reported body weight among men and women. *Sex roles*. 2013;68(7-8):474-83. doi:10.1007/s11199-012-0244-1
34. Department of Health. *Self-reported health status 2011–12. Health indicators: chronic disease and behavioural risk factors, Wide Bay Hospital and Health Service and Medicare Local detailed results*. Brisbane: Queensland Government; 2013.
35. Khan SB, Hafizullah M, Gul AM, Ali J, Qureshi MS, Shah ST, et al. Frequency of coronary heart disease risk factors among nurses. *JPMI*. 2012;26(4).
36. West S, Mapedzahama V, Ahern M, Rudge T. Rethinking shiftwork: mid-life nurses making it work! *Nurs Inq*. 2012;19(2):177-87. doi:10.1111/j.1440-1800.2011.00552.x
37. Blake H, Patterson J. Paediatric nurses' attitudes towards the promotion of healthy eating. *Br J Nurs*. 2015;24(2):108-12.
38. Aranda K, McGreevy D. Embodied empathy-in-action: overweight nurses' experiences of their interactions with overweight patients. *Nurs Inq*. 2014;21(1):30-8.
39. Darch J, Baillie L, Gillison F. Nurses as role models in health promotion: a concept analysis. *Br J Nurs*. 2017;26(17):982-8.
40. Garry B, Boran S. Promotion of oral health by community nurses. *Br J Community Nurs*. 2017 Oct 2;22(10):496-502.
41. International Council of Nurses (ICN). Delivering quality, serving communities: nurses leading chronic care. 2010. Available at: http://www.icn.ch/images/stories/documents/publications/ind/indkit2010.pdf

RESEARCH ARTICLES

Nurses' documentation of falls prevention in a patient centred care plan in a medical ward

AUTHORS

CAGLAYAN YASAN Dip(Mgmt) MEd BSc Cert IV[1]

TRISH BURTON PhD MEd BSc BAppSc Dip(AppSc) RN FCNA[2]

MARK TRACEY MBiostat BSc[3]

1 College of Health and Biomedicine, Victoria University, Melbourne, Victoria, Australia.

2 Nursing and Midwifery, College of Healthcare Sciences, James Cook University. Queensland, Australia.

3 The Northern Hospital, Northern Health, Epping, Victoria, Australia.

CORRESPONDING AUTHOR

CAGLAYAN YASAN College of Health and Biomedicine, Victoria University, PO Box 14428, Melbourne, Victoria, Australia. 8001. Phone: + 61 3 3991 2131
Email: Caglayan.Yasan@vu.edu.au

ABSTRACT

Objective: To evaluate the consistency of nurses' documentation in the falls prevention assessment tool, and to ascertain whether patients identified as high risk of falling had falls preventative strategies implemented.

Background: Falls are one of the leading causes of adverse events for patients in the hospital setting. The current practice of implementing falls prevention strategies for patients has not been able to be sustained, which remains a challenge for healthcare providers. Among the falls prevention strategies, falls risk assessment tools have been identified as a crucial element in falls prevention so as the number of falls are minimised.

Study design and methods: A retrospective chart audit, with the auditing of falls assessment documentation on the Patient Centred Care Plan.

Results: The Patient Centred Care Plan audit revealed that 60.8% of patients (n=508) were identified as high risk of falls by the principal investigator. For the cohort of patients identified by the nurses as having a high risk of falling (53.4%), 53.7% of patients had falls prevention strategies implemented, and only 17.5% of patients were engaged with their falls prevention plan. The strategies that were documented by the nurses on the care plan for the high-risk cohort were not implemented for 16.8% of the patients, and 29.5% of high risk of falls patients did not have documentation on the plan indicating their falls status.

Discussion: The findings show that there is a significant gap in the identification of high falls risk patients and the documentation and implementation of falls prevention strategies, between nursing staff records on the Patient Centred Care Plan and the audit conducted by the principal investigator for patients who are identified as high falls risk. As part of the audit patient engagement in their falls prevention plan revealed that patients were not informed of their falls risk status by the nursing staff.

Conclusion: The outcome from this audit signifies that not all high falls risk patients were identified as a high falls risk, and most of the high falls risk patients were not engaged in their falls prevention plan.

Implications for research, policy and practice: Understanding the current practices of falls prevention and raising nursing staff awareness of

https://doi.org/10.37464/2020.372.103

variance in the implementation of falls prevention strategies will improve the quality, efficiency of healthcare and patient safety.

Key words: Patient falls, assessment, implementation of strategies, patient engagement, health education

What is already known about the topic?

- Nurses' do not always document patient assessment and associated nursing care.
- There are multiple factors which impact on nurses' documenting assessment findings and implementation of nursing care.

What this paper adds:

- At times nurses rely on a falls risk assessment made on the previous day when not able to conduct a current falls assessment.
- Patients are not engaged in their falls prevention plan, even though they are identified as being of risk of falls.
- Patients are not aware of the implemented falls prevention strategies which are part of their care.

INTRODUCTION

Falls are multifactorial and there are several factors which may contribute to implementation of falls prevention strategy. These may include nursing staffs' knowledge, belief, attitudes, workloads and staff culture on the ward, environmental factors and access to required resources.[1] Falls assessment tools have been documented to be effective in reducing falls rates and serious injuries amongst inpatients.[1] Falls assessment tools help identify high falls risk patients, so that timely interventions can be put in place.[2]

The 6-PACK (STRATIFY) falls prevention tool was developed in the UK,[3] and has been studied and implemented in Australian, Canadian and European acute care hospitals.[4] The 6-PACK falls prevention tool is a nurse led assessment tool designed for acute care settings. As the tool is an accurate predictor of falls risk it has been recommended for use in best practice guidelines to prevent patient falls.[4] Aranda-Gallardo and colleague's (2015) longitudinal study of the STRATIFY falls prevention tool, highlights that this tool maintains validity and accuracy as a predictor of falls risk.[5]

PATIENT CENTRED CARE PLAN

In 2002, the hospital in this study implemented the nurse led 6-PACK falls prevention tool, as part of the Patient Centred Care Plan (PCCP). The PCCP is a patient's daily plan of care which is completed by nursing staff and updated each shift and is located in the patient's medical record. The falls prevention strategies documented on the falls prevention tool are: the placement of falls alert signs above the patients' bed, use of high low beds, establishment of a toileting regime, supervision of patients whilst in the bathroom, use of bed/chair alarms, ensuring walking aid is within reach, and patient engagement/education in falls prevention plan. The implementation of the 'Alert Sign' with one or more falls prevention strategies specified in the PCCP are deemed as correct implementation of the falls prevention plan. As part of the implementation of the tool, the new nursing staff are provided training on their falls prevention risk assessment tool as part of the orientation to the hospital. Ward-based training was delivered by the injury prevention champions of the designated wards, so as to prepare and engage nursing staff in providing falls prevention assessment and interventions. The injury prevention champions of the ward conducted monthly audits of the falls prevention assessment tool, and in response to the audit results feedback was provided to the nursing staff team each shift. The nursing staff were encouraged to instil the education provided to the next shift to improve the assessment, documentation and implementation of the documented falls prevention strategies. Also, during ward handover/huddles the location of the high falls risk patients is reinforced by the nurse in charge to increase nursing staff awareness.

In 2002, as part of the introduction of the falls prevention tool in the hospital that is the focus of this study a nine-year observational evaluation study demonstrated >80% compliance with falls prevention documentation.[6] Barker and colleagues reported a 25% reduction in falls rates over an initial 12 month period and in the second year of implementation, a 50% reduction.[6] There continued to be a sustained decrease in the number of falls for five years post implementation with use of this tool in the hospital setting.[4]

The hospital has continued to use the falls prevention tool as part of its falls prevention program. Falls incidents were also classified according to an Incident Severity Rating (ISR): 'A score of 1, 2, 3 or 4 that measures the severity of the impact caused to the person affected following an incident, ISR 1 being the highest or most severe and ISR 4 a near miss'.[7]

Despite ongoing use of the tool, in the 2015 to 2016 period, there was a 16% increase (Table 1) in the overall number of the reported falls (ie. 147 to 170), consisting predominantly of an increase in no harm/near miss events (ISR-4) and with an increase in the number of serious injuries (ISR-2) in the medical ward. The PI abstracted the data from RiskMan, which is the hospital's information management system. In response to the increased incidence of patient falls in 2015-2016, an audit was instigated to determine the factors that have influenced this increase as the falls prevention tool has been a consistent component of the hospital's fall prevention strategy.

TABLE 1: FALLS INCIDENT SEVERITY RATING (ISR) 1 TO 4 AND THE TOTAL NUMBER OF FALLS FROM JAN 2015 TO DEC 2016

Falls Severity Level 1–4	Total Number of Falls		Change
	Jan-Dec 2015	Jan-Dec 2016	%
Incident Severity Rating 1: Severe (death)	1	1	0
Incident Severity Rating 2: Moderate (head injury, subdural haematoma, fracture)	2	5	↑150
Incident Severity Rating 3: Mild (graze, abrasion, cuts)	47	46	↓2
Incident Severity Rating 4: No harm/near miss	97	118	↑21
Total number of falls 2015–2016	**147**	**170**	**↑16**

The aim of the present study was to determine the number of patients admitted to the medical ward identified by nurses as high falls risk, measure the consistency of nurses' documentation of the identified falls prevention strategies using the falls prevention tool, and assess whether preventative falls prevention strategies were implemented for these patients.

METHODS AND METHODOLOGY

Quantitative data collection consisted of RiskMan falls data and PCCP Audit. RiskMan is an information management system used by hospitals to report in-house incidents. The data obtained from RiskMan is the basis for the instigation of quality improvement projects at the hospital. The PCCP Audit facilitated a comparison between the principal investigator (PI) and nursing staff identifying the patients as high risk of falls and the data was aggregated statistically.[8] RiskMan data results are presented as total number of falls and percentages. The results demonstrated different patterns in the identification, assessment and documentation of implemented falls prevention strategies.[9]

ETHICAL CONSIDERATIONS

The audit is part of the Doctor of Philosophy research study, and the rights of patients and nursing staff were upheld. The data (patient medical records and RiskMan data) was initially collected in an identifiable format but once the datasets had been linked, the data was de-identified. Verbal and written consent was obtained from nursing staff. The approval for the research study was given by the Ethics Committee of Austin Hospital HREC Project Number: HREC17 Austin27 and Victoria University Ethics Committee.

PARTICIPANTS

The principal investigator (PI) is a registered nurse and worked as an Injury Prevention Coordinator in the hospital for two years where the study was conducted. The Injury Prevention Coordinator role was responsible for the continuing education of nursing staff in providing safe patient focussed nursing care. Part of this continuing education involved the documentation and implementation of the falls prevention risk assessment tool. The nurses were registered nurses who provided nursing care to the patients in the medical ward. The ward staff consisted of graduate nursing staff, registered nurses, clinical nurse specialist, associate nurse unit manager and the nurse unit manager. Nurses on the ward use a team approach when providing patient care and there is a strong culture for collaboration. After the monthly auditing of the falls prevention assessment tool, targeted education sessions were conducted by the injury prevention champions of the ward.

AUDIT SITE

A point prevalence audit of the PCCP was conducted by the PI from 20 July 2017 to 30 November 2017 in the 28-bed medical ward at a major hospital in Melbourne. The ward has the allocation of 16 dementia and four renal dialysis beds. The audit was conducted each Wednesday for twenty weeks of the PCCP.

DATA COLLECTION

The audit was undertaken in the afternoon by the PI so as the nursing staff on the morning shift has adequate time to complete the falls prevention risk assessment tool. Given that the same patient could be audited more than once, the audit results are presented in the unit of patient beds. The PI audited the falls prevention risk assessment tool documentation by the nursing staff, and also used the same falls prevention risk assessment tool to rate the patient's falls risk. The PCCP audit results provided information on the nursing assessment of the patient, documentation and implementation of targeted strategies to prevent falls on the medical ward. Furthermore, the audit provided a comparison between the nursing staff and PI identifying the patients falls risk score and patient engagement in their falls prevention plan. As per the hospital's falls prevention policy, identified high falls risk patients are required to be engaged in their falls prevention management plan by nursing staff, as falls prevention is part of a high falls risk patient's daily management plan. The nursing staff are required to discuss the patient's falls risk, implement falls prevention strategies and highlight the falls prevention patient brochure with the patient and clarify/answer any questions a patient or significant other may have in regard to their falls prevention plan. Once the education session is completed the date and who the education was provided by is documented on the PCCP to indicate to other nursing staff that falls education was provided.

DATA ANALYSIS

Descriptive analysis was conducted to provide an indication of the falls risk assessment tool completion and the falls risk minimisation methods utilised and in practice for each patient. Chi-squared test and Fishers' exact tests were used to test for differences between the registered nurses and the principal investigator, while continuous variables were assessed for normality, with the appropriate parametric (Student's t-test) and/or non-parametric (Man-Whitney) tests applied. All analyses were conducted using STATA statistical analyses software, version 15.1 (StataCorp, College Station, TX, USA), with a two-sided p-value of less than 0.05 indicating statistical significance. The number of statistical tests have been kept to a minimum to reduce the likelihood of false positive results, and to avoid any adjustment for multiple comparisons, such as a Bonferroni adjustment.[14]

RESULTS

From a review of nurse-documented falls assessment as indicated in Table 2, the documentation compliance of entering a RiskMan number on the PCCP was only 60% (n=18).

Of the 508 patient beds audited, 271 were identified as a high falls risk by nursing staff with an additional 38 patients identified as high falls risk by the PI (p=0.016). Sixty-one percent of the patients admitted to the medical ward over the audit period were identified as having a high risk of falls. The differences between the nursing staff and PI's assessment of patients being a high risk of falls was statistically significant (p=0.016). Of the 60.8% of high-risk falls patients, only 53.7% had falls preventative strategies implemented as part of their nursing care (Classification of strategies implemented: Alert sign and one or more strategies implemented is deemed accurate). Seventeen percent of strategies documented on the PCCP were not implemented and 29.5% of high risk of falls patients had no documentation on PCCP as indicated in Table 2.

As shown in Table 2, of the 309 patients identified as high falls risk by the PI, only 17.5% were provided with Falls Prevention Brochures, which indicates that 83% of patients were not engaged in their Falls Prevention Plan. Out of 309 patients identified as high falls risk, 2.6% were confused, and 2.6% were non-English-speaking background.

TABLE 2: PCCP AUDIT RESULTS OF RISKMAN NUMBER DOCUMENTATION, IDENTIFICATION OF PATIENTS' FALLS RISK SCORE AND ENGAGEMENT

Criteria/Questions	Number	Total Occupied Beds	%
Falls this admission	30	508	5.9%
RiskMan No. documented on PCCP	18	30	60%
Staff identified patient as high risk of falls	271	508	53.4%
PI identified patient as high risk of falls	309	508	60.8%
Falls preventions strategies implemented	166	309	53.7%
Falls prevention not documented in PCCP	91		29.5%
Falls prevention not implemented	52		16.8%
Falls prevention brochure provided	54	309	17.5%
Falls prevention brochure not provided	255		82.5%
Risk and strategies discussed with patient	14		25.9%
Risk and strategies not discussed with patient	40		74.1%
Patient confused	8		2.6%
Patient NESB	8		2.6%

Table 3 provides an indication of which falls prevention strategies were implemented and not implemented. Of the 309 patients with falls risk 58% of patients had 'Alert Signs' as a falls risk displayed above their beds, whilst 28% of patients did not have falls risk documentation in their PCCP. In relation to the intervention of a hi-low bed as part of a risk of falls patient's care, 71% of patients did not have the intervention of a 'high low bed' documented or implemented. Of the 86% of high falls risk patients requiring a 'gait aid', only 25% of these patients had their walking aids within reach. Only 2% of 'toileting regimes' and 43% of high falls risk patient's 'bathroom supervision' were documented as implemented on the PCCP. For the 14 patient beds with an alarm in-situ, 64% of the patient 'alarms' were not connected correctly.

TABLE 3: IMPLEMENTED/NOT IMPLEMENTED 6-PACK FALLS PREVENTION STRATEGIES IDENTIFIED ON THE PCCP

Alert sign	Number	Total No. of High-Risk Patients	%
Alert sign documented on PCCP as implemented	178	309	58%
Alert sign not implemented	43		14%
No documentation in PCCP	88		28%
Low bed			
Low bed documented on PCCP as implemented	90	309	29%
If so, is it in lowest position	68		76%
No documentation and no implementation on PCCP	219		71%
Gait aid			
Total no. of high risk patient require gait aid	267	309	86%
Gait aid provided	63	267	24%
If so, is it close to patient	43	63	68%
Toileting regime			
Toileting regime documented on PCCP as commenced	5	309	2%
Toileting regime not commenced	210		68%
No documentation on PCCP	94		30%
Bathroom			
Supervise bathroom documented	133	309	43%
Supervise bathroom not documented	114		37%
No documentation in PCCP	59		19%
Alarm insitu			
Total no. of high-risk patient requires alarm	128	309	41%
Alarm insitu	14	128	11%
If so, is it connected correctly	5		36%
Documented PCCP but not implemented	9		64%

DISCUSSION

This study identified variability between patients being identified as high falls risk when comparing nursing staff records on PCCP and the audit conducted by the PI.

Beauchet and colleagues similarly found that 13.5% of patients that were audited to be a high risk of falls were not identified as risk of falling.[10] Accurate documentation and the reporting of falls is crucial in improving the quality of patient care. The findings suggest that there is a significant gap in the identification of high falls risk patients and the documentation and implementation of falls prevention strategies, along with patient engagement in their falls prevention plan. Knowing that many falls occur in bathrooms due to toileting, which could potentially result in serious injuries,[2] the barriers of not documenting high falls risk patient's toileting regime in the PCCP needs to be identified to improve patient outcomes. Some of the barriers that impact upon nurses' adherence to documentation may have been due to demands of patient care requirements (dementia, confused, delirium, and renal impairment). Also, the patient requirements may not always correlate with staff capacity due to workloads, complex patient care needs, staff allocation and skill mix.

Not displaying the 'alert signs' for high falls risk patients above their beds will hinder strategies to reduce falls rates. The allocation of alert signs increases the awareness of a patient's risk of falling to everyone who encounters the patient's surroundings, including the multidisciplinary team of nurses, doctors and visitors, and even the tea person. Radecki and Reynolds (2018) found that it was important that the patient was also aware of their falls risk, so that the patient could be an active participant in the falls prevention interventions.[11] It is imperative to document that a patient falls prevention brochure is provided to ensure that patients are engaged in their falls prevention plan.

Ensuring a patient's walking aid is within their reach allows the patient to stabilise their posture/mobility which in turn minimises their risk of falling. The use of bed and chair alarms for cognitively impaired patients play a crucial role in the minimisation of falls, as the alarms alerts healthcare professionals of movement when a patient is attempting to ambulate without any supervision. From the patient perspective, Radecki and Reynold found that patients' considered alarms to be part of the falls risk strategy.[11] In a medical ward where 16 dementia specific beds are located, having alarms not connected correctly can result in a serious injury due to a fall. Upon investigation for the reasons why there were a high number of alarms not documented or connected correctly, it was highlighted by nursing staff that the documentation was copied from the day before.

Patient centred care or patient engagement is a fundamental care requirement of the healthcare system, and by involving the patient in their daily care plan, evidence suggests that this will decrease the number of falls.[11] As per National Safety and Quality Health Service Standards [NSQHS] criteria 10.9.1 patients and their carers are required to be informed of their identified falls risk and engaged in their falls prevention strategies and management plan.[12] Patients' cognitive impairment or language barriers at times can hinder the patient education process.[13] As per the hospital's policy the nursing staff are required to provide a falls prevention brochure and discuss the strategies implemented with the high falls risk patient. The falls prevention brochures are translated into multiple languages and available for nursing staff to print and provided to the non-English speaking patients. In a medical ward by not actively engaging high falls risk patients in their falls prevention plan, not only increases their risk of falling, but also, prevents patient awareness of their falls risk to undertake the targeted strategies implemented/required whilst in hospital or post discharge.[11]

Knowing that the 6-PACK interventions are utilised as part of patients' daily care to decrease the number of serious injuries, it is important to obtain nurses perceptions to understand what constitutes the implementation of targeted falls prevention strategies on the falls prevention tool. The results of this study were provided to nursing staff/nurse unit manager of the ward during focus group discussions and the hospital's Standard 10 falls prevention committee to improve local nursing practice.

CONCLUSION

Even though the falls risk assessment tool was feasible to implement and has previously reduced the fall and fall related serious injury rate at the current hospital, the falls rate and reported serious injuries appears to be a continuing problem. A possible explanation for serious injuries on the rise is the inconsistent implementation of the falls prevention strategies. This study indicates that the nurse's risk assessment and implementation of falls prevention strategies as documented in the falls assessment tool, was not being applied as it is intended, and may not be having the same effect of reducing the rate of falls as it did following its introduction to the hospital in 2002. It is imperative to identify the barriers and the enablers to further understand the reasons behind nurses' documentation and the apparent lack of implementation of the targeted strategies. While the above audit results provide an insight, further research is required to explore the nurses' and patients' perspectives on effectiveness of the current falls prevention plan is required. The next phase of this study will explore these views.

RECOMMENDATIONS

An analysis should be conducted to determine the long-term sustainability of the falls prevention program. As part of the analysis the identification of the barriers and enablers that impact upon nurses' documentation and implementation of targeted falls strategies, requires further examination. The further exploration of both nursing staff and patients' perspectives regarding the effectiveness of current falls prevention plan, will contribute the overall analysis.

Funding support: No funding was received for this project.

Declaration of conflicting interests: No conflict of interest has been declared by the authors.

Authors' contribution: Caglayan Yasan: study design, manuscript preparation, data collection and analysis. Mark Tracey: analysis and interpretation of statistical data. Trish Burton: manuscript preparation, critically reviewed and approved the manuscript prior to submission.

REFERENCES

1. Barker AL, Morello RT, Ayton RA, Hill KD, Landgren F S, Brand CA. Development of an implementation plan for the 6-PACK falls prevention programme as part of a randomised controlled trial: protocol for a series of preimplementation studies. *Inj Prev.* 2015; 22(2):1-7. DOI:10.1136/injuryprev2015-041915
2. Morello RT, Barker AL, Ayton DR, Landgren F, Kamar J, Hill KD, Brand CA, Sherrington C, Wolfe R, Rifat S, Stoelwinder J. Implementation fidelity of a nurse-led falls prevention program in acute hospitals during the 6-PACK trial. *BMC Health Serv Res.* 2017; 17:383. DOI:10.1186/s12913-0172315-z
3. Oliver D, Britton M, Martin FC, Hopper AH. Development and evaluation of evidence-based risk assessment tool (STRATIFY) to predict which elderly inpatients will fall: case-control and cohort studies. *BMJ.* 1997; 315(7115): 1049-53. DOI:10.1136/bmj.315.7115.1049
4. Barker A, Kamar J, Graco M, Lawlor V, Hill K. Adding value to the STRATIFY falls risk assessment in acute hospitals. *J Adv Nurs.* 2011; 67(2):450-7. DOI:10.1111/j.1365-2648.2010.05503.x
5. Aranda-Gallardo M, Enriquez de Luna-Rodriguez M, Cance-Sanchez JC, Moya-Suarez AB, Morales-Asencio JM. Validation of the STRATIFY falls risk assessment tool for acute-care hospital patients and nursing home residents: study protocol. *J Adv Nurs.* 2015; 71(8):1948-57. DOI:10.1111/jan.12651
6. Barker A, Brand C, Haines T, Hill K, Brauer S, Jolley D, Botti M, Cumming R, Livingston PM, Sherrington C, Zavarsek Silva, Morello R, Kamar J. The 6 PACK programme to decrease fall-related injuries in acute hospital: protocol for a cluster randomised controlled trial. *Inj Prev.* 2011; 17:e5. DOI:10.113/injuryprev-2011-040074.
7. Department of Health. Victorian Health Incident Management Policy. 2011; 27 Retrieved from: https://www2.health.vic.gov.au/hospitals-and-health services/quality-safety-service/clinical-risk-management
8. Patton MQ. *Qualitative Research & Evaluation Methods.* 3rd ed. Sage. United States. 2002
9. Hays DG, Singh AA. *Qualitative inquiry in clinical and educational settings.* Guilford Press. New York. 2012
10. Beauchet O, Noublanche F, Simon R, Sekhon H, Chabot J, Levinoff EJ, Kabeshova A, Launay CP. Falls Risk Prediction for Older Inpatients in Acute Care Medical Wards: Is there an interest to combine an early nurse assessment and the artificial neural network analysis? *J Nutr, Health Aging.* 2018;(22)1:131-7. DOI:10.1007/s12603-017-0950-z
11. Radecki B, Reynolds S, Kara A. Inpatient fall prevention from the patient's perspective: A qualitative study. *Appl Nurs Res.* 2018; 43:114-9. DOI:10.1016/j.apnr.2018.08001.
12. Australian Commission on Safety and Quality in Health Care. Standard 10 Preventing Falls and Harm from Falls Safety and Quality Improvement Guide. Criterion: Communicating with patients and carers. Sydney. 2012. Retrieved from: https://www.safetyandquality.gov.au/sites/default/files/migrated/Standard10_Oct_2012_WEB.pdf
13. Sonnad SS, Mascioli S, Cunningham J, Goldsack J. Do patients accurately perceive their falls risk? *Nursing.* 2014; 44(11):58-62. DOI:10.1097/01.NURSE.0000454966.87256.f7.
14. Schulz KF, Grimes DA. Multiplicity in randomised trials I: endpoints and treatments. *Lancet.* 2005; 365(9470):1591-5.

Australian Journal of Advanced Nursing 37(2) • 2020.372.74

REVIEWS & DISCUSSION PAPERS

Skin cancer in regional, rural and remote Australia; opportunities for service improvement through technological advances and interdisciplinary care

AUTHORS

PAMELA ADELSON BSc(Nur) MPH[1]

MARION ECKERT MPH DN MNurSc[1]

[1] Rosemary Bryant AO Research Centre, Division of Health Sciences, University of South Australia, Adelaide SA Australia.

CORRESPONDING AUTHOR

PAMELA ADELSON Rosemary Bryant AO Research Centre, Division of Health Sciences, University of South Australia. 5000. Phone: + 61 8 8302 1475
Email: Pam.Adelson@unisa.edu.au

ABSTRACT

Age standardised skin cancers (melanoma and non-melanoma) continue to increase in Australia, although they are stabilising for those under age 40. People living in regional, rural and remote Australia have higher rates of skin cancer and challenges accessing care. Better targeting of skin protection measures and improved opportunistic screening have been promoted as ways to improve care for these populations as have increased use of information technology and upskilling of primary healthcare nurses. The Australian Government supports that Optimal Cancer Care Pathways for skin cancers be used as a key resource in exploring best practice models of care for skin cancer patients both for the development of digital platforms and face to face multidisciplinary teams (MDTs). Better use of technology has been a core recommendation of national health and skin cancer organisations for improving prevention and early detection of skin cancer. Skin cancers, as a primarily visual diagnosis are considered one of the prime areas for technological health interventions. The harnessing of artificial intelligence (AI) technology as a tool for early detection and disease management of skin cancers has great potential to reduce the burden of healthcare costs to the regional, rural and remote community and improve health outcomes.

Keywords: Skin cancer, rural, Australia, nursing, interdisciplinary, artificial intelligence

What is already known about the topic?

- People living in regional, rural and remote Australia have higher rates of skin cancer and challenges accessing care.
- Primary care practitioners - whether nurses or GPs in regional, rural and remote Australia are often the primary contact for skin queries or concerns.

What this paper adds:

- Skin cancers, as a primarily visual diagnosis are considered one of the prime areas for technological health interventions
- Nurses in regional, rural and remote Australia are well positioned to be at the forefront of delivering these emerging technologies

https://doi.org/10.37464/2020.372.74

INTRODUCTION

SKIN CANCER IN REGIONAL, RURAL AND REMOTE AUSTRALIA

Skin cancers (melanoma and non-melanoma) are a major public health issue in Australia with two out of three Australians being diagnosed with skin cancer by the age of 70.[1] The age-standardised incidence rate of melanoma has steadily increased since the 1980s and estimates of non-melanoma skin cancer (keratinocyte cancers, KCs) are extremely high when compared with overseas rates.[2] Skin cancer burden is higher among people in regional, rural and remote Australia.[3] Those outside of major metropolitan cities have the highest rates of melanoma skin cancer, while areas of remote Australia, have lower rates, most likely due to lower rates of skin cancer experienced in Aboriginal populations.[2] Geographical disparities have also been recently noted in KC with the highest rates in South Australia in agricultural and coastal areas.[4] This is not altogether surprising given that farmers and outdoor workers have anywhere from three to eight times higher ultraviolet (UV) exposure than indoor workers and sun-protection practices in these populations are noted to be sub-optimal with many reluctant to seek health advice, often waiting until they have a serious health concern.[5] The most common cited barriers to seeking help for skin cancer detection in rural Australia include; minimising the problem, a desire to be in control, reluctance to show emotion or complain, stoicism and concerns about privacy and waiting times to see a doctor.[6]

PREVENTION, EARLY DETECTION AND SCREENING

Skin cancer prevention activities for over 40 years in Australia have been credited with the recent stabilisation of melanoma and KC rates in younger populations <40 years of age. Prevention campaigns have evolved by agencies at both the state/territory and national level from whole of population SunSmart campaigns, to targeted campaigns such as those aimed at farmers; *Protect your farm's most important asset. You*.[7] Currently skin cancer prevention is primarily funded by State/Territory Governments and organisations, the last nationally funded campaign being from 2006-2010. Cancer Council Australia and Clinical Oncology Society of Australia (COSA) have recommended that the Australian Government fund and conduct an ongoing national mass media social marketing campaign to raise awareness of skin cancer risk and sun protection.[8]

A number of resources for skin cancer prevention and early detection tools have been developed for use by the general public including tools and apps such as those developed by SunSmart,[9] risk predictor online tools such as the Melanoma Risk Predictor,[10] Scan Your Skin[11] and daily ultraviolet index alerts by the Bureau of Meteorology.[12] However these SunSmart messages may fall short in regional and rural Australia.[5] In a review of skin protection and public health campaigns for agricultural workers, it has been suggested that increased use of information technology, promoting prevention and early detection at agricultural events and upskilling primary healthcare nurses and other healthcare workers could play an important role in prevention and early detection.[5] Moving in this direction, a new 2019 Commonwealth funded study, *Improving Melanoma and Skin Cancer Awareness in Regional and Rural Australia*, coordinated by Melanoma and Skin Cancer (MASC) Trials in collaboration with clinician and patient groups around Australia aims to guide the development and requirements for resources to support people in these areas.[13]

Currently in Australia, population-based screening for skin cancer is not performed due to a lack of evidence either for or against population-based screening.[14] However, opportunistic screening is common. The Royal Australian College of General Practitioners guidelines currently recommend opportunistic skin checks for people at moderately elevated risk, and skin checks every six to 12 months plus advice on skin self-examination for those at high risk.[15] Primary care practitioners- whether GPs or nurses in regional, rural and remote Australia are often the primary contact for skin queries or concerns. Skin complaints comprise approximately 15% of GP consultations, with about one-third of these involving the diagnosis and treatment of a benign or malignant neoplasm.[16] However, for regional, rural and remote practitioners who may already be stretched to capacity, competing healthcare needs may limit opportunistic skin checks when consideration is given to the time spent on skin examination, visual diagnosis and possible referral to a dermatologist. As 92% of dermatologists in Australia live and work in major metropolitan cities,[17] specialist visits are not easy for regional, rural and remote people, although advances in teledermatology has improved access.

Early detection of skin cancers, especially in the case of melanoma is crucial with survival high if acted upon early and localised. Melanoma rates in Australia have decreased by more than 30% from 2002-2016 for people aged less than 40 which suggest that 40 years of skin cancer prevention programs are having an effect.[2,18] Melanoma if caught early has a five year survival of 91%, yet in 2019 it is estimated that it will be the ninth most common cause of death from cancer.[19] Early diagnosis and treatment for all skin cancers decreases the need for invasive and potentially disfiguring surgery especially of the head and neck. It is believed that for older men in particular, the higher proportion of face, scalp and neck tumours could be related to occupational and lifelong sun exposure rather than intermittent extreme exposures.[20] While KCs mostly do not present a serious disease they are the second most costly cancer (after colorectal) and reflect a disproportionately high burden on the healthcare system.[21]

For some patients, skin cancer will require ongoing management. In the case of KC, due to the multiplicity of the disease, the incidence is eight times as high in patients who have had a prior history as for those who have not.[22] In South Australia, 40% of people treated for a KC will have another one treated within five years.[4] For regional, rural and remote practitioners, post-diagnosis skin cancer follow-ups present challenges with the following reasons being cited: (i) workload and time constraints for consultations (ii) GP support, resources and infrastructure (including access to dermatologists for the patient) and (iii) patient factors such as poor health literacy and motivation to attend follow-up.[23]

NATIONAL INQUIRY INTO SKIN CANCER

Public health recommendations for optimal approaches to the prevention, early detection and management of skin cancer have taken the form of national reports from government and non-government cancer control organisations such as the Department of Health, Australian Institute of Health and Welfare, Cancer Australia, Cancer Council Australia, and professional organisations such as Clinical Oncology Society of Australia. In 2015 The Standing Committee on Health made an Inquiry into Skin Cancer with 63 submissions received from government, non-government, professional organisations, consumers and private individuals.[8] Amongst the submissions received, a number addressed issues specific to regional, rural and remote health and noted the contribution of nurses and primary healthcare teams in the provision of prevention, opportunistic screening and early diagnosis of skin cancer and called for greater professional support and recognition of their services. These included submissions from the National Rural Health Alliance and the Royal Flying Doctor Service:[8]

Submission 9 exert, the National Rural Health Alliance: *Notwithstanding their serious mal-distribution, it remains the case that nurses, doctors and allied health professionals are at the heart of primary care, including for skin cancer. Because nurses are the largest and best-distributed health professionals in rural and remote areas, the best way to provide a workforce for skin cancer care in those areas is through continuing support for their recruitment, retention and professional support. Given the constraints on their time and energies in the vast areas they serve, GPs cannot provide cancer care alone. These local teams also have a key role to play in raising awareness about skin care. Providing more support for these health professionals is imperative to enable them to more effectively undertake the jobs for which they are qualified.*

Submission 34 exert, the Royal Flying Doctor Service (RFDS): *Skin cancer is a significant issue in rural and remote Australia, with high incidence rates due to a range of higher risk factors. There is also a persistent lack of services available in rural and remote areas. Difficulties in accessing appropriate local services often results in delayed detection and diagnosis and late treatment and requires patients to travel great distances for treatment services. The RFDS strongly recommends: Efforts to improve early diagnosis, treatment and management must take into account the significant lack of dermatology and other specialist services in rural and remote Australia. Recognise GPs and primary healthcare teams as the critical service providers in these areas. There should be a focus on enhancing and ensuring the knowledge and expertise of existing rural and remote service providers. Innovative service models, such as fly-in fly-out and telehealth services, should be considered to provide more dermatology and specialist services to rural and remote communities, in partnership with relevant rural health providers. Specific rural and remote community awareness-raising activities are needed that are appropriate, and targeted to rural populations, taking into account their unique lifestyle factors.*

The report from this Inquiry, *Skin Cancer in Australia: Our National Cancer,* was published in 2017 with 12 recommendations made by the Committee to improve the prevention and treatment of skin cancers in Australia.[24] Three recommendations are of particular relevance to nurses and primary healthcare workers working in regional, rural and remote Australia. These are:

- Recommendation 8 (part 2): Proficiency in the use of the dermatoscope be included in the practical component of all undergraduate medical courses and in rural nursing training courses.
- Recommendation 11: establish a virtual platform for the multidisciplinary treatment of skin cancer for patients located in regional and remote Australia; and
- further develop and implement best practice models for multidisciplinary care for the treatment of skin cancer patients.
- Recommendation 12: The Committee recommends that the Australian Government ensure that adequate funds are provided for the non-medical support services of skin cancer patients and their families, particularly support services for those rural patients who have to travel for treatment.

IMPROVING OPPORTUNISTIC SCREENING AND EARLY DETECTION THROUGH TECHNOLOGY AND NURSE-LED COLLABORATIVE ARRANGEMENTS IN REGIONAL, RURAL AND REMOTE COMMUNITIES

Currently the most prevalent tool for identifying skin cancers in general practice is by dermatoscopy. However this requires specialised training and when used by less experienced clinicians, the accuracy can be no better than visual inspection alone.[25] In 2004, in an effort to improve dermatological services to regional, rural and remote areas underserved by dermatologists, the Australian College of Rural and Remote Medicine introduced the Tele-Derm initiative, initially in Queensland and later expanding nationally. This free online consultation service requires the primary doctor to submit a clear resolution digital photograph to a dermatologist to provide advice. However barriers to doctors using the service have been cited as; lack of remuneration (not billable in the MBS), increasing their workload and too time consuming.[26]

The importance and role of multidisciplinary team (MDT) care in skin cancer is recognised as the best practice approach to providing evidence-based cancer care and is supported by the Council of Australian Governments (COAG) as reflected in the Optimal Care Pathways (OCP) for Melanoma and non-Melanoma skin cancers.[27] Nurses are key MDT members and recognised primary care providers in rural communities, having a broad scope of practice and working collaboratively in advanced and extended roles.[28] Within their scope of practice nurses have been engaged in preventative and nurse-led collaborative arrangements from skin cancer prevention through to early detection and management. Examples of nurse-led skin cancer assessment services in regional, rural and remote areas include initiatives by the Silver Chain organisation in Western Australia, the Skin Cancer Remote Service (SCARS) which provides nurse-led full body skin cancer screening with dermatoscopy and community education and upskilling of nurses.[29] Nurses have received training in dermatoscopy through training programs such as those offered through the National Professional Development Framework for Cancer Nursing (EdCaN). These learning resources can benefit health professionals not just specialising in cancer and include learning activities for individual nurses and nurse educators, including those for melanoma and current prevention and early detection campaigns. http://edcan.org.au/edcan-learning-resources/using-edcan-resources

Better use of technology has been a core recommendation of national health and skin cancer organisations for improving prevention and early detection of skin cancer. The Australasian College of Dermatologists actively promotes the adoption of telehealth in dermatology services to geographically diverse populations, noting the great potential for telehealth using smart devices for health prevention, education and rapid access to specialist opinion. Currently, practice guidelines for teledermatology are being developed collaboratively by the University of Queensland and the Australasian College of Dermatologists.[30]

Advances in dermatological imaging and improved communication systems will go a long way towards improving diagnostic accuracy and facilitating services to vast geographically diverse areas. New technologies such as surveillance photography, teledermatology, artificial intelligence, and apps to support patient self-examination and triage of clinical examinations also have the potential to reduce overtreatment or unnecessary treatment of some lesions detected in screening. These technologies have great potential to improve equity of access to dermatological services for people living in regional, rural and remote areas.[31] An emerging technology that is predicted to revolutionise these existing technologies is through artificial intelligence.

EMERGING TECHNOLOGIES: ARTIFICIAL INTELLIGENCE (AI)

Skin cancers, as a primarily visual diagnosis are considered one of the prime areas for technological health interventions. While there are existing smartphone apps for skin cancer detection, there is little evidence of clinical validation and poorly designed, inaccurate and/or misleading consumer applications may cause harm to patients and risk public safety.[32,33]

In 2017, in a letter to the prestigious science journal *Nature,* Esteva et al. described how artificial intelligence technology called convolutional neural networks (CNNs) matched or outperformed 21 board-certified dermatologist across three critical diagnostic tasks: keratinocyte carcinoma classification, melanoma classification and melanoma classification using dermatoscopy.[34] Following the publication of these findings, the international press was alight with headlines such as '*Man against machine, AI is better than dermatologist at diagnosing skin cancer*'. It was acknowledged that a dermatologist's clinical diagnosis is based on more than visual and dermatoscopic inspection of a lesion in isolation, however the ability to classify skin lesion images with the accuracy of a specialist has the potential to greatly expand access to skin cancer care.[34]

In a recent trial in dermatology clinics in seven UK hospitals, the study demonstrated that an AI algorithm using different camera types could detect melanoma with a similar accuracy as specialists. The authors concluded that the development of low-cost screening methods, such as artificial intelligence-based services, could transform patient diagnosis pathways, enabling greater efficiencies throughout the healthcare service.[32] Other specialities that will benefit from AI include radiology and pathology, with predictions that machine learning will soon displace most of this work.[35] At Memorial Sloan Kettering Cancer Centre in New York, AI is currently being used and further refined by cancer pathologists with results showing that machine-learning is approaching 100% sensitivity for biopsies for prostate, skin and breast cancer.[36]

There are still issues to overcome in AI technology with regards to early detection of skin cancers including different skin backgrounds (most have been tested on caucasian populations), varying camera angles and lighting. It has been recommended in a systematic review and in several other studies assessing CNN that to improve the robustness of the CNN classifier, establishment of an open-access, standardised, large skin tumour image dataset, which includes both rare tumours/subtypes and all ethnicities, is mandatory.[37,38] In Australia, the University of Queensland is part of the International Skin Imaging Collaboration (ISIC) Melanoma Project which is addressing issues concerning standards and technology and developing an open source public access archive of skin images.[39]

While an accurate history and assessment will always be as essential component of diagnosis and management, initial visual inspection and classification by AI will go a long way towards early detection in communities where access to GPs and specialist doctors are difficult such as in regional, rural and remote Australia. Smartphone applications do not currently incorporate AI technology; however, it is just a matter of time before the technology is readily available for GPs and nurses to make the best use of this technology through smartphones. In a thoughtful editorial regarding AI and melanoma by Associate Professor Mar of Monash University and Professor Soyer of Queensland University, it was noted that AI promises a more standardised level of diagnostic accuracy, such that all people, regardless of where they live or which doctor they see, will be able to access reliable diagnostic assessment.[40]

WHERE TO FROM HERE?

The harnessing of AI technology as a public health tool for early detection and disease management of melanoma and KC will differ in approach but has great potential to reduce the burden of healthcare costs to the community and improve health outcomes. The Australian Government supports that Optimal Cancer Care Pathways be used as a key resource in exploring best practice models of care for skin cancer patients both for the development of digital platforms and face to face MDTs.[27] Delivering healthcare to regional, rural and remote communities is challenging and nurses are increasingly called upon to work to the full scope of practice as well as working in advanced practice roles in Australian rural health services in response to workforce demands.[41] Nurses as primary healthcare providers in regional, rural and remote Australia are well positioned to be at the forefront of delivering these emerging technologies, whether working in advanced nursing practice roles and/or working collaboratively with GPs and dermatologists through established multidisciplinary organisations that focus on delivering services in regional, rural and remote areas.

As skin cancers are initially assessed on visual inspection and prompt action is likely to result in cure, opportunistic screening in high risk populations with AI has great promise by means of improving diagnostic accuracy and decreasing the high proportion of investigations of suspicious benign lesions. It has been noted that despite the benefits of telehealth technologies, the actual uptake and integration into mainstream practice has been slow and fragmented, with many pilot programs not migrating into sustained services.[42] The introduction of AI potentially could remove some of these telehealth barriers, such as the need for real-time consultations and administrative burden. In a systematic review of telehealth services in rural Australia, six factors were identified that influenced success and sustainability of telehealth services. These were: vision, ownership, adaptability, economics, efficiency and equipment. [42]

Translation into a real-world scenario with AI technology is not too distant in the future. Mobile app technology and repositories of public source images of different skin lesions are becoming available. AI for skin cancer early detection is a good technological alternative for which there is good evidence, and is likely to be well received, efficacious and cost effective. There is likely to be minimal training involved and with better support and utilisation of the existing primary care workforce the technology should be readily adaptable within existing services. Careful planning and collaboration between health services will be needed to ensure that best practice is applied in bringing these services to those in regional, rural and remote Australia. As a needed service that will be low cost, efficacious and has great potential for cost savings to the health system, the time is ripe for exploring opportunities to bring this emerging technology to those who will most benefit from it.

Funding support: No funding was received for this manuscript.

Declaration of conflicting interests: The authors have no conflicts of interest to declare.

REFERENCES

1. Cancer Council Australia. Skin Cancer. 2019; https://www.cancer.org.au/about-cancer/types-of-cancer/skin-cancer.html Accessed 11/11/2019.
2. Australian Institute of Health and Welfare. Skin cancer in Australia. Canberra: AIHW;2016.
3. Australia Institute of Health and Welfare. Rural, regional and remote health: indicators of the health status and determinants of health. In. Canberra: AIHW; 2008.
4. Adelson P, Sharplin GR, Roder DM, Eckert M. Keratinocyte cancers in South Australia: incidence, geographical variability and service trends. *Aust Nz J Publ Heal*. 2018;42(4):329-33.
5. Smit-Kroner C, Brumby S. Farmers sun exposure, skin protection and public health campaigns: An Australian perspective. *Prev Med Rep*. 2015;2:602-607.
6. Fennell KM, Martin K, Wilson CJ, Trenerry C, Sharplin G, Dollman J. Barriers to Seeking Help for Skin Cancer Detection in Rural Australia. *J Clin Med*. 2017;6(2):19.
7. Cancer Council Victoria Vic Health. Protect your farm's most important assest. You. 2012; https://www.sunsmart.com.au/downloads/resources/brochures/farmers-brochure.pdf
8. Parliament of Australia. Inquiry into Melanoma and non-melanoma skin cancers. Submissions received by the Committee. 2014; https://www.aph.gov.au/Parliamentary_Business/Committees/House/Health/Skin_Cancer/Submissions
9. SunSmart smartphone app. http://www.sunsmart.com.au/resources/sunsmart-app
10. QIMR Berghofer Medical Research Institute. Melanoma Risk Predictor. https://publications.qimrberghofer.edu.au/Custom/QSkinMelanomaRisk
11. Skin Cancer College Australasia. Scan Your Skin https://www.scanyourskin.org/risk-prediction-tool/
12. Australian Government Bureau of Meterology. About UV and sun protection times. http://www.bom.gov.au/uv/

13. Centre for Health Economics Research and Evaluation. CREST Update Sept 2019. Melanoma and Skin Cancer Trials (MASC Trials). 2019; https://www.uts.edu.au/sites/default/files/2019-10/crest-newsletter-2019-09.pdf Accessed 11/11/2019.
14. Australian Government Standing Committee on Screening. http://www.cancerscreening.gov.au/internet/screening/publishing.nsf/Content/standing-committee-on-screening
15. Royal Australian College of General Practitioners. Skin checks. https://www.racgp.org.au/afp/2012/july/skin-checks/ Accessed 8/11/2019, 2019.
16. Harvey NT, Chan J, Wood BA. Skin biopsy in the diagnosis of neoplastic skin disease. *Aust Fam Physician.* 2017;46(5):289-94.
17. Department of Health. Australia's Future Health Workforce-Dermatology. In. Australia 2017.
18. Montague M, Borland R, Sinclair C. Slip! Slop! Slap! and SunSmart, 1980-2000: Skin cancer control and 20 years of population-based campaigning. *Health Educ Behav.* 2001;28(3):290-305.
19. Australian Government. Cancer Australia. Melanoma of the skin. https://melanoma.canceraustralia.gov.au/ Accessed 11/11/2019.
20. Curchin DJ, Harris VR, McCormack CJ, Smith SD. Changing trends in the incidence of invasive melanoma in Victoria, 1985–2015. *MJA.* 2018;208(6):265-9.
21. Australian Institute of Health and Welfare. Health System Expenditure on Cancer and Other Neoplasms in Australia: 2008–09. In. Canberra (AUST): AIHW; 2013.
22. Pandeya N, Olsen CM, Whiteman DC. The incidence and multiplicity rates of keratinocyte cancers in Australia. *MJA.* 2017;207(8):339-43.
23. Aung E, Campbell D, Mitchell E. Post diagnosis skin cancer follow up in rural general practice. *Aust J Gen Pract.* 2019;48:222-8.
24. Australian Government. Australian Government reposonse to the House of Representatives Standing Committee on Health Report: Skin Cancer in Australia: Our National Cancer. In. Canberra ACT: Department of Health 2017.
25. Jones OT, Jurascheck LC, van Melle MA, et al. Dermoscopy for melanoma detection and triage in primary care: a systematic review. *BMJ Open.* 2019;9(8):e027529.
26. Liu R. Evaluating Artificial Intelligence and Telemedicine-based Care Models in Dermatology. *Journal of Mobile Technology in Medicine.* 2019;8(1):50-2.
27. Cancer Council Australia. *Optimal cancer care pathways* https://www.cancer.org.au/health-professionals/optimal-cancer-care-pathways.html Accessed 20/11/2019.
28. CRANAplus. Rural Nursing. 2019; https://crana.org.au/resources/practice/rural-nursing Accessed 11/11/2019.
29. Christensen S. SCARS- Skin Cancer Assessment Remote Service- Nurse led clinics. Paper presented at: CRANAplus 37th Conference 2019; Lovedale, NSW.
30. The University of Queensland Centre for Online Health. Development of practice guidelines for teledermatology in Australia. https://coh.centre.uq.edu.au/development-practice-guidelines-teledermatology-australia Accessed 25/11/2019.
31. Weber M, Marshall H, Rankin N, et al. Cancer screening in Australia: future directions in melanoma, Lynch syndrome, and liver, lung and prostate cancers. *Public Health Res Pract.* 29(2):pii2921910.
32. Phillips M, Marsden H, Jaffe W, et al. Assessment of Accuracy of an Artificial Intelligence Algorithm to Detect Melanoma in Images of Skin Lesions. *JAMA Network Open.* 2019;2(10):e1913436-e1913436.
33. Chuchu N, Takwoingi Y, Dinnes J, et al. Smartphone applications for triaging adults with skin lesions that are suspicious for melanoma. *Cochrane Database Syst Rev.* 2018; Dec 4(12): CD013192.
34. Esteva A, Kuprel B, Novoa RA, et al. Dermatologist-level classification of skin cancer with deep neural networks. *Nature.* 2017;542:115.
35. Obermeyer Z, Emanuel EJ. Predicting the Future — Big Data, Machine Learning, and Clinical Medicine. *N Engl J Med.* 2016;375(13):1216-9.
36. Campanella G, Hanna MG, Geneslaw L, et al. Clinical-grade computational pathology using weakly supervised deep learning on whole slide images. *Nat Med.* 2019;25(8):1301-9.
37. Brinker TJ, Hekler A, Utikal JS, et al. Skin Cancer Classification Using Convolutional Neural Networks: Systematic Review. *J Med Internet Res.* 2018;20(10):e11936.
38. Fujisawa Y, Inoue S, Nakamura Y. The Possibility of Deep Learning-Based, Computer-Aided Skin Tumor Classifiers. *Frontiers in Medicine.* 2019;6:191.
39. The University of Queensland Dermatology Research Centre. International Skin Imaging Collaboration (ISIC) Melanoma Project. https://dermatology-research.centre.uq.edu.au/international-skin-imaging-collaboration-isic-melanoma-project Accessed 25/11/2019.
40. Mar VJ, Soyer HP. Artificial intelligence for melanoma diagnosis: how can we deliver on the promise? *Annals of Oncology.* 2018;29(8):1625-1628.
41. Cant R, Birks M, Porter J, Jacob E, Cooper S. Developing advanced rural nursing practice: A whole new scope of responsibility. *Collegian.* 2011;18(4):177-182.
42. Bradford NK, Caffery LJ, Smith AC. Telehealth services in rural and remote Australia: a systematic review of models of care and factors influencing success and sustainability. *Rural and remote health.* 2016;16(4):3808.

Australian Journal of Advanced Nursing 37(2) • 2020.372.94

REVIEWS & DISCUSSION PAPERS

Community respite service utilisation and dementia care: a review of literature

AUTHORS

CHERRIE JANE WAKEFIELD BSN MHS[1]

1 Faculty of Health Disciplines, Athabasca University, Athabasca, Alberta, Canada.

CORRESPONDING AUTHOR

CHERRIE JANE WAKEFIELD Blue Haven Care Community, 14A Bonaira Street, Kiama, NSW. 2533.
Phone: +61 422 420 842
Email: cherriew@bluehavencare.com.au

ABSTRACT

Objective: To explore the detrimental effects of caregiver burden, in relation to caregivers of people with dementia, and highlight caregiver burden as an emerging healthcare problem. The purpose of the literature review is to inform healthcare professionals of the barriers to utilising community respite services by caregivers and discuss the significance of respite services to caregivers of people with dementia.

Background: Dementia is one of the leading contributors to burden of disease and disability. Increasing numbers of spouse and family caregivers play crucial roles in providing support for people with dementia enabling them to continue living in the community. Caregiver burden occurs in individuals when the demands of caregiving exceeds their resources. Community respite services are valuable resources which provide individuals a break from their caregiving role.

Study design and methods: The literature review will draw attention to caregivers of people living with dementia in the community and their utilisation of community respite services. The target audience are healthcare professionals in multidisciplinary community teams composed of clinicians, educators, managers, administrators, and researchers. Seven online databases were accessed to search the following terms of caregiver burden, dementia care and community respite along with specific inclusion criteria. As a result, 26 scholarly articles were reviewed for the purpose of this literature review.

Results: There are several community respite services, which help minimise the incidence of caregiver burden, available to caregivers of people with dementia but there are many barriers which affect utilisation of these services. Some of these barriers include accessibility of information on respite services, flexibility and affordability of respite services, and the caregiver's inability to recognise their need for respite services.

Discussion: Healthcare professionals could assist caregivers to better utilise community respite services by performing through assessments on both people with dementia and their caregivers. As a result of these assessments, potential barriers to community respite service utilisation could be identified.

Conclusion: Community respite services are essential to minimising the incidence of caregiver burden. Healthcare professionals should recognise these barriers to respite service use and implement strategies to increase service utilisation.

Implications for research, policy, and practice: Further research is required to investigate the specific types of respite service caregivers need and which respite services have been most successful

https://doi.org/10.37464/2020.372.94

for caregivers. This knowledge can assist healthcare professionals in improving utilisation rates of respite services and inform health systems on where to focus the funding of their community resources for people with dementia and their caregivers.

Key words: Caregiver burden, dementia, respite, community, literature review

What is already known about the topic?

- Dementia is an emerging healthcare problem leading to caregiver burden amongst caregivers.
- Community respite services help minimise the occurrence of caregiver burden.

What this paper adds:

- Contributes to the existing knowledge of caregiver burden amongst Australian healthcare professionals.
- Identifies several barriers to caregiver respite service utilisation.
- Emphasises the significance of respite services to caregivers of people with dementia.

INTRODUCTION

The Australian Institute of Health and Welfare[1] states Australia's profile of its older population is projected to change in the coming years. In 2017, more than half of older people (57%, or 2.2 million) were aged 65–74, one-third were aged 75–84 (30%, or 1.2 million), and 13% were aged 85 and over (497,000). By 2047, it is projected there will be just under 3.4 million people aged 65–74.[1] It is evident that the number of people over 65 years will continue to grow as the population ages. Dementia is the number one cause of disability in Australians aged 65 years and older and it is characterised by the gradual impairment of brain function where the skills commonly affected include memory, cognition and personality.[2] Dementia presents a significant challenge to health and aged care in Australia. More than 342,000 Australians are living with dementia and this number is expected to increase up to 400,000 in less than a decade.[3] Worldwide, at least 44 million people are living with dementia, making the disease a global health crisis that must be addressed.[3]

Dementia is one of the leading contributors to burden of disease and disability, and people with dementia (PWD) are frequent users of health and aged care services.[2] This progressive neurodegenerative disease is difficult for both healthcare professionals (HCPs) and family caregivers to manage.[4] There are increasing numbers of spouse and family caregivers playing critical roles in providing support to PWD which enables them to remain living in their own homes.[5–7] Caregivers are those who share responsibility for another person's health, wellbeing and safety over time.[8] They are also unpaid individuals who support or provide informal care to a person who is dependent due to long-term physical or mental illness or to age-related problems.[5] The care of PWD provided at home often involves longer hours and more intense care compared with amount of formal care provided by health services.[5,6] Caregiver burden can be described as the emotional, physical, social, and financial costs that results when the demands of caregiving exceeds one's resources.[8–12] This literature review highlights caregiver burden as an emerging healthcare problem as it explores the detrimental effects of caregiver burden. Furthermore, this paper aims to educate HCPs on the barriers to utilising community respite services by caregivers and discuss strategies to increase service utilisation in order to minimise caregiver burden.

METHODOLOGY

Scholarly articles were researched using the following databases CINAHL plus, Academic search complete, eBook collection, Health source – nursing/academic edition, PsycInfo, Psych articles, and Socio/index with full-text. The inclusion criteria are as follows full-text, published between 2000–2018, and peer-reviewed. Search terms used included caregiver burden, dementia care, community, respite, and Australia. The primary search strategy used the terms caregiver burden, dementia care, and community which yielded 143 articles and a total of 95 articles excluded. Research based in the United States, rural settings, and non-English speaking countries were omitted due to the unfamiliarity of the author with how community services are delivered in these areas. In addition, research based in residential care settings were omitted. The remaining 48 articles were reviewed and 30 articles were excluded as they described caregiver burden not in the context of dementia care and some articles were situated in rural communities. As a result, 18 articles were chosen for this literature review (Figure 1).

A secondary search strategy was conducted using the eight previously stated databases to capture articles based in Australia. The search terms used were caregiver burden, dementia care, community, respite, and Australia. This search yielded 26 articles and 14 articles were chosen as 12 were excluded due to lack of dementia care, non-Australian articles, and focused on a specific intervention (Figure 2). These 32 scholarly articles resulting from both searches were

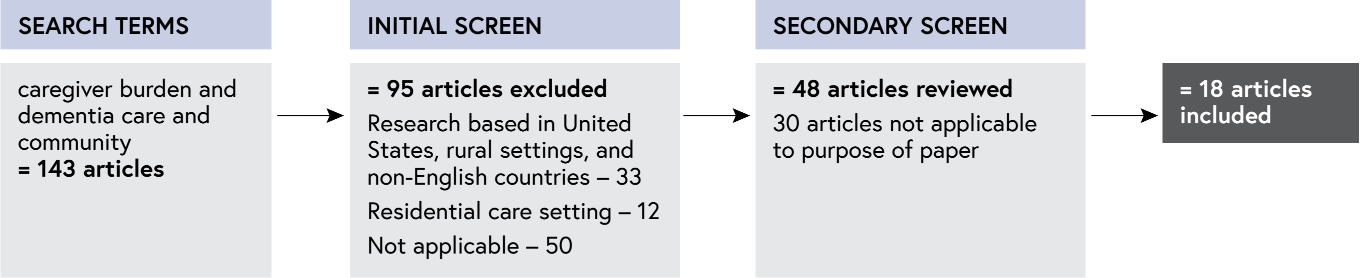

FIGURE 1: PRIMARY SEARCH STRATEGY

reviewed and sorted into two groups of caregiver burden and caregiver burden resources. Upon further review of the articles, an additional six articles were excluded as the content was found not to be suitable for this literature review. As a result, 26 scholarly articles were used for the purpose of this literature review.

DISCUSSION

CAREGIVER BURDEN AND DEMENTIA CARE IN THE COMMUNITY

Caregivers of people living with dementia experience many challenges as the disease progresses. As dementia develops, it leads to increased dependency and a consequent need for continual assistance by their caregivers.[13,14] People with dementia experience disruptive symptoms such as sleep disturbances, incontinence, decreased mobility, inability to recognise family and friends, changes in sexual behaviour, disorientation, paranoia, wandering, and agitation.[11,14,15] As a result of this increased dependency, caregivers can experience symptoms of burnout. Caregiver burden is a term used to describe the negative effects of caring on the person's physical, mental, social, and financial wellbeing.[10–12,15] Family members, such as a spouse or adult child, usually become the caregivers of PWD, which puts added stress on their relationship especially when their loved one no longer recognises them.[10] In Australia, most people living with dementia are cared for by a family member and 25% of family caregivers provide 40 hours of care or more per week.[16,17] The care they provide includes assistance with activities of daily living, such as bathing, dressing, and eating, as well as essential activities of daily living, such as money management or transportation.[11,18] More than two-thirds of caregivers maintain at least 40 hours of care a week for more than 12 months, with one-third caring at that level for five years or more.[17] This continuous and demanding role can have a negative effect on caregivers' mental and physical health.

CAREGIVER BURDEN: AN EMERGING HEALTH ISSUE

Ageing in-place movement

As the number of PWD rises, the number of family caregivers looking after PWD will also follow in increasing numbers. While dementia is not an inevitable part of ageing, almost 10% of Australians aged 65 or over have the condition, rising to 30% of those aged 85 and over.[19] Subsequently, there will be a significant number of older people living with dementia in the coming years who will require healthcare resources both in the community and residential care. This poses significant challenges for aged care policy and services to shift from institutional care (higher-cost) to community care (lower-cost) for older people living with dementia.[20] The shift in aged care policy to support community care is based on the principle of 'ageing-in-place' which enables older people to remain in their own homes longer rather than entering residential care prematurely.[21] Similar to Canada, this policy shift has been supported by older people and governments however, this has redistributed care work from paid institutional carers (formal services) to unpaid carers (informal caregivers) such as family caregivers [7,20,22,23]. The Australian Institute of Health and Welfare [19] found the shift to 'ageing-in-place' aged care policies over the last two decades has resulted in the number of residential care places per 1,000 persons aged 70 years and over dropping from

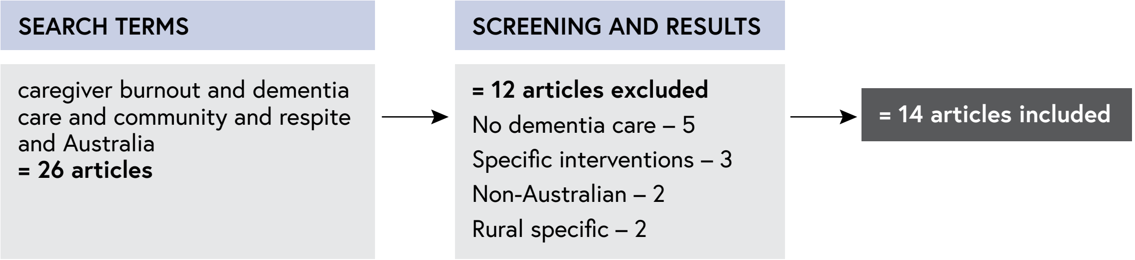

FIGURE 2: SECONDARY SEARCH STRATEGY

92.2 in 1995 to 86.8 in 2010 with the number of community-based aged care places increasing from 1.7 to 24.4 over the same period. Although this change in health policy was intended to allow older people to remain in their homes longer rather than entering institutions prematurely, there has been an inadvertent negative effect on family caregivers where they may feel pressured into taking on the role of informal caregivers.[7,22] The informal care provided by family caregivers assist in lowering the cost of care on health systems but it is at the cost of their own health and wellbeing if adequate support services are not in place. It is evident that community resources are needed to support family caregivers in maintaining their own health and wellbeing and to decrease the incidence of caregiver burden.

The effects of caregiver burden

Family members who care for PWD and live in the community experience high levels of stress and burden. It is well established that these caregivers often experience stress, depression, anxiety, physical illnesses, financial strain, social isolation, and poor quality of life as a result of their caregiving role.[5,7,13,14,18,23–28] The degree of functional impairment and behavioural disturbance of PWD has been shown to induce high levels of caregiver stress and lower levels of subjective wellbeing, which has been linked to higher rates of depression in caregivers.[14,28] It was found that one in four caregivers of PWD contemplated suicide more than once in a previous year which was a rate more than eight times than that of the general population.[25] O'Dwyer, Moyle and van Wyk found that nearly half of the participants in their study had experienced suicidal thoughts while caring and half of those made plans for a suicidal act.[29] Caregivers who considered suicide *'had poorer mental health, reacted more strongly to the behavioural symptoms of dementia, and were less satisfied with the social support they were receiving'*.[25(p.222)] Clearly, caregiver burden along with poor mental health and evidence of depression puts family caregivers of PWD at risk of suicide. It is important for HCPs to acknowledge the significance and the impact of caregiver burden for those caring for PWD.

People with dementia are commonly cared for informally by spouses or their adult children. The current demographic trend indicates that adult children are becoming primary caregivers to their ageing parents.[27] In Australia, 42% of main caregivers of PWD were their spouse/partner and 44% were their son or daughter,[19] while in Canada, 62% of adult children were primary caregivers to their ageing parents.[27] Adult children who become caregivers to their ageing parents experience different stressors to spousal caregivers. Bastawrous explains how the provision of care by adult children is unique as there is a role reversal within this established relationship.[27] The child who was once the receiver of support and nurturing must now provide the support and assistance to their parent. This role reversal not only disrupts the established relationship with the parent but combined with the other demands of caregiving can lead to hostility and resentment.[27] In addition, adult child caregivers often have to negotiate the caregiver role with other family members and this can cause significant family conflict and interpersonal stress.[24,27]

Adult children in a caregiver role have been termed the 'sandwich generation' where they provide care for ageing parents while still supporting their own children as well as their grandchildren in some cases.[20] Moreover, if these caregivers are still working, the burden of this multigenerational caregiving is compounded. They would have to prioritise their time and decide where and when the support is needed most, such as assisting their parents with their activities of daily living, while balancing their own work and family commitments. This can be difficult as adult children are typically at a stage in their lives where they have several roles and responsibilities such as being a spouse, parent and employee.[27] Subsequently, work responsibilities can be viewed as contributing to caregiver stress outcomes especially if the caregiver's employment involves long hours.[23] This sandwich generation of caregivers are also at the point in their lives where they have plans for advancing their career, travelling during their retirement, or pursuing their own interests.[20] The unexpected responsibility of caring for their ageing parent could affect their social and financial wellbeing.

Integrated care for caregivers model

Daniel's Integrated Care for Caregivers Model explains the factors that influence the health and wellbeing of a caregiver.[8] This model describes the nine domains of education, recreation, nutrition, sleep, exercise, support, spirituality, communication, and counselling, all of which provide the supporting base for four key elements of a caregiver's health and wellbeing; physical, emotional, mental, and spiritual.[8] As mentioned earlier in this paper, caregivers experience higher levels of stress and burden when these domains are negatively affected. These nine domains are fundamental in determining the health of the caregiver however education, sleep, emotional and psychological support, and counselling will be discussed further.

Daniel states family caregivers are often unprepared to provide care, have inadequate knowledge to deliver proper care,[8] and are unaware of community resources available to them. It is the responsibility of HCPs to provide support and education on the skills needed for caregivers of PWD to manage their care and to discuss the community resources available to them. Caregivers' sleep patterns may be affected over time, especially with the progression of the care receiver's disease, which may exacerbate depression and symptoms of chronic illnesses.[8] Healthcare professionals can ensure caregivers are taught strategies to manage the behaviours of PWD and to prevent the occurrence of these behaviours during the night (eg. taking them for daily walks during the day). Emotional and psychological support involves having positive interactions with a good social support network of family and friends especially under heightened stress.[8] Healthcare professionals should encourage caregivers to maintain their social support and social networks in order to minimise the incidence of caregiver burden and prevent depression. It is important for caregivers to understand the need for counselling as it helps caregivers improve communication and problem-solving techniques, learn various behavioural management strategies, maintain quality care and positive outlooks.[8] This model highlights the nine domains which HCPs should consider when assessing the health and wellbeing of caregivers.

Significance to healthcare professionals

It is important for HCPs to understand the caregiver experience when providing care to PWD. Caregivers often request information about dementia from prognosis to strategies on how to deal with disruptive behaviours.[5,8] Healthcare professionals have a responsibility to support family caregivers by providing education and counselling to promote their wellbeing. Educating caregivers is important as it empowers caregivers through knowledge and it is a way of supporting caregivers in their demanding role.[5,30] Moreover, HCPs are fundamental in providing ongoing emotional support to caregivers especially when they are faced with making difficult care decisions.[31] As mentioned earlier in this paper, it is essential for HCPs to recognise poor mental health in the presence of caregiver burden as it can lead to suicidal thoughts in caregivers. This can be a strong indicator of the caregiver's physical and emotional suffering warranting prompt intervention from HCPs.

Supporting caregivers in their challenging role has many benefits for caregivers, PWD, and healthcare systems. The significance of HCP involvement in decreasing the incidence of caregiver burden is that *'placement in residential care facilities has been associated with rapid deterioration in health, psychosocial challenges for patients and families, and increased mortality'*.[10(p.24)] Consequently, the ability for those living with dementia to remain in their homes longer with community support services delays institutionalisation and decreases mortality.[4,10]

COMMUNITY RESPITE SERVICES

People with dementia eventually decline physically and mentally affecting their ability to perform their activities of daily living. Vreugdenhil found that caregivers of PWD assisted with a wide range of activities which included self-care, meal preparation, transport, and communication.[20] Informal caregivers require formal services because caring for PWD can be complex, demanding, and at times assistance is needed around the clock. Formal services, which support caregivers in managing the people they care for, are referred to as respite services or respite care. Respite is defined as a pause, a temporary cessation, or an interval of rest.[32] Tretteteig found in their review that caregiver burden is significant and gives rise to a great need for support and help.[13] Respite care is a way of supporting caregivers and delaying institutionalisation.[6,13,14,30,31] It is also essential in the home management of PWD as it helps to decrease stress related to the demands of caring and also allows time for caregivers to rest and do things for themselves.[31] This temporary relief of their burden of care enables them to attend to basic everyday needs such as attending to their own healthcare, shopping, and social needs.[6] O'Connell and colleagues found that four out of five caregivers in their study stated that they had experienced lower stress levels since utilising respite services and more than half reported that their own health had improved since using the service.[6] Utilising respite services is crucial to the health and wellbeing of the caregiver and it could possibly lengthen their ability to care for PWD in their own home.

There are several types of respite services in the community which can be utilised in crisis situations or in part of a planned regular service to provide custodial care. The most common types of respite used are at a day centre, within the home, and at residential care.[6,14,30] In-home respite involves community health workers assisting PWD with their activities of daily living or simply watching over them in their home while their caregiver leaves for a much-needed break. Day centre respite involves PWD attending for a set period time to participate in planned activities whereas residential care respite involves a short stay, such as a week, within the facility.[6,14]

BARRIERS TO UTILISING RESPITE SERVICES

Clearly, there is a significant amount of research and systematic reviews on caregiver burden, dementia care and respite services in the community however there was limited research on why caregivers underutilise community respite services despite its benefits in reducing caregiver burden. Caregivers face many challenges when caring for PWD and HCPs may assume caregivers would regularly utilise the community resources available to them. Throughout the reviewed literature, it was evident that respite services were underutilised due to several key barriers. Caregivers were reluctant to utilise essential support services because of their negative emotions of grief, sadness, or frustration or they were unable to identify that their stress was directly linked to the care recipient.[11,12,18,32] Furthermore, caregivers lacked the knowledge of respite services available to them.[5,8,12,14,32,33] Eifert and Eddy also found some caregivers chose not to utilise respite services because they wanted to keep their loved one's diagnosis private and any acceptance of help from outside the family was seen as an invasion of privacy.[11]

In contrast, when caregivers utilised respite services, they discovered barriers themselves that prevented or limited further respite service use. Caregivers found respite services were inflexible or unreliable in their delivery times and it did not meet their needs.[6,12,14,18,22,32,33] Caregivers reported that there was a greater amount of work generated when preparing PWD for respite and this caused the caregiver more stress.[11,32] Caregivers also stated that managing the behaviour of PWD post-respite service use resulted in disruptive behaviours, such as resisting care or aggression, causing additional caregiver stress.[6,11,14] This interruption of the PWD's routine outweighed the benefits of utilising respite services as perceived by their caregivers. Lastly, caregivers expressed concerns of the cost of respite services and utilisation these services depended on caregiver affordability.[6,11,33]

STRATEGIES TO INCREASE RESPITE SERVICE UTILISATION

Current health policy dictates that one of its key goals is to delay the institutionalisation of PWD however there is overwhelming evidence that community resources should consider not only the care of PWD but also the health and wellbeing of their caregivers. The benefits of broadening the focus of care will help sustain caregivers to continue caring for PWD in their own home for years to come. HCPs have a significant role in performing thorough assessments on both PWD and their caregiver. These assessments will help identify any knowledge gaps in relation to physically and mentally caring for PWD and communicate vital information on the community respite services available to caregivers. The contact with caregivers and PWD during these assessments gives HCPs the opportunity to offer ongoing emotional support to both the caregiver and PWD. As the relationship between HCPs and caregivers develops over time, HCPs are in a position to identify when additional support is needed, such as counselling through a social worker or the initiation of respite services. This established and long-standing relationship between HCPs and caregivers facilitates continuous communication where caregivers are able to inform HCPs of any issues they might encounter in relation to respite services, such as inflexibility, unreliability, and unaffordability.[32] Healthcare professionals should work with the community multidisciplinary team to address the barriers of specific services with the goal of increasing respite service utilisation by caregivers. Furthermore, HCPs should help caregivers create a plan of care following respite service use to address disruptions and behaviours of PWD and minimise caregiver stress post-respite.

RECOMMENDATIONS FOR FUTURE RESEARCH

There is limited knowledge on which respite services have been beneficial to caregivers as the articles that were reviewed only described the respite services in relation to PWD and not their caregivers. Additional research is required to investigate the specific types of respite service caregivers need and which respite services have been most successful for caregivers. This knowledge can assist HCPs in improving utilisation rates of respite services and inform health systems on where to focus the funding of their community resources for PWD and their caregivers.

CONCLUSION

Caregiver burden is undoubtedly a prominent health issue which will persist as the population continues to age and the number of PWD increases. Caregivers of PWD partake in a demanding role which impacts their own health and wellbeing. Subsequently, health systems are responsible in providing support to these informal caregivers since they delay the use of formal services, such as residential care, and help PWD remain in their own homes longer. HCPs should perform thorough assessments of both the caregiver and PWD to maintain their health and wellbeing and to encourage the use of respite services. Furthermore, HCPs must identify the barriers to respite service utilisation by caregivers so that strategies are implemented and the incidence of caregiver burden is reduced.

Funding support: This manuscript was prepared in relation to the completion of a Masters in Health Studies program. The author did not receive funding to complete this work.

Declaration of conflicting interests: There are no conflicts of interest in relation to this manuscript.

REFERENCES

1. Australian Institute of Health and Welfare. Older Australia at a glance. 2018. Available online: https://www.aihw.gov.au/reports/older-people/older-australia-at-a-glance/contents/demographics-of-older-australians/australia-s-changing-age-gender-profile (accessed 18 Oct 2018).
2. Australian Institute of Health and Welfare. Australia's Health 2016. 2016. Available online: https://www.aihw.gov.au/reports/australias-health/australias-health-2016/contents/chapter-3-leading-causes-of-ill-health (accessed 18 Oct 2018).
3. Alzheimer's Association. Alzheimer's and Dementia in Australia. 2018. https://www.alz.org/au/dementia-alzheimers-australia.asp (accessed 18 Oct 2018).
4. Hum S, Cohen C, Persaud M, et al. Role Expectations in Dementia Care Among Family Physicians and Specialists. *Can Geriatr J.* 2014; 17(3): 95-102. https://doi.org/10.5770/cgj.17.110
5. Lethin C, Hallberg IR, Karlsson S, Janlov A. Family Caregivers' Experiences of Formal Care when Caring for Persons with Dementia Through the Process of the Disease. *Scand J Caring Sci.* 2016; 30: 526-534. https://doi.org/10.1111/scs.12275

6. O'Connell B, Hawkins M, Ostaszkiewicz J, Millar L. Carer's Perspectives of Respite Care in Australia: An evaluative study. *Contemp Nurse*. 2012; 41(1): 111-119. https://doi.org/10.5172/conu.2012.41.1.111
7. Moyle W, Edwards H, Clinton M. Living with Loss: Dementia and the family caregiver. *Aust J of Adv Nurs*. 2002; 19(3): 25-31. http://www.ajan.com.au/ajan_19.3.html
8. Daniel N. Integrating Care for Caregivers. *Nurs N Z*. 2014; 20(10): 28-29. http://0-web .b.ebscohost.com.aupac.lib.athabascau.ca/ehost/pdfviewer/pdfviewer?vid=11&sid=ac7f21ec-8501-4cd7-bd06-421e30dbd218%40sessionmgr101
9. Aoun SM, Toye C, Slatyer S, Robinson A, Beattie E. A Person-centred Approach to Family Carer Needs Assessment and Support in Dementia Community Care in Western Australia. *Health Soc Care Community*. 2018; 26: 578-586. https://doi.org/10.1111/hsc.12575
10. Hanna A, Donnelly J, Aggar C. Study Protocol: A montessori approach to dementia-related, non-residential respite services in Australia. *Arch Gerontol Geriatri*. 2018; 77(2018): 24-30. https://doi.org/10.1016/j.archger. 2018.03.013
11. Eifert EK, Eddy J. The Role of Needs Assessments in Enhancing Support Service Utilization by Family Caregivers of Persons with Alzheimer's Disease. *Am J Health Stud*. 2012; 27(4): 227-235. http://0-web.b.ebscohost.com.aupac.lib.athabascau.ca/ehost/pdfviewer/pdfviewer?vid=4&sid=2cf9d01d-3ff6-4d3f-a07c-1af1b09beca3%40pdc-v-sessmgr01
12. Stirling C, Andrews S, Croft T, Vickers J, Turner P, Robinson A. Measuring Dementia Carers' Unmet Need for Services – An exploratory mixed method study. *BioMed Central*. 2010; 10(122): 1-10. https://doi.org/10.1186/1472-6963-10-1222
13. Tretteteig S, Vatne S, Rokstad AM. The Influence of Day Centres for People with Dementia on Family Caregivers: An integrative review of the literature. *Aging Ment Health*. 2016; 20(5): 450-462. https://doi.org/10.1080/13607863.2015.1023765
14. Tang J, Ryburn B, Doyle C, Wells Y. The Psychology of Respite Care for People with Dementia in Australia. *Clin Psychol*. 2011; 46(2011): 183-189. https://doi.org/10.1111/j.1742-9544.2010.00005.x
15. Australian Institute of Health and Welfare. Dementia in Australia: National data analysis and development. Canberra, ACT; 2007. Available online: https://www.aihw.gov.au/getmedia/bb7f4ad4-9879-4ce7-8b6b-fa3ca1ca3866/dandad.pdf.aspx?inline=true (accessed 18 Oct 2018).
16. Access Economics. Caring places: Planning for aged care and dementia 2010-2050. Canberra: Alzheimer's Australia; 2010. Available online: http://www.fightdementia.org.au/research-publications/access-economics-reports.aspx (accessed 18 Oct 2018).
17. Access Economics. Making choices: Future dementia care – projects, problems and preferences. Canberra: Alzheimer's Australia; 2009. Available online: http://www.fightdementia.org.au/research-publications/access-economics- reports.aspx (accessed 18 Oct 2018).
18. McCabe M, You E, Tatangelo G. Hearing their Voice: A systematic review of dementia family caregivers' needs. *Gerontologist*. 2016; 56(5): 70-88. https://doi.org/10.1093/geront/gnw078
19. Australian Institute of Health and Welfare. Residential Aged Care in Australia 2009–10: A statistical overview. 2011. Available online: http://www.aihw.gov.au/publication-detail/?id=10737419861 (accessed 18 Oct 2018).
20. Vreugdenhil A. 'Ageing-in-place': Frontline experiences of intergenerational family carers of people with dementia. *Health Sociol Rev*. 2014; 23(1): 43-52. https://doi.org/10.5172/hesr.2014.23.1.43
21. Australian Government Department of Health and Ageing. Living Longer, Living Better: Aged care reform package. 2012. Available online: http://www.health.gov.au/internet/publications/publishing.nsf/Content/ageing-aged-care-reform-measures-toc (accessed 18 Oct 2018).
22. Lilly MB, Robinson CA, Holtzman S, Bottoroff JL. Can We Move Beyond and Burnout to Support the Health and Wellness of Family Caregivers to Person with Dementia? Evidence from British Columbia, Canada. *Health Soc Care Community*. 2012; 20(1): 103-112. https://doi.org/10.1111/j.1365-2524.2011.01025.x
23. Bainbridge HT, Cregan C, Kulik CT. The Effect of Multiple Roles on Caregiver Stress Outcomes. *Int J of Appl Psychol*. 2006; 9(2): 490-497. https://doi.org/10.1037/0021-9010.91.2.490
24. Tatangelo G, McCabe M, Macleod A, Konis A. I Just Can't Please Them All and Stay Sane: Adult child caregivers' experiences of family dynamics in care-giving for a parent with dementia in Australia. *Health Soc Care Community*. 2017; 26: 370-377. https://doi.org/10.1111/hsc.12534
25. O'Dwyer ST, Moyle W, Zimmer-Gembeck M, De Leo D. Suicidal Ideation in Family Carers of People with Dementia. *Aging Ment Health*. 2016; 20(2): 222-230. https://doi.org/10.1080/13607863.2015.1063109
26. Peetoom KB, Lexis MA, Joore M, Dirksen CD, Witte LP. The Perceived Burden of Informal Caregivers of Independently Living Elderly and their Ideas About Possible Solutions. A mixed-methods approach. *Technol and Disabil*. 2016; 28(2016):19-29. https://doi.org/10.3233/TAD-160441
27. Bastawrous M, Gignac MA, Kapral MK, Cameron JI. Factors that Contribute to Adult Children Caregivers' Well-being: A scoping review. *Health Soc Care Community*. 2015; 23(5): 449-466. https://doi.org/10.1111/hsc.12144
28. Martin Y, Gilbert P, Mcewan K, Irons C. The Relation of Entrapment, Shame and Guilt to Depression, in Carers of People with Dementia. *Aging Ment Health*. 2006; 10(2): 101-106. https://doi.org/10.1080/13607860500311953
29. O'Dwyer S, Moyle W, van Wyk S. Suicidal Ideation and Resilience in Family Carers of People with Dementia: A pilot qualitative study. *Aging Ment Health*. 2013; 17(6): 753-760. https://doi.org/10.1080/13607863.2013.789001
30. Singh P, Hussain R, Khan A, Irwin L, Foskey R. Dementia Care: Intersecting informal family care and formal care systems. *Journal Aging Res*. 2014; 2014: 1-9. https://doi.org/10.1155/2014/486521
31. Shanley C, Fetherstonhaugh D, McAuliffe L, Bauer M, Beattie E. Providing support to Surrogate Decision-makers for People Living with Dementia: Healthcare professional, organizational and community responsibilities. *Health Soc Care Community*. 2017; 25: 1563-1570. https://doi.org/10.1111/hsc.12456
32. Neville C, Beattie E, Fielding E, MacAndrew M. Literature Review: Use of respite by carers of people with dementia. *Health Soc Care Community*. 2015. 23(1): 51-63. https://doi.org/10.1111/hsc.12095
33. Ward-Griffin C, Hall J, DeForge R, et al. Dementia Home Care Resources: How are we managing? *J Aging Res*. 2012; 2012: 1-11. https://doi.org/10.1155/2012/590724