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Building expert agreement on the importance and feasibility of workplace health promotion interventions for nurses and midwives: a modified Delphi consultation

Running head: A Delphi consultation on workplace health promotion for nurses and midwives

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Aim

To use a Delphi panel to determine the importance and feasibility of workplace health promotion interventions to promote and support the health of the Australian nursing and midwifery workforce.

Background

The health workforce often reports rates of ill health which are higher than other workforces, yet they have received little investment in workplace health promotion.

Design: a modified Delphi study

Methods

Two rounds of a modified Delphi technique in which 11 of 19 purposively selected expert panellists discussed, rated and provided feedback through an electronic questionnaire about the importance and feasibility of 46 workplace health promotion interventions and processes for nurses and midwives. Composite scores of importance multiplied by feasibility were calculated and ranked. The Delphi was undertaken in September 2015.

Results

Mental health strategies were prioritised as the most important and feasible of the intervention topics, followed closely by healthy eating and physical activity interventions; smoking cessation ranked lowest. The most highly ranked interventions targeted healthy eating, stress management and resilience training. Highest ranked processes to support development of a healthy work environment included collaboration and employee wellness groups.

Conclusions

Study findings identified key workplace health promotion priorities, and provide direction for policy-makers and managers to promote nursing and midwifery workforce health.

Key words: Health promotion, nurses, midwives, workforce health, Delphi, stress management, healthy eating, activity, exercise.

SUMMARY STATEMENT

Why is this research or review needed?

- Workplace conditions can negatively affect the health of nurses and midwives and there are a number of well documented occupational health risks.
- Despite calls for hospitals and health facilities to focus on the prevention of ill health among the health workforce (and community) there has been little investment in workplace health promotion.

What are the key findings?

- The expert panellists in this Delphi study prioritised mental health promotion strategies (e.g. resilience training), followed by healthy eating (e.g. provision of healthy food in cafeterias) and physical activity strategies (e.g. reminders to meet activity goals) as important and feasible for the nursing and midwifery workforce. Smoking cessation programs were accorded less priority given the comprehensive social marketing and quit strategies already offered in the community.
- Panellists identified the need to focus on the development of interventions which address the underlying reasons for poor mental health in the workforce.
- Panellists were supportive of advancing strategies which enhance nurse and midwife decision-making about factors that impact on their health and utilise their skills and experience in program development. They were less supportive of initiatives which build organisational capacity for sustained health promotion action, including management-led support and the implementation of multicomponent programs.

How should the findings be used to influence policy/practice/research/education?

- A clear agenda to promote and create an enabling environment for healthy behaviours among nurses and midwives was proposed. Interventions which are considered both important and feasible were identified, with a focus on the prevention of mental ill-health.
- The expert panellists were less supportive of management involvement in health promoting workplaces and the implementation of sustained multi-component programs. Further research is required to understand the challenges of developing healthy work settings from a workforce perspective given that these approaches are central to evidence-based health promotion practice and a health promoting hospitals approach will not be successful without management support.

BACKGROUND

The Australian nursing workforce is ageing more rapidly than the general population it serves (AIHW 2016) and the stressful and physically demanding nature of this occupation takes a toll on nurses' health and well-being (Chiou *et al.* 2013, Cho *et al.* 2014, Reknes *et al.* 2014). Demand for nursing services is increasing with the ageing of many national populations, increasing chronic disease burden and longer life expectancy (Duffield *et al.* 2015), whilst worldwide there is an increasing shortage of nurses and midwives (Campbell *et al.* 2013). Forty percent of nurses working in high income countries are expected to leave their employment in the next decade (Campbell *et al.* 2013), many with ill-health or injury, which are often reported in nurses at rates higher than other industries (Ngan *et al.* 2010). Despite this, little investment has been reported in strategies to protect and strengthen the health of nurses and midwives and slow the rate at which they leave, even though health and well-being are critical in determining the exit of health workers (Schofield & Beard 2005, Perry *et al.* 2016a). In general, nurses' health is undervalued and many aspects of work-related health risks are not addressed (Cherniack, 2015).

Workplace conditions that affect the health and well-being of nurses and midwives are well documented, and can include occupational and workplace health risks, unsupportive 'culture' and the absence of policies and practices to support and promote wellness in the workplace (Hegney *et al.* 2003, Trinkoff *et al.* 2003, Letvak & Buck 2008). For instance, prolonged shift work is identified as raising the risk of certain cancers, heart disease, diabetes, obesity and sleep problems (Hansen & Stevens 2012, Eldevik *et al.* 2013, Kim *et al.* 2013, Gu *et al.* 2015, Hansen *et al.* 2016). Musculo-skeletal injuries are experienced at rates exceeding that of other workers and increasingly among those with sedentary roles (Ngan *et al.* 2010). Significant numbers of the workforce face violence and bullying, inflexible work schedules, long working hours and limited autonomy: all risk factors for mental ill health such as depression and anxiety (Trinkoff *et al.* 2008).

Undesirable lifestyle behaviours among nurses (smoking, alcohol abuse, inactivity and poor diet) may be related to specific occupational features. Links have been found between smoking, alcohol abuse and the stressful nature and emotional demands of the role (Han *et al.* 2012, Happell *et al.* 2013, Cheung & Yip 2015). High rates of overweight and obesity have been attributed in part to an unhealthy eating environment: limited availability and restricted access to healthy food in hospital cafeterias, ease of access to fast food vending machines, and a 'culture' of social sharing of high energy, low nutrient food (Faugier *et al.* 2001, Persson & Mårtensson 2006, Lawrence *et al.* 2009, Perry *et al.* 2016b). Low rates of leisure time physical activity are reported among time-poor nurses, particularly those working night or rotating shifts and with caring responsibilities outside of the workplace (Zapka *et al.* 2009, Blake *et al.* 2012, Peplonska *et al.* 2014, Chin *et al.* 2016).

Despite these identified workplace and work-related health risks and their potential impact on well-being, recruitment, retention and sickness absence, there has been little co-ordinated effort to improve nurses' and midwives' health (Groene & Jorgensen 2005). Health workers spend up to one-third of their waking lives at work over a period of decades but most health promotion actions are short-lived, *ad-hoc* and address individual risk related behaviours without acknowledging the contribution of workplace conditions (Whitehead 2005). However, well established, broad-ranging, evidence-based guidelines for the development of health-promoting facilities are available to support the health and well-being of the workforce (WHO 2004, Victorian Health Care Association 2009, NSW Government 2016). Their implementation involves targeted, co-ordinated, sustained actions applied organisation-wide to address workplace determinants of workforce ill health; however, there is no consensus on which strategies are most feasible or important for institutions to implement. The purpose of this study was to determine the opinions of key stakeholders in the field of health promotion, nursing and midwifery regarding appropriate prioritisation of workplace-based health promotion interventions and processes for Australian nurses and midwives.

THE STUDY

Aims

This study aimed to use a Delphi panel to determine the importance and feasibility of workplace health promotion interventions to promote and support the health of the Australian nursing and midwifery workforce.

Methods

Study design

We employed a modified Delphi technique, an iterative group deliberation process which has been used widely in the health field (Hasson *et al.* 2000). It entailed an initial teleconference meeting followed by a series of questionnaire rounds and controlled feedback on specific questions and issues among a group of expert panellists. This consultation was the second phase of a larger study ('Fit for the Future'; Perry *et al.* 2016a); in phase one, a web-based survey investigated the health status and behaviours of over 5000 nurses and midwives in New South Wales (NSW), Australia.

Selection of panellists

Participants were purposively selected using snowball sampling (Patton, 1990). Identification and selection of participants was driven by peer esteem. To be eligible for participation, panellists had to be considered experts by their peers in nursing/midwifery workforce management, workplace health promotion and preventive health. They had to be currently employed in nursing/midwifery management or health promotion/preventive health roles in Australia and have relevant knowledge and experience in terms of these fields.

An initial list of key nursing, midwifery, health promotion and preventive health agencies and peak bodies in Australia was drawn up by research team members. Chief Executive Officers (CEOs), directors and managers of these organisations were contacted via email and invited to participate, or to nominate an appropriate representative from their or other organisations. Forty-one potential

participants were emailed an invitation letter, participant information and the Delphi terms of reference.

Nineteen individuals agreed to take part in this Delphi consultation, of whom 13 (68%) participated in the initial teleconference, 12 completed round one (63%) and 11(58%) completed round two.

Panellists' organisations are presented in Table 1.

Table 1: Organisations represented in the Delphi consultation

Organisation represented	Description of organisation
Australian College of Mental Health Nurses	Peak national nursing body
Australian College of Midwives	Peak national nursing body
Australian Nursing and Midwifery Association	Peak national nursing body
Australian Primary Health Care Nurses Association	Peak national nursing body
Cancer Council Australia	Peak national cancer control body
Congress of Aboriginal and Torres Strait Islander Nurses	Peak national Indigenous nursing body
Heart Foundation	Peak national body
Hunter New England Local Health District	State government population-based healthcare region
Northern Sydney Local Health District	State government population-based healthcare region
Nursing and Midwifery Office of NSW Health	State government population-based healthcare region
Public Health Association of Australia	Peak national body
SageCo	Business management consultancy
NSW Nurses and Midwives Association	Nursing and midwifery trade union and professional organisation
South Eastern Sydney Local Health District	State government population-based healthcare region
Tresillian	Peak family care non-governmental organisation

The modified Delphi

The Delphi method has been widely used in health care research to identify priorities for the development of services, guidelines and tools (Hitch & Murgatroyd 1983, Bäck-Pettersson 2008, Peters *et al.* 2012, Shawahna *et al.* 2016). This methodology was chosen because characteristics of this approach (anonymity, iteration and controlled feedback) allow participants to give and modify (after receiving feedback) anonymous opinions with minimal risk of group domination by vociferous participants (Hasson *et al.* 2000). It can be used when face-to-face discussions are impractical given the scheduling and location of participants. This consultation was conducted online at participants' convenience within a two-week period per round.

A modified Delphi was chosen as this consultation followed an extensive workforce survey, and a modified approach to the classical open-ended first round was adopted for more efficient use of participants' time (Keeney *et al.* 2006). Conducted between September and November 2015, it entailed an introductory teleconference and two rounds of questionnaires. At the introductory teleconference, initial findings of the web-based survey investigating the health of the NSW nursing and midwifery workforce were presented (Perry *et al.* 2016a). In responding, panellists were asked to consider what might be appropriate health promotion policies and practices feasible for implementation in health facility settings.

Round one: a link to the online questionnaire was emailed to panellists, who were asked to rate the importance and feasibility of a number of workplace interventions to promote the health and sustainability of the nursing and midwifery workforce. It was expected to take approximately 20 minutes to complete. A two-week deadline for questionnaire return was given and two reminders sent. Responses were aggregated and fed back to the panellists via email, allowing respondents to compare their individual to group responses (Goodman 1987).

Round two: in a further survey round panellists were asked if they wanted to reconsider their round one responses in light of summarised group responses to each item. Similar timelines and reminders

were provided. As responses remained stable across the two rounds, consultation was closed after round two.

The Delphi instrument: identification of the interventions and item development

The questionnaire items were based on suggestions from the introductory teleconference and a literature search for workplace health promotion interventions used in healthcare settings. The search aimed to produce a list of workplace health promotion interventions for panellists to consider; this was not a systematic review and no appraisal was made of the quality of evidence produced. It was conducted predominantly by one member but discussed extensively with the author team. The search used the electronic databases Science Direct, EBSCO, ERIC, ProQuest, and BioMed Central (1990-end 2014) and a number of health promotion websites. Relevant literature identified in the search was read and brief details of each intervention extracted. Interventions were then sorted and collated in relation to their key topic and activities. This process generated a list of 34 workplace health promotion interventions (Table 2) and 12 workplace health promotion supporting processes (Table 3). Grouped into four topic categories, each represented key modifiable determinants of health for the nursing and midwifery workforce: (a) healthy eating (b) physical activity (c) mental health and (d) smoking cessation. A small number of interventions addressed both diet and activity as combined interventions; these were allocated in line with the principle component. Twelve processes were identified as key strategies to support development of a health promoting workplace.

Delphi questionnaire

The overarching questions which panellists were asked to consider in the electronic questionnaire (SurveyGizmo 2005-2016) were: “How *important* [and] how *feasible* do you think this intervention is to safeguard the future health, capability and capacity to deliver care of the nursing and midwifery workforce?” Within the four topic categories, panellists rated the 46 workplace interventions and

processes in relation to their importance and feasibility using Likert-type scales ranging 0-5, from (0) not at all important/ not feasible to (5) very important/ very feasible (Table 4). Open ended questions after each topic sought additional comments and feedback.

Analysis

Survey responses were exported from SurveyGizmo survey software to Microsoft Excel, and mean scores for importance, feasibility and a combined summary score of importance multiplied by feasibility scores were calculated for the four topics, the individual interventions and for processes to support the interventions. Interventions were ranked in order of the mean summary scores. The panellists' comments were collated for interpretation.

Qualitative comments from the expert panellists in response to each question were transferred to MS Word, read and re-read by one author who grouped them into themes of importance and feasibility in line with a descriptive, exploratory qualitative stance. Qualitative findings were then discussed and agreed with all authors.

Ethical review

Ethics approval was granted for all stages of the study by the relevant University and Local Health District Human Research Ethics Committees. Confidentiality could not be assured to panellists because many were nominated by their CEO/Director and some panel members knew each other through professional associations and recognised their voices in the initial teleconference. However, survey responses remained confidential.

RESULTS

Of a maximum of 5, scores for interventions ranged from 1.9 to 4.6, and for processes from 1.9 to 3.9 (see Table 4 for descriptions of score ranges). Individual intervention and process scores were separately ranked (see Tables 2 and 3). Mean scores were calculated for each of the four

intervention topics and implementation processes. Panellists' comments have been added in italics, where relevant.

Of the four topics, panellists ranked mental health and wellbeing highest for both importance and feasibility, with a mean composite score of importance x feasibility of 12.7. Food and nutrition was a close second, with a mean composite score of 10.6; then physical activity (scoring 9.0) and finally, smoking cessation interventions (scoring 6.7).

Table 2 Panellists' scored and ranked recommendations for workplace health promotion interventions

Workplace Interventions	Importance (mean score)	Feasibility (mean score)	Summary score (importance x feasibility)
Healthy food options available in work cafeterias	4.6	3.6	16.6
Provide stress management and resilience training for those in high risk jobs	4.2	3.5	14.7
Healthy food options in vending machines that are regularly restocked	4.2	3.4	14.3
Provide access to mental health programs for staff	4	3.5	14
Provision of mental health awareness training for staff	4.1	3.4	13.9
Provide training for managers and supervisors about ways to identify mental illness and support worker's recovery	4.2	3.3	13.9
Food labelling for onsite cafeteria food	4.1	3.3	13.5
Offer regular, free workplace counselling with a psychologist or counsellor	3.9	3.4	13.3
Offer mindfulness-based stress reduction programs at work	4	3.3	13.2
Social marketing and communication programs to provide tips, reminders and information about the benefits of meeting physical activity goals	3.6	3.3	11.8
Regular mental health well-being checks and support	3.8	3.0	11.4

Health assessments and feedback e.g. body mass index, blood pressure, cholesterol, blood glucose, percentage of body fat	3.0	3.7	11.1
Facilitating flexible work practices e.g. allowing employees to swap work shifts and create flexibility around where, when and how work is performed	4.2	2.6	10.9
Health education programs e.g. workshops and discussion groups with staff promoting the benefits of physical activity and healthy diets	3.6	3.0	10.8
Physical activity prompts e.g. signs encouraging stair use, email messages, SMS messages.	3.2	3.3	10.6
Workplace promotion of free telephone counselling support smoking quit services or the provision of self-help manuals, telephone counselling services, seminars and internet support services	3.3	3.0	9.9
Subsidised healthy food options in on-site cafeterias	3.6	2.7	9.7
Motivational telephone or face to face 'health coaching' to encourage positive physical behaviours	3.4	2.7	9.2
Allowing flexible work schedules to accommodate physical activity and other preventive health behaviours during the workday	4.0	2.2	8.8
Self-managed behaviour change and goal setting programs (e.g. keeping dietary intake records, tracking/monitoring weight online)	3.3	2.6	8.6
Subsidised pharmacological interventions e.g. provision of nicotine replacement therapy	3.1	2.7	8.4
Individual record keeping of daily physical activity to encourage goal setting	3.3	2.4	7.9
The provision of free or subsidised on-site gym and fitness facilities	3.3	2.3	7.6
Cognitive behavioural therapy to support tobacco quit intentions	3.1	2.4	7.4
Peer support programs with trained behaviour change mentors in the workplace e.g. volunteer employees who undergo training and refresher courses to enable them to support other workers	2.8	2.6	7.3

Offer skills building programs e.g. health educators offering training in cessation skills, health information and activities	3.0	2.4	7.2
Portable pedal machines for sedentary desk workers	2.6	2.6	6.7
Offer group cessation programs in the workplace e.g. ex-smoker run support groups	2.7	2.3	6.2
Buddy systems e.g. an arrangement where employees have someone to talk to and offer (smoking cessation) support when needed	2.7	2.3	6.2
Enforcement of penalties for smoking in smoke-free designated areas	2.7	2.1	5.7
Employee health risk appraisals e.g. individual assessment of smoker's aerobic capacity	2.3	1.9	5.2
Personalised low-fat dietary plans by dietitians	2.7	1.8	4.9
Offer incentives for workplace participation in group-based workplace interventions e.g. gift-cards, workplace recognition	2.3	2	4.6
Offer incentives to abstinent smokers and to supportive workmates e.g. prize draws for lottery tickets etc.	1.9	1.6	3.0

Interventions grouped by topic as: (a) healthy eating (b) physical activity (c) mental health and (d) smoking cessation

Mental health interventions

Panellists prioritised the following mental health interventions for importance: mental health training for managers and supervisors to be better able to support their staff (scoring mean 4.2) and provision of stress management and resilience training for those at high risk (4.2). Flexible working practices were also top scored for importance (4.2) (Table 2). However, training was not just important for managers – its relevance for all staff was recognised. Free workplace counselling and regular mental health well-being checks were also highly scored (3.9 and 3.8, respectively).

Panellists also emphasised the importance of addressing mental health in their free text comments, but noted the absence of interventions to counter bullying or manage heavy workloads, both of which contribute to poor mental health. For example:

One thing that seems to be missing is training and support for nurses and midwives on dealing with difficult behaviours (both in terms of patients and fellow staff) - this is vital in terms of addressing mental health [expert panellist 12].

Without exception, mental health interventions were accorded a lower feasibility than importance score. Nonetheless feasibility scores were relatively high, at 'quite feasible' for all except for facilitating flexible work practices which was scored lower at 2.6 (Table 2). The highest ranked items for feasibility included the provision of stress management and resilience training for those in high risk jobs and staff access to mental health programs (both 3.5).

Healthy eating interventions in health facility settings

The highest ranked single intervention, in terms of both importance and feasibility, was the provision of healthy food options in health facility cafeterias; as a topic, healthy nutrition ranked second overall. For single interventions, those that ranked highest in importance were the provision of healthy food options in work cafeterias (4.6) and regular re-stocking of healthy food options in on-site vending machines (4.2). Food labelling, including with 'traffic light' type systems, was also highly prioritised (4.1). The development of personalised low-fat dietary plans for staff by dieticians (2.7) was ranked lowest in this group (as 'somewhat important') (Table 2).

Healthy nutrition interventions that were considered the most important were also those considered the most feasible: offering healthy food options in work cafeterias (3.6) and vending machines (3.4). The development of personalised low-fat dietary plans by dieticians was ranked as the least feasible (1.8). Self-managed behaviour change and goal setting programs (2.6), and incentives for workplace participation in interventions (2.0) were scored as 'somewhat' feasible (Table 2).

Physical activity interventions

Physical activity interventions as a topic were ranked third overall. Of these, the top-ranked intervention was offering flexible work schedules to accommodate physical activity (4.0).

Interventions ranked as 'quite important' included the provision of health education programs and social marketing and communication programs (both scored 3.6). Portable pedal machines for sedentary workers and peer support programs (scored 2.8 and 2.6) were 'somewhat important'. One expert panellist felt that some interventions, including many that target physical activity, should not be offered in the workplace as they are currently addressed in the community:

Some of these strategies are already available outside the workplace, and are free. Not necessary to re-invent the wheel and have duplicate programs [expert panellist 05].

Although flexible work schedules to accommodate physical activity were considered important by the panellists, the feasibility of implementation was scored low at 2.2. A related group of physical activity interventions was considered most feasible within this topic and overall, and also ranked moderately highly for the combination of importance and feasibility. These comprised health education programs for staff, use of social marketing and communication programs, and prompts in the physical and electronic environment to remind staff of their exercise goals. Similarly ranked interventions coded as principally dietary comprised of assessment and feedback of anthropometric measures, which could also support activity-based interventions. Health coaching (2.7), portable pedal machines (2.6) and free or subsidised on-site fitness facilities (2.3) were only considered 'somewhat' feasible.

Smoking cessation interventions

Smoking cessation interventions had the lowest priority of the four topics. Within this topic, promotion of free telephone counselling, self-help manuals, seminars and internet quit support,

subsidised pharmacological interventions, cognitive behavioural therapy and other skills building programs scored highest in importance (ranging 3.0 to 3.3) (Table 2). However, less priority was accorded overall to the promotion or implementation of smoking cessation initiatives in the workplace because it was believed cessation support is comprehensively offered in the community:

All the activities listed above are available to everyone, not only employees, all staff have access to support to stop smoking [expert panellist 03].

The feasibility of workplace smoking cessation interventions was generally considered low, with only promotion of telephone self-help manuals, seminars and internet support services even scored as 'quite feasible' (3.0) (Table 2).

Workplace health promotion processes

Of the health promotion processes, the most highly ranked in terms of importance were forming collaborative relationships with organisations (mean score 4.3), health and group program leadership (4.1 and 4.3), creating opportunities for staff involvement in decision-making (4.2) and equitable access to health promotion interventions for all employees (4.2). Utilising employee expertise and monitoring programs for effectiveness were also important (scored 3.9). Multi-component strategies, which cover a range of topics and target organisational, environmental and individual levels, fell just short of 'important' (Table 3). However, whilst collaborative relationships, group leadership, using employee expertise and monitoring programs were all reported as 'quite feasible', other processes were scored as only 'somewhat feasible', including providing equitable access and gaining management support for employee wellness programs (Table 3). This was important because:

Unless you get management buy-in at all levels, it's unlikely that any of these strategies will be implemented and supported to bring about change [expert panellist 04].

Panellists' comments reflected concerns that health and wellbeing was better addressed using a holistic approach. Whilst it was important to prioritise, any and all of the strategies considered could be suitable for the various workplace contexts and nursing and midwifery populations. It was important to have the scope and flexibility to be able to meet local needs and the local environment:

Someone in an ICU may need different options than someone in a community rural position
[expert panellist 09].

The inter-relatedness of different and disparate elements was flagged, and the way in which components impacted each other:

Health and wellbeing should not be presented as a fragmented strategy but rather a whole of life planning exercise - for example, stress is a large contributor to claims and absenteeism and can be related to financial concerns and also job stability and future work options, so they should not be treated separately but rather packaged together [expert panellist 02].

For some panellists, provision of conditions that enable job satisfaction was the 'elephant in the room'— a major issue that could not be addressed through the interventions or approaches offered. Nurses' and midwives' job satisfaction was noted as paramount for their wellbeing, and derived from staffs' perception of the quality of care they are able to deliver. Consequently, whilst development of resilience skills was agreed as important, this represented symptom-management rather than treating the problem at source.

These initiatives don't necessarily address the underlying issues re work satisfaction such as bullying and harassment, and ability to provide good nursing care without being rushed and pressured to move on to next patient [expert panellist 06].

Table 3 Panellists' scored and ranked recommendations for workplace health promotion implementation processes

Process interventions	Importance (mean score)	Feasibility (mean score)	Summary score (importance x feasibility)
Seek and sustain collaborative partnerships with outside organisations to ensure necessary expertise, experience and resources	4.3	3.5	15
Establish or identify a workplace wellness co-ordinating group responsible for planning, overseeing and implementing workplace health programs	4.3	3.5	15
Monitoring and evaluation of health promotion programs to inform interventions	3.9	3.1	12.1
Build preventive health leadership	4.1	2.9	11.9
Create more opportunities for employees to be involved in decision-making processes	4.2	2.8	11.8
Utilising employee expertise in program development and implementation	3.9	3.0	11.7
Provide equitable access of health promotion interventions to all employees	4.2	2.6	10.9
The provision of on-going [mental health] programs to develop a health promoting workplace	3.6	2.9	10.4
The use of evidence-based workplace interventions	3.7	2.7	9.9
Implement multi-component strategies	3.8	2.5	9.5
Gain management support for preventive health activities	3.4	2.7	9.2
Conducting workplace needs assessments to identify priority issues and those most at risk in the workplace	3.4	2.5	8.5

DISCUSSION

In this Delphi consultation, expert panellists from peak nursing, midwifery, and preventive health organisations prioritised workplace health promotion interventions and processes for the Australian nursing and midwifery workforce, taking account of the practical constraints and feasibility of implementing these interventions in healthcare settings.

Workplace interventions

Based on their experience and expertise in management or preventive health, the panellists agreed the primary focus should be on mental health interventions, followed by healthy eating and physical activity. Smoking cessation was considered a lower priority overall in recognition of comprehensive cessation support available both in workplaces and the community. The relatively small proportion of the workforce daily smoking may also have been a factor (Perry *et al.* 2015).

The focus on mental health as a priority reflects the reported needs and concerns of the nursing and midwifery workforce, the well-recognised psycho-social work stressors that many face (e.g. low job control, unrelenting high workloads, organisational restructuring, and bullying) and their known links to various poor mental health outcomes (Browning *et al.* 2007, Mark & Smith, 2007, Albini *et al.*, 2011, Bogossian *et al.* 2014, Burke *et al.* 2014, Reknes *et al.* 2014, Lembrechts *et al.* 2015). The panellists determined this an appropriate priority in development of health promoting health facilities, emphasising provision of mental health training and resilience programs. However, some panellists pointed out that these interventions largely did not address the underlying reasons for poor mental health in the workforce where these are attributable to working conditions such as high workloads and long working hours.

Workplace mental health interventions are rarely conceptualised with a preventive focus. Examples of preventive mental health interventions for nurses and other occupations include communication or mentoring programs (Mor Barak *et al.* 2009, Ahola *et al.* 2012), roster flexibility (Sullivan & Reading 2002) and altering work schedules from continuous to one with weekend breaks (Ali *et al.* 2011). Flexibility in working arrangements has been proposed, including compressed hours, job sharing and shorter shifts, in addition to schedules in which healthy behaviours such as adequate meal breaks can be accommodated (Gliss 2000; Sullivan & Reading 2002, Havlovic *et al.* 2002, Atkinson *et al.* 2008, Speroni 2014). The latter was proposed in the Delphi questionnaire, but scored as important but less feasible in healthcare settings. Whilst the need for effective strategies to

prevent or reduce 'upstream' mental health risks for the workforce was flagged, so was the tension with feasibility within the current climate and environment of healthcare.

The majority of mental health interventions implemented in health facilities are individually-focused secondary prevention initiatives that aim to modify an individual's response to stressors (i.e. stress management and cognitive behavioural training). While gains have been made with such programs, particularly with cognitive behavioural therapy, changes in attitudes or behaviour can be short lived and fail to achieve health outcomes (Gardner *et al.* 2005, Brunero *et al.* 2008, Griffith *et al.* 2008, Palumbo *et al.* 2012, Ketelaar *et al.* 2013, Villani *et al.* 2013, Bolier *et al.* 2014). Individual-focused interventions do not recognise the multiple determinants of nurses' and midwives' health, including environmental (such as workplace) context (Barratt *et al.* 1994, Chalmers *et al.* 2001, Blake *et al.* 2008, Christensen *et al.* 2011, Tucker *et al.* 2011, Martinez *et al.* 2012, Mujika *et al.* 2014, Hjorth *et al.* 2016). A systematic approach is required in which multi-component programs are designed that target both the individual and the environment/organisation (Montano *et al.* 2014, Ruotsalainen *et al.* 2015).

The panellists' second priority was access to healthy food and healthy eating. In promoting nutritional interventions to change the healthcare food environment they acknowledged the central role of good nutrition for health and prevention of disease. Numerous nursing studies have identified the need to provide a healthier food environment for nurses (Persson & Martensson 2006, Han *et al.* 2011, Han *et al.* 2012, Kolbe-Alexander *et al.* 2014). Healthier food options in cafeterias and vending machines makes healthier choices an easier option for staff and visitors, and may also highlight hospitals as industry role models: clearly necessary given the high rate of overweight and obesity in nurses as well as populations (Bogossian *et al.* 2012, Kyle *et al.* 2016).

Healthy nutrition policies for hospitals have been developed in Australia, and some facilities provide healthier food options and limit fast-food through their vending machine and cafeteria contractors

(Ministry of Health NSW 2009, Victorian Department of Health 2010, ACT Government Health 2013).

This is particularly important for night and evening shift workers who face challenges to eat healthily as cafeterias are often closed and food storage and preparation areas inadequate (Faugier *et al.* 2001).

The highest scored exercise interventions involved health education and physical activity prompts which are practical, cost-effective and have had some success in changing behaviour among various occupations, particularly if strategies are combined (Blake *et al.* 2008, Troxell *et al.* 2009, Heath *et al.* 2012). Many nurses and midwives walk long distances during their shifts but the benefits are unclear and this activity may just contribute to fatigue (Chen *et al.* 2014). A lack of moderate and/or intense exercise in the workforce has been reported (Nahm *et al.* 2012, Albert *et al.* 2014), but on-site fitness facilities were considered less feasible and duplication of services offered in the community. Together with poor nutrition and high obesity, this is a priority for further intervention research.

Workplace intervention support processes

Panellists recognised but accorded less importance to gaining management support for preventive health activities. This finding illustrates a fundamental challenge in developing health promoting hospitals. Improving workforce health depends upon management priorities and decisions which support change, empower employees to work collectively with employers, and recognise health as a resource that supports productivity in workplaces (Goetzel & Ozminkowski 2008). The panellists clearly supported actions which enhance employee input to decision-making, but gave less priority to the managers' role in enabling a healthy workplace. This may illustrate the traditional individualistic approach in which health and well-being is seen primarily as the responsibility of the individual, overseen by health and safety departments (Kempainen *et al.* 2012). Further research is needed with nursing and midwifery managers to determine their perceived role in supporting healthy workplaces and how to take this forward.

Other nursing studies have identified nursing management as unsupportive of health promotion action (Casey 2007, Wilhelmsson & Lindberg 2009, Beaudet *et al.* 2011). Although these studies primarily focused on nursing roles rather than the development of healthy workplaces for nurses, they are relevant for this study as they suggest potential explanations for why nurse managers may be unsupportive. Primarily, lack of time and constrained health dollars meant that nurses were required to focus on the immediacy of disease management rather than the prevention of ill-health where behavioural or health gains are likely to take time and progress can be slow and difficult to measure (Wilhelmsson & Lindberg 2009, Johansson *et al.* 2010). Limited training, an absence of strategic planning and lack of resources to carry out health promotion activities has also been reported (Beaudet *et al.* 2011, Goodman *et al.* 2011, Roden *et al.* 2015).

Staff health promotion is also not seen as a priority in many health settings by staff or managers and health promotion activity is often seen as the sole responsibility of a specific division or person (Johnson & Baum 2001, Casey 2007). Managers and their staff in some studies have also shown a limited understanding of health promotion theory and practice, and continue to view health within a biomedical framework of individual disease management and curative care (Casey 2007, Piper 2008, Beaudet *et al.* 2011, Whitehead 2011). Within this framework, there may be less understanding of the need to develop the setting to improve the well-being of staff. This did not appear the case in this study given the support of panellists (which included nursing management) in a range of individual risk and broader organisational and environmental-focused interventions in health facilities, in line with health promotion best practice (Glanz *et al.* 2008).

There were some contradictions in the panellist's answers. Although they accorded less priority to management involvement in enabling workplace health promotion, they supported the development of preventive health leadership among staff and establishment of staff wellness committees which oversee health promotion action. Such key participatory strategies require the involvement and support of management if they are to be successful and have been identified as

essential components of a health promoting hospital (WHO 2004, Groene & Garcia-Barbero 2005). Such strategies allow employees to have more say over factors which impact their health, promote a sense of ownership and utilise employee skills and knowledge (Grawitch *et al.* 2006). Few workplace interventions in health facilities have been implemented in response to the explicit needs of employees, but without their meaningful involvement, health promotion programs are unlikely to succeed (Grawitch *et al.* 2007).

For advocates of health promoting hospitals, the lower importance panellists accorded to the implementation of multi-component and sustained programs are a concern. In the long term, on-going preventive health activities and processes are required, integral to organisational objectives, values and processes, and supported by both employees and employers (Quintiliani *et al.* 2008). Multi-component health programs are best practice, and as one panellist identified, are a holistic and more effective way to address unhealthy behaviours. For instance, systematic reviews have identified that joint physical activity and dietary workplace interventions aimed at several levels (organisational/ environmental and individual) have stronger evidence of effectiveness compared with single component interventions (Anderson 2009, WHO 2009, Goldgruber & Ahrens 2010).

On a more positive note, collaboration with outside organisations, also identified as a key strategy in advancing a healthy workplace, was ranked highly by the panellists. A Delphi study on the role of nurses in health promotion came to a very different conclusion when the panel of nurse managers could not agree the need for intersectoral collaboration (Whitehead 2008). Perhaps, awareness of the importance of collaboration has increased among the workforce, and there is now an enhanced understanding that the workforce is well-placed to pool expertise and resources with organisations which can strategically contribute to development of health promoting workplaces. Such organisations include external peak preventive health bodies, businesses and public health agencies with expertise in developing, implementing and evaluating effective health promotion programs. Inter-sectoral collaboration is recognised as fundamental to improving workforce health because key

stakeholders often work in isolation despite the potential benefits of avoiding duplication and strategic alignment of efforts, knowledge, resources and expertise (WHO 2016).

Strengths and limitations

The strengths of this study include its linkage to a major survey of the health and wellbeing of NSW nurses and midwives (Perry *et al.* 2016a), enabling panellists to consider new insights into the current workforce. The survey was based on findings of an extensive literature review and panellists were offered for consideration a wide selection of interventions previously implemented in the health workforce. The modified Delphi approach retained all but one of the relatively small participant group across the two survey rounds. The expert panellists in this study were selected on the basis of the central roles of their organisations in health promotion and the nursing and midwifery workforce. These organisations were identified by research team members through a process of local consultation, but some organisations may have been missed. Chief executives' choice of representatives may have biased responses, but overall those chosen were themselves senior executives and credible experts, as identified by their peers.

Conclusion

The expert panellists agreed the importance and feasibility of a range of individual, organisational and environmental-focused interventions for healthcare facilities in line with health promotion best practice. Their priorities emphasise the need for mental health initiatives for nurses and midwives to prevent ill-health and sustain the nursing workforce; crucial, given the detrimental impact of workplace conditions on nurse and midwife health and the global shortage of health workers. Study findings set out a blueprint for programs to promote the future health of the nursing and midwifery workforce. Further research is needed to understand challenges to implementation from a workforce perspective, particularly in enhancing understanding and gaining management support to

drive establishment of health promoting facilities utilising multi-component and sustained approaches.

Table 4 Descriptors of ranked score points for interventions and processes

Rank description	Importance score	Feasibility score	Importance x feasibility overall maximum score
Very important /very feasible	5	5	25
Important/feasible	4	4	16
Quite important/quite feasible	3	3	9
Somewhat important/somewhat feasible	2	2	4
Slightly important/slightly feasible	1	1	1
Not at all important/not at all feasible	0	0	0

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