








Contents continued from outside back cover

- 2611 Predicting nurses' occupational commitment and turnover intention: The role of autonomous motivation and supervisor and coworker behaviours
C. Fernet, N. Gillet, S. Austin, S.-G. Trépanier and S. Drouin-Rousseau
- 2620 The WeanCare nutritional intervention in institutionalized dysphagic older people and its impact on nursing workload and costs: A quasi-experimental study
M. Zanini, G. Catania, S. Ripamonti, R. Watson, G. Aleo, F. Timmins, L. Sasso and A. Bagnasco
- 2630 Changes over 10 years in the nursing workforce in Guangdong province, China: Three-wave multisite surveys
J. Liu, X. Liu, J. Zheng, K. Liu, Y. Wu, J. Wang, M. Li and L. You
- 2639 Personality, staff attitudes and their association with absenteeism and presenteeism in Australian public sector hospital-based nurses: A cross-sectional study
C. Banks and S. Pearson
- 2647 Sleep, fatigue and alertness during working hours among rotating-shift nurses in Korea: An observational study
A. Min, H.C. Hong, S. Son and T. Lee
- 2658 Prevalence and reasons for non-nursing tasks as perceived by nurses: Findings from a large cross-sectional study
S. Grosso, J. Longhini, S. Tonet, I. Bernard, J. Corso, D. de Marchi, L. Dorigo, G. Funes, M. Lussu, N. Oppio, L. Grassetti, L. Pais Dei Mori and A. Palese
- REVIEW ARTICLE
- 2674 Fall prevention education to reduce fall risk among community-dwelling older persons: A systematic review
M.F. Ong, K.L. Soh, R. Saimon, M.W. Wai, M. Mortell and K.G. Soh
- ORIGINAL ARTICLES
- 2689 Gender equality and managers' work in elderly and social care: A structural equation modelling approach
K. Allard, C. Hasselgren and L. Delleve
- 2697 The effect of discharge planning on length of stay and readmission rates of older adults in acute hospitals: A systematic review and meta-analysis of systematic reviews
C. Hunt-O'Connor, Z. Moore, D. Patton, L. Nugent, P. Avsar and T. O'Connor
- 2707 Psychosocial factors associated with conflicts among health professionals in the operating room in a Greek sample
M. Andriopoulou, D. Charos, V. Kolypera, V. Vivilaki and D. Tziallas
- 2715 Managerial and organisational prerequisites for the integration of palliative care in the intensive care setting: A qualitative study
H.H. Alshehri, A. Wolf, J. Öhlén and S. Olausson
- COMMENTARY
- 2724 Fostering an ethos of cultural humility development in nurturing inclusiveness and effective intercultural team working
K. Markey, M. Prosen, E. Martin and H.R. Jamal

ORIGINAL ARTICLE

The WeanCare nutritional intervention in institutionalized dysphagic older people and its impact on nursing workload and costs: A quasi-experimental study

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Abstract

Aim: The aim of this study is to explore how a nutritional intervention that improves the biochemical and functional profile of dysphagic older people impacts on nursing workload and costs for nursing homes.

Background: Dysphagic institutionalized older people particularly at risk of malnutrition require more intensive support from nursing staff and higher costs for nursing homes.

Method: This is an open pre-post longitudinal multicentre quasi-experimental study without a control group.

Results: There is a significant reduction in the number of enemas (from 3.51 to 1.11 enemas), with an average nursing workload reduction from 52 to 16 min per patient every month. Each nurse also spent 20 h less per patient every month spoon-feeding. This resulted in nursing staff cost savings.

Conclusions: The nutritional intervention led to a significantly better quality of life for the patients manifested through increased independence and social engagement. This reduced workload for nursing staff and costs for nursing home administrators.

Implications for Nursing Management: Sensitive, targeted nutritional interventions have the potential to improve nursing home residents' quality of life and enable a more efficient use of resources. This study revealed reduced workload and cost savings due to less time spent administering enemas and spoon-feeding, in addition to reduced malnutritional consequences.

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KEYWORDS

dysphagia, eating behaviours, elder nutritional physiology, food technology, institutionalized persons, staff workload

1 | BACKGROUND

As populations age (World Health Organization [WHO], 2015), the requirement for institutionalized care such as nursing home facilities is increasing (Trinkoff et al., 2020). Internationally, there are standards and good practice guidelines that support high quality, fundamental care to nursing home residents (Health Information and Quality Authority [HIQA], 2016). Therefore, there is confidence in fundamental care provision, which is multifaceted and relates to all aspects of daily living (Kitson, 2018). However, in fast-paced environments, it is recognized that gaps in fundamental care provision can arise (Sasso et al., 2016). There has been limited evidence of specific gaps in nutritional provision (Kalisch & Xie, 2014); however, qualitative studies based on fundamental care by Kitson et al. (2013) have revealed a 'universal view that food was unappetising'. Mealtime support by health care workers has also been found to be rushed due to time pressures, with little attention to nutritional status (Watkinson-Powell et al., 2014). At the extreme end, major issues with quality of care for older people in institutional and long-term settings have in the past raised serious concerns about the lack of attention to nutritional support (Francis, 2013).

In one study, for example, 22.6% of females and 17% of males were classified as malnourished with more than 50% at risk (Donini et al., 2016). Diekmann and Wojzischke (2018) found that the prevalence of malnutrition ranged from 14% to 44% and that one third of nursing home meals needed to be prepared with a modified texture. Moreover, the intake of energy and protein in this population often does not meet the recommended standards reported in the literature, and only one out of every two institutionalized older people manage to finish their meals (Miles et al., 2020).

Particularly, institutionalized older adults with swallowing impairments are at increased risk of malnutrition (Namasivayam & Steele, 2015) because of the difficulties related to preparing their food with the right texture (Massoulaud et al., 2011), with the correct amounts of proteins and energy (Pritchard et al., 2014). Of interest, malnutrition is an identified issue in nursing homes even in contexts where the staff perceive residents' nutritional status to be good (ten Cate et al., 2021). Malnutrition is associated with higher levels of comorbidity, impaired physical function and reduced cognitive status (Donini et al., 2016). Malnutrition is also clearly linked with the development of pressure ulcers in nursing home residents (Iizaka et al., 2010; O'Brien et al., 2016). Most of the older population are affected by chronic illnesses and co-morbidities, and if they become malnourished, there is significant impact on health outcomes, co-morbidities and mortality rates (Wirth et al., 2015). This is problematic, not only because of poor quality of life but there are also associated increased costs for health care systems and organisations (Zanini, Bagnasco, Aleo, et al., 2017).

It is interesting that although the social and cultural aspects of nursing home life are known to be important to residents (Suhonen et al., 2019), the social and cultural aspects of food have received very little attention (Crogan & Evans, 2010). However, a study recently introduced aspects of fine dining to the nursing home setting, including modified-texture foods (MTFs) with authentic flavours (Zanini, Bagnasco, Catania, et al., 2017). Improved eating experience and increased social interaction have been shown to increase uptake of food (Mathey et al., 2001; Zanini, Bagnasco, Catania, et al., 2017).

The hypothesis of this study is that a better energy and protein intake improves older people's general health conditions (e.g. less time for spoon-feeding, surveillance, fewer malnutrition consequences and enemas) and consequently also the efficiency of nursing management (Zanini, Bagnasco, Catania, et al., 2017). This is an important point because the rapid ageing of the population increases demand for nursing care and consequently for more efficient nursing management.

The primary objective of this study was to show how a holistic nutrition intervention (WeanCare) for dysphagic older nursing home residents ensures a more efficient management of nursing staff in terms of less time for spoon-feeding, surveillance during mealtimes and fewer enemas. The secondary objective of this study was to ensure a better health status and quality of life to nursing home residents.

2 | METHODS

2.1 | Design

This is an open pre-post longitudinal multicentre quasi-experimental study without a control group.

2.2 | The intervention

The intervention involved the introduction of a personalized modified-texture nutrition programme called the 'WeanCare Program', which consists of meals without nutritional supplementation, where food technology is applied to achieve personalized levels of density, viscosity, texture and particle sizes. It is a novel, low cost, prototype developed by members of the research team, in consultation with the partner company that uses traditional flavoursome Italian recipes that are condensed, dried and packaged for later use. The food is thickened with proteins or naturally occurring bulk items (e.g. collagen), rather than adding additional thickeners such as potatoes. Olive oil is added for taste and to include some fat. These products are low in fat and salt.

The device that produces the MTFs is compact, easy to operate and clean. The finished product although not visually obvious is immediately recognizable, appetizing and palatable upon tasting. Rather than the sticky constitution of thickened food, it is smooth and easy to swallow and distinguishable from the routine 'soup' that is created by randomly liquidizing and thickening regular foods. The 'WeanCare Program' was included in the routine eating and nutritional plan of all patients with swallowing disorders and with a diagnosis of dysphagia in the 12 nursing homes involved in the project. All patients were fed for 180 days using the WeanCare Program, providing a total of 25,920 MTF meals.

2.3 | Sample

The sample was selected for convenience by including all the institutionalized dysphagic older people who met our inclusion criteria and lived in the 12 nursing homes that participated in the present study. Sampling size adequacy was based on a literature analysis based on previous similar studies, where the sample size refers to a before-after study verified through a paired *t* test (Chow et al., 2007). The result of the sample size calculation was $N = 60.0191$, which was rounded up to 61 in relation to the participants' dropout risk. For this calculation, we used the value of the total proteins, which was used both for the present study and for our previous study (Zanini, Bagnasco, Catania, et al., 2017).

The nursing homes were selected through convenience sampling by personally contacting via email and then by phone the medical directors of the nursing homes and asking them if in principle they were willing to participate in this study.

After obtaining the authorization to conduct the nutrition intervention from the medical directors of the nursing homes, consent was obtained from the patients or their legal proxies. Patients were included if they were being fed with blended soft foods following the diagnosis of dysphagia, which had been either reported in the medical record or confirmed by a physician of the nursing home. Therefore, all dysphagic patients over the age of 65 years, with low co-morbidity levels (Cumulative Illness Rating Scale < 6), and whose diet was consistent with Levels 3 and 4 of the International Dysphagia Diet Standardisation Initiative Framework (IDDSI, 2019) were included in this study.

Patients were excluded if they presented high levels of co-morbidity (Cumulative Illness Rating Scale > 6), clinical instability, chronic or cancer diseases, severe dysphagia (Dysphagia Outcome and Severity Scale ≥ 2), percutaneous endoscopic gastrostomy feeding, orogastric tubes and terminally ill patients.

2.4 | Data collection

In addition to the data required for the inclusion criteria, our data sets also included information from the patients' previous medical records. The indicators used in the present study included information routinely collected by nursing homes. Data were collected for 6 months, from

8 January 2018 to 11 March 2019. Anthropometrical, biochemical, nutritional and functional parameters were collected at Time 0 and, prospectively, every 3 months after implementing the dedicated food programme for a total of three experimental evaluations (T0 = starting point, T3 = after 3 months, T6 = after 6 months, end of the study).

Serologic (lymphocyte count normal range: 1.40–3.50/ μ l), anthropometric (albumin normal range: 3.6–5.5 g/dl) and nutritional performance (total protein normal range: 6.4–8.3 g/dl) measures were collected to evaluate the enhancement of these parameters and their relationship with patients' well-being (Keller, 2019). Serologic data were used to evaluate whether daily nutritional intake was adequate in relation to the meals offered and were correlated with the patients' inflammatory status.

The menus were prepared according to the patients' values about food and reproduced the regular menus of the nursing home, recreating a familiar environment also for people with a MTF diet. In addition to the conditions of general malnutrition, we also evaluated some general conditions related to the patients' quality of life (e.g. participation in socialization activities, ability to eat on their own, amount of meal consumption, need to be spoon-fed and administration of enemas). Nutritionists, nurses and researchers were involved in data collection.

Difficulty with mealtimes was measured using the Edinburgh Feeding Evaluation in Dementia (EdFED) scale, which has been translated into and validated in Italian (Bagnasco et al., 2015). The EdFED scale, first developed by Watson (1994), has been described as the only validated scale for mealtime difficulty in older people available internationally (Alzheimer's Disease International, 2014). It has been extensively used in international studies of nutrition and eating in older people (Lin et al., 2010; Lin et al., 2011). The scale consists of 10 items enquiring about mealtime difficulty (e.g. 'Does the patient refuse to swallow?') scored on a 3-point Likert scale 0 (*never*), 1 (*sometimes*) and 3 (*always*). Six of the items form a single factor composed of items referring specifically to the behavioural aspects of dementia (Watson & Deary, 1997), and these items form a hierarchy of difficulty (Watson, 1996). The remaining items refer to nursing care and related observations.

TABLE 1 Sample characteristics

Sample characteristics	
Initial sample recruited	78
Dropped out	6 (5 died and 1 was discharged)
Final sample size	72
Males	15 (20.83%)
Females	57 (79.17%)
Mean age (years)	87 (SD 6.3)
Moderate to severe cognitive impairment (according to the MDS Cognitive Performance Scale)	70 (97.2%)
Participated in social activities	36 (51%)
Ate regularly	63 (87%)
Finished their meals	51 (71%)

2.5 | Ethical approval

Ethical approval was obtained by the Liguria Regional Ethics Committee (ID 11116 - no. 677/2020).

3 | RESULTS

A total of 72 (15 males and 57 females) older people were recruited in this study. Of these, 70 suffered from moderate to severe cognitive impairment, based on the MDS Cognitive Performance Scale (Morris et al., 1994). Initially, the sample consisted of 78 individuals, but five died and one was discharged, so the final sample consisted of 72 individuals (Table 1).

In the present study, we measured total proteins, albumin and lymphocytes as indirect indicators of malnutrition (Evans et al., 2021; Sergi et al., 2006), considering the inflammatory status of the patients detected by the nursing homes by means of blood tests.

The lymphocyte total mean count increased from 1.99/ μ l (SD 0.67) at Time 0 (T0) to 2.08/ μ l (SD 0.78) after 3 months (T3) and to 2.87/ μ l (SD 0.77) after 6 months (T6) (normal range: 1.40–3.50/ μ l). The two-tailed p value was less than .0001, and the 95% confidence interval of this difference changed from -1.1203 to -0.6397 (Figure 1). A higher lymphocyte total mean count showed that after the 6-month WeanCare nutritional intervention, the nursing homes residents had a lower risk of infection and more stable health conditions in general.

Body weight and the related body mass index (BMI) remained almost the same after 6 months, and no side effects were reported. The mean weight increase was equal to 1.6 kg (SD 1.92 kg).

Significant correlations were found between higher levels of albumin, which increased from 3.14 g/dl (SD 0.4) at T0 to 3.42 g/dl (SD 0.2) (normal range: 3.6–5.5 g/dl) after 6 months (T6) and the healing of pressure wounds (0.01) (Figure 2). All the pressure wounds had already healed after 3 months since the start of the nutritional intervention.

The overall increased consumption of meals throughout the day increased the amount of fluid intake, which together with the introduction of vegetable fibres enabled to drastically reduce the number of enemas performed every month. The mean amount of time needed to administer an enema in these patients was approximately 15 min (± 2). Following our intervention, for each patient, we passed from an average of 3.51 (SD 2.49) at T0 to 1.11 (SD 1.89) enemas after 6 months (T6) (Figure 3), leading to significant results in terms of reduced workload, passing from an average of 52.71 (SD 37.43) min per patient every month at T0 to 16.67 min per patient every month (SD 28.43) after 6 months. In other words, at T0 only 8 (11.11%) patients did not require enemas, whereas at T6, this number rose to 47 (65.28%). This led to a better quality of life for the patients, reduced workload for health care staff and savings for the nursing homes due to the reduced use of enemas.

Therefore, patients' general conditions related to clinical data associated to malnutrition significantly improved over time, but the most interesting findings were related to their eating behaviours. After 6 months, six (8.33%) additional patients started eating their meals regularly. Moreover, in the same timeframe, eight (11.11%) patients started eating all their meals from *never* to *always*, and another five (6.94%) patients started eating all their meals from *sometimes* to *always* (Table 2).

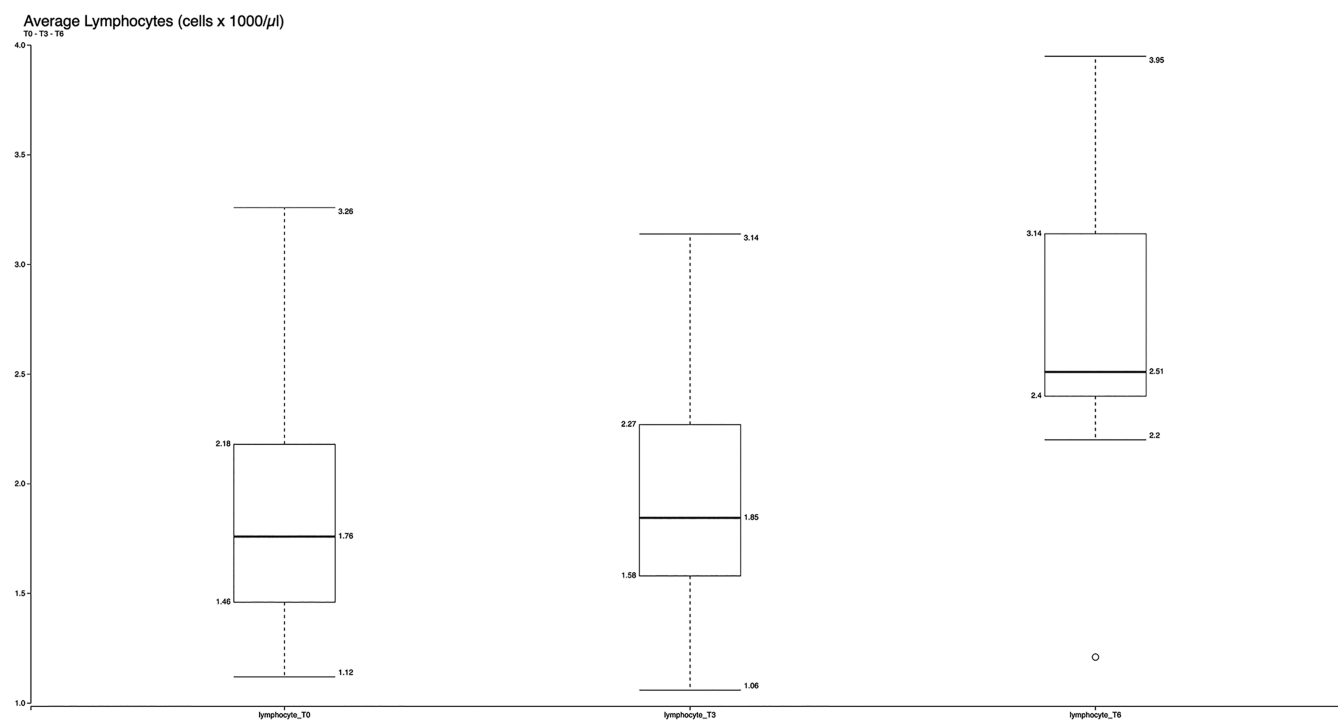


FIGURE 1 Lymphocyte total mean count over 6 months in a total population of 72 older people: from T0 = 1.99/ μ l (SD 0.67) to T3 (after 3 months) = 2.08/ μ l (SD 0.78) and to T6 (after 6 months) = 2.87/ μ l (SD 0.77); $p > .0001$

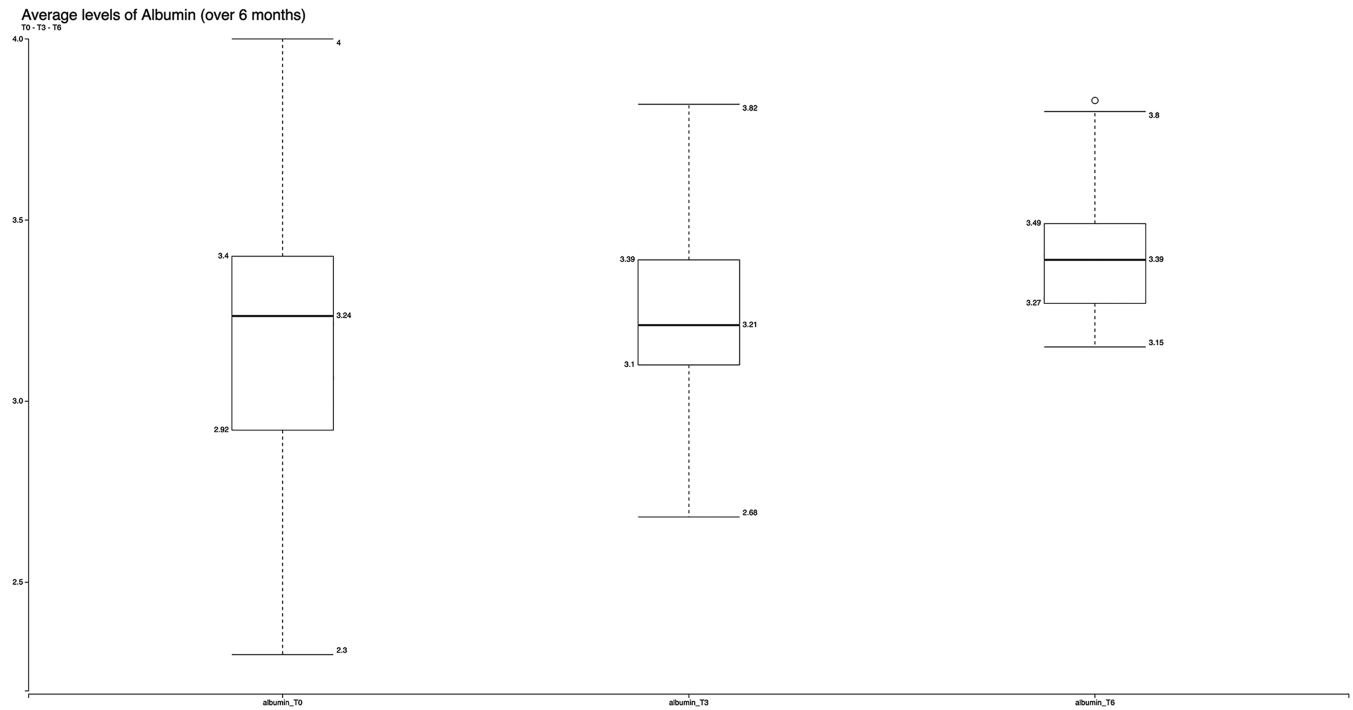


FIGURE 2 Increase of the mean levels of albumin over 6 months in a total population of 72 older people: from 3.14 (SD 0.4) at T0 to 3.42 (SD 0.2) at T6

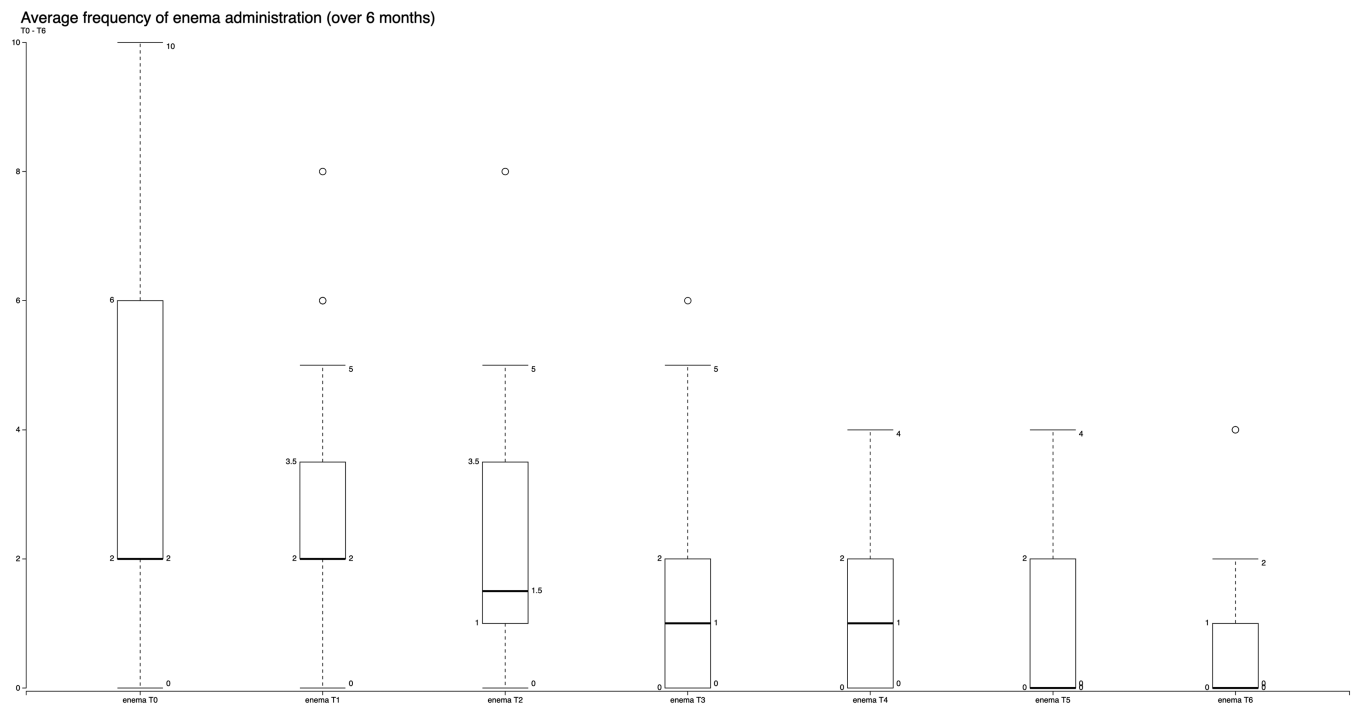


FIGURE 3 Mean reduction of frequency of enema administration over 6 months in a total sample of 72 older people: from 3.51 (SD 2.49) at T0 to 1.11 (SD 1.89) at T6. Two-tailed p value < .0001

Moreover, after 6 months, 13 patients (18.06%) no longer needed to be spoon-fed (Table 3). Because about 20 min were required to spoon-feed each patient, this result enabled each nurse to save 40 min a day, equal to a total of 20 h a month.

The patients' reduced self-feeding difficulties, from 7.27 (Time 0) to 5.57 after 6 months—measured using the EdFED Scale (Watson, 1994)—significantly contributed to reducing the patients' nutritional risk (Figure 4).

TABLE 2 Patients who ate all their meals after 6 months

Ate all their meals at T0	Ate all their meals at T6	Frequency	Percentage
Never	Never	3	4.17
Never	Sometimes ^a	1	1.39
Never	Yes	8	11.11
Sometimes ^a	Sometimes ^a	1	1.39
Sometimes ^a	Always	5	6.94
Always	Always	54	75.0

^aUp to 10% of the time.

TABLE 3 Patients needing to be spoon-fed after 6 months

Spoon-fed at T0	Spoon-fed at T6	Frequency	Percentage
No	No	24	33.33
Yes	No	13	18.06
Yes	Yes	35	48.61

This also resulted in 15 (20.83%) patients who started taking part in socialization activities after 6 months (Table 4) and therefore no longer required to have their meals served in their own rooms, with a reduction of staff required for surveillance during mealtimes.

4 | DISCUSSION

4.1 | Food acceptance, socialization and surveillance

Murphy et al.'s (2017) focus groups with family and carers of nursing home residents highlighted the importance of the social and relational aspects of eating. Local interventions can be targeted and focused on improving both the social aspect of eating (Regional Geriatric Program of Ontario, 2010; Zanini, Bagnasco, Aleo, et al., 2017) and the eating experience (Chapman et al., 2015; Zanini, Bagnasco, Catania, et al., 2017). In terms of nursing management, there are important practical benefits linked to the social aspects of eating because the consequence of higher levels of autonomy in this population also has a significant impact on reducing workload and time that nurses and other health care workers dedicate to spoon-feeding and surveillance during mealtimes. When nursing home residents do not participate in socializing activities, they remain in their own room, which is often on another floor, and this requires someone nearby to keep an eye on them. Instead, when patients sit together and participate in socializing activities, surveillance can be ensured by fewer staff, thus reducing staffing costs (Zanini, Bagnasco, Aleo, et al., 2017).

4.2 | Less spoon-feeding

The WeanCare modified-texture nutritional intervention significantly reduced the levels of swallowing exhaustion and impairment caused by

the prolonged difficulty trying to tolerate excessive volumes of foods and fluids (Painter et al., 2017; Serra-Prat et al., 2011) in our sample of institutionalized older people affected by dysphagia. Our participants improved their individual ability to swallow and their ability to eat on their own. This translated into more efficient use of staff time, because these patients started eating autonomously and no longer required to be spoon-fed, as also observed by Keller et al. (2017).

Moreover, taste and texture improve appetite and intake. One of the main differences between the WeanCare intervention of the present study and other previous similar interventions (Farrer et al., 2016; Okkels et al., 2018) was that the patients appreciated and recognized the meals because they were the same to what they were traditionally used to eating. In our study, all this enabled to significantly reduce the number (–13) of residents who required to be spoon-fed, thus reducing the workload for nurses and enabling them to dedicate their time to other nursing activities. This in terms of nursing management translates in more efficient use of staff time (Barrientos-Trigo et al., 2018).

4.3 | Better nutrition, better general conditions and less workload on nurses

Another important aspect of this intervention is the palatability of the food. When the nursing home residents recognized the food, they enjoyed it more and ate more, something which had been demonstrated also in other studies (Zanini, Bagnasco, Catania, et al., 2017). Preventing malnutrition requires a balanced, nutritious diet that is also appetizing (Blössner & de Onis, 2005) and contributes to better general health conditions, well-being and recovery (Drevet et al., 2014; Gordon et al., 2014). From a nursing management perspective, it is important that patients eat regularly all their meals because this improves their daily intake of liquids, proteins, lipids and carbohydrates, enabling them to feel better and healthier and therefore require fewer caring activities. Considering the growing numbers of older nursing home residents and co-morbidities, eating dependence is an increasing concern (Miles et al., 2020; Vikström et al., 2021; Zanini, Bagnasco, Catania, et al., 2017). Additionally, malnutrition in older people can give rise to significant negative effects such as infections, dehydration, wound healing problems, falls, risk of developing pressure ulcers and overall increased morbidity and mortality (Landi

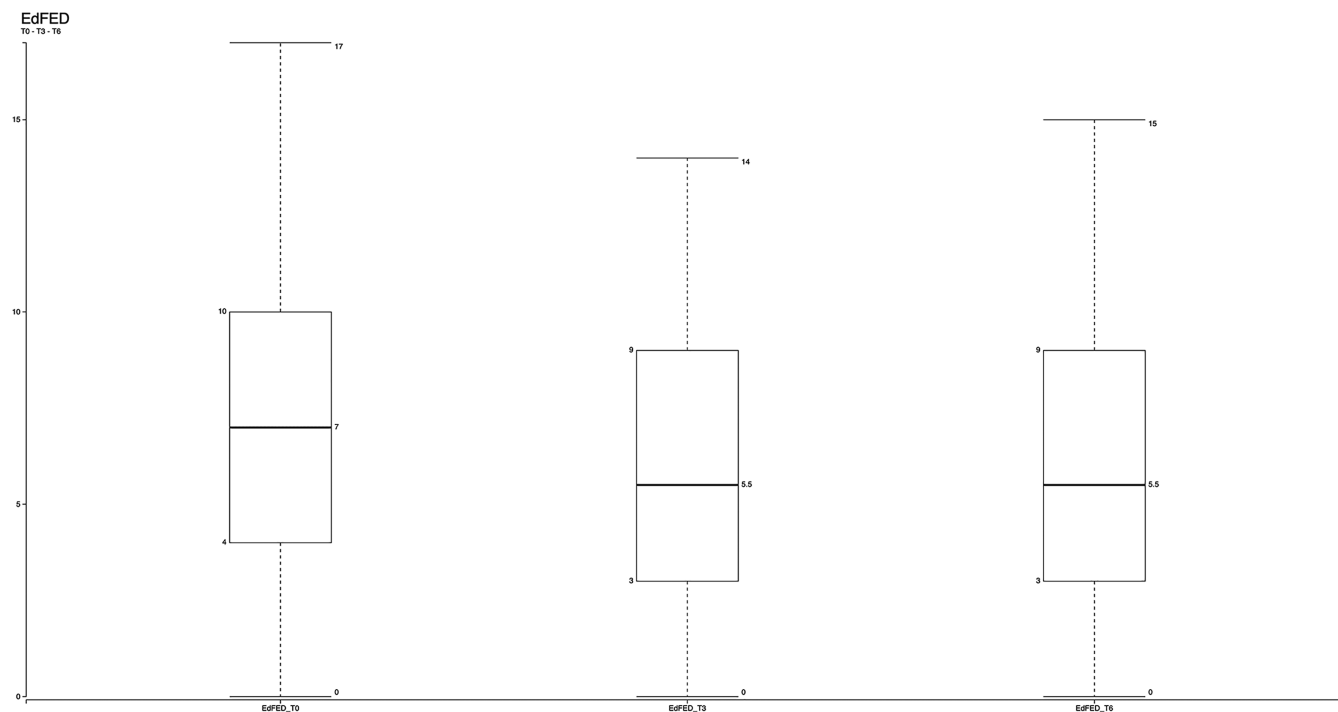


FIGURE 4 Box plot showing how the average levels of difficulties during feeding using the Edinburgh Feeding Evaluation in Dementia (EdFED) score dropped from 7.27 (Time 0) to 5.57 (Time 6) after 6 months in our total sample of 70 older people. Two-tailed p value = .03

TABLE 4 Patients who took part in socialization activities after 6 months

Participation in socialization activities at T0	Participation in socialization activities at T6	Frequency	Percentage
No	No	20	27.78
No	Yes	15	20.83
Yes	Yes	37	51.39

et al., 2016). Malnutrition also increases older people's weakness and reduces alertness, affecting their quality of life, such as the ability to walk, socialize and perform activities of daily living, such as eating, personal hygiene and getting dressed (Bassola et al., 2020), all which impact on the workload of nursing staff.

4.4 | Fewer enemas, more efficient use of staff time and resources

The nursing home residents' improved ability to eat all their food also increased their fluid intake, which consequently reduced the need to resort to enemas to facilitate bowel movement and defecation. The reduced requirement for enemas based on an individualized diet that included fibres and hydration that reduced constipation was also a significant finding, as this not only improved quality of life for residents, by restoring a greater sense of normality, but similarly to the findings of another previous study (Palese et al., 2010), nurses made a more efficient use of their working hours and reduced costs related to purchasing and administering enemas.

5 | LIMITATIONS

The sample size was limited and based on convenience sampling, therefore more methodologically rigorous studies, such as randomized controlled trials, are needed in the future. It was difficult to access additional diagnostics because the nursing homes were obliged to manage patients with predefined costs. The Covid-19 pandemic significantly influenced data collection (restricted access) and patients' survival rates. A strength of this study was that all the nursing home staff realized how important this nutritional approach was for its organisational management.

6 | CONCLUSIONS

The provision of appetizing meals with a texture that is modified according to individual swallowing ability, ensuring at the same time the right amount of energy and protein, significantly improved the health conditions especially in patients with swallowing disorders. From a nursing management perspective, this nutritional intervention

produced significant results in terms of reduced workload, more efficient use of nursing staff and less costs.

Practice and policy in this fundamental aspect of care need to be advanced. Research on the benefits of nutrition in older people needs to be increased, and the nursing home managers need to adjust their emphasis on this fundamental aspect of care (Kitson, 2018). Nursing managers have the moral, professional and ethical responsibility to pay more attention to the clinical, human, social and organisational benefits of nutrition.

7 | IMPLICATIONS FOR NURSING MANAGEMENT

Nursing interventions that are targeted to improving nutrition in older people living in nursing homes can have a significant impact on health care outcomes and consequently also on the nursing management. Malnutrition among institutionalized older people is a substantial challenge, likely to increase as the older population grows. Nurses have a key role in this fundamental aspect of care, not only through careful assessment but also through nutritional care interventions aimed at improving the general health conditions of older people (Bonetti et al., 2013). In addition to improvements across many key performance indicators, attention to nutritional status in this study resulted in a more efficient use of nurses' working hours and cost savings due to reduced time for spoon-feeding, surveillance, fewer consequences linked to malnutrition and fewer enemas. Paying attention to this fundamental aspect of care, and raising awareness about dietary needs, both physical and social, will also help to prevent major lapses in care (Francis, 2013) and serious consequences arising for nurse managers as a result (Hayter, 2013).

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CONFLICT OF INTEREST

There is no conflict of interest.

AUTHOR CONTRIBUTIONS

AB, GC, MZ, AR and LS are involved in study conception or design. AB, AR, GC, MZ, AR and SR collected the data. RW and MZ analysed and interpreted the data. AB, MZ and LS supervised the study. MZ, GA and FT wrote the manuscript. MZ, AB, LS and FT are involved in critical revisions for important intellectual content. All authors approved the final version.

ETHICAL APPROVAL

Ethical approval was obtained by the Liguria Regional Ethics Committee (ID 11116 - no. 677/2020).

DATA AVAILABILITY STATEMENT

The authors elect to not share data.

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ORIGINAL ARTICLE

Changes over 10 years in the nursing workforce in Guangdong province, China: Three-wave multisite surveys

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Abstract

Aims: The study aimed to describe the changes in the nursing workforce in 2008–2018 in Guangdong province, China.

Background: A strong nursing workforce is important in the development of the health care system in China. However, whether the nursing workforce in China has improved is underexplored.

Methods: Three waves of surveys were conducted in hospitals in Guangdong province, China, in 2008, 2014 and 2018.

Findings: The proportion of less experienced nurses and nurses holding a bachelor's degree has increased. The hospital nurse-to-patient ratio did not change significantly. The work environment deteriorated from 2008 to 2014 and improved from 2014 to 2018. Nurse-perceived staffing adequacy and nurses participating in hospital administration were scored lowest. The nurse–physician relations declined from 2008 to 2018. Nurse satisfaction, retention and quality of care improved, while reduced personal accomplishment deteriorated.

Conclusion: The nursing workforce in Guangdong province, China, is young and highly educated. Nurse outcomes and quality of care have made progress from 2008 to 2018. Nurse staffing and burnout remain matters of concern.

Implications for nursing management: Strategies addressing nursing workforce issues in China include dealing with the nursing shortage, establishing pathways for nurses' participation in decision-making, increasing nurses' income and welfare, promoting recognition of nurses and improving the quality of care.

KEYWORDS

burnout, intention to leave, job satisfaction, quality of care, work environment

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1 | INTRODUCTION

The nursing workforce is an essential element of the health care system, and nurses have been recognized for their key roles in providing health care services and shaping health care systems (World Health Organization [WHO], 2016). Because nurses are the only professional caregivers at the patient's bedside around the clock, they are crucial to the improvement of health care service delivery and to the enhancement of patient satisfaction (Liu et al., 2016). A strong nursing workforce is essential in ensuring that nurses are working efficiently.

Although the ideal of a strong nursing workforce is shared by countries worldwide, China's priorities and strategies are set by its unique health care environment. A decade ago, the nursing workforce in China faced a severe shortage (only 12.5 nurses per 10,000 population). Because nurses are important resources in achieving health care goals, the Chinese government devoted intensive efforts to strengthening the nursing workforce in the past 10 years. Targets for hospital nurse staffing and for educational preparation were set to guide the recruitment of nurses. The National Health Commission of China (2016) stated that, by the end of 2020, the nurse-to-bed ratio should be $\geq 0.8:1$ in Level 3 hospitals and $\geq 0.6:1$ in Level 2 hospitals; the percentage of nurses with advanced diplomas or higher degrees should be $\geq 80\%$ in Level 3 hospitals and $\geq 60\%$ in Level 2 hospitals. To reduce nurse turnover, the National Health Commission of China (2011b) advocated building a healthy work environment for nurses, emphasizing safe work conditions, adequate resources, supportive management and harmonious working relationships. To optimize nurses' performance, the Chinese government initiated the High Quality Nursing Care programme in public hospitals nationwide (National Health Commission of China, 2011a). The programme aimed to shift nursing practices from disease-centred care to person-centred care, thereby maximizing the capacity of nurses to deliver high quality of care. In recent years, whether China is on the path to improving its nursing workforce remained understudied.

According to the national statistical data, the extent of the nursing workforce increased from 1.65 million in 2008, that is, 12.5 nurses per 10,000 population to 4.45 million in 2019, 31.7 nurses per 10,000 population (National Bureau of Statistics of China, 2020). Simultaneously, the educational preparation for nurses was upgraded. The proportion of nurses holding an advanced diploma or a bachelor's degree in nursing increased from one-third in 2008 to three-quarters in 2019 (National Bureau of Statistics of China, 2020). These national data suggest an improvement in the nursing workforce. However, nursing workforce management includes monitoring the workforce numbers, investing in retention, developing leadership and maximizing nurses' contribution (WHO, 2016). The size of the national nursing workforce and its educational preparation are insufficient to provide a comprehensive description of the changes in the nursing workforce. A thorough evaluation of the nursing workforce is required. Previous studies suggested that hospital nurse demographic characteristics, nurse staffing, nursing work environment, nurse job satisfaction, burnout, intention to leave and nurse-perceived quality of care are important indicators of the nursing workforce and that these

indicators are related to patient outcomes (Aiken et al., 2014). However, to the best of our knowledge, no studies in China have used these indicators to assess changes in the nursing workforce, thereby limiting the current understandings of the development of the nursing workforce in China.

To close these research gaps, we aimed to describe changes in nurse demographic characteristics, nurse staffing, nursing work environment, nurse job satisfaction, burnout, intention to leave and perceived quality of care from 2008 to 2018. Through comprehensive analysis, this study may provide empirical evidence for policy-making recommendations for future nursing workforce planning.

2 | METHODS

2.1 | Design, settings and participants

This study consisted of three waves of cross-sectional surveys, conducted in Guangdong province, China, from October to December 2008, December 2013 to August 2014 and July to December 2018. A multistage sampling strategy was used to select hospitals, units and nurses in three waves of studies (Liu et al., 2019; You et al., 2013). First, a list of hospitals in Guangdong province was obtained from the provincial Health Commission. According to the distribution of hospitals, quota sampling was used to select Level 2 (300–500 beds) and Level 3 (>500 beds) general hospitals from the provincial capital city and other regions across Guangdong province. Second, a list of medical or surgical units in each participating hospital was obtained, and random sampling was used to select at least three units from each hospital. Third, all registered nurses who delivered direct care to patients in the selected units were invited to participate in the study. Nurse managers and nurses who were not on duty during the survey were excluded. As these were multisite, large-scale surveys, the sample size was not calculated, but at least 30 nurses were recruited in each hospital to analyze the nursing workforce at the hospital level according to experience from previous studies (You et al., 2012). Finally, we investigated 70 units (38 medical units and 32 surgical units) in 21 hospitals (11 Level 3 hospitals and 10 Level 2 hospitals) and collected surveys from 831 nurses (valid response rate: 91.4%) in 2008. In 2014, 1560 nurse surveys from 58 medical units and 53 surgical units in 23 hospitals (12 Level 3 hospitals and 11 Level 2 hospitals) were collected (valid response rate: 93.4%). In 2018, 89 medical and 92 surgical units were selected from 19 Level 3 hospitals and 17 Level 2 hospitals. A total of 2518 valid responses were collected in 2018 (valid response rate: 92.5%).

2.2 | Measures

The China Nurse Survey, adapted from the Pennsylvania Registered Nurse Questionnaire (Florida version), was used to collect nurses' demographic characteristics, nurses' perceptions of work environments, job satisfaction, burnout, intention to leave and quality of care

(Clarke & Aiken, 2008; Liu et al., 2012). All multi-item scales in the China Nurse Survey showed acceptable internal consistency and construct validity in the 2008 and 2014 studies (Liu et al., 2012; Liu et al., 2019).

2.2.1 | Demographic characteristics

Nurses' demographic characteristics, including age, gender and highest nursing qualification, were collected.

2.2.2 | Nurse staffing

Nurse staffing was measured by hospital nurse-to-bed ratio, which was calculated using the total number of nurses in the hospital divided by the total number of available beds.

2.2.3 | Work environment

The work environment was measured using the Practice Environment Scale—Nursing Work Index (PES-NWI). The PES-NWI consists of 31 items covering five subscales (Lake, 2002). The PES-NWI is widely used in international studies and has been endorsed by the National Quality Forum of the United States (Aiken et al., 2014). The scale is a 4-point Likert scale, with responses ranging from *strongly disagree* (scored 1) to *strongly agree* (scored 4). Higher scores indicated a better work environment. In the 2018 study, the Cronbach's α for the PES-NWI was .82–.94, indicating relatively high internal consistency.

2.2.4 | Nurse outcomes

In this study, nurse outcomes included job satisfaction, burnout and intention to leave. Job satisfaction was measured using 10 independent items asking the nurses to report their perceptions of nursing as a career, their current job and aspects related to their job, that is, shift, autonomy at work, personal development, professional status, income, health welfare, pension benefits and financial supports for continuing education (Zhang et al., 2014). The rating anchors ranged from 1 (*very satisfied*) to 4 (*very dissatisfied*). Lower scores indicated higher satisfaction. In the analysis, the responses were divided into dichotomies as suggested in previous studies (Zhang et al., 2014). 'Somewhat dissatisfied' and 'very dissatisfied' were categorized as 'dissatisfied,' and 'moderately satisfied' and 'very satisfied' were categorized as 'satisfied.'

Burnout was measured with the Maslach Burnout Inventory—Human Service Survey (MBI-HSS). The MBI-HSS is a 22-item scale, including three subscales: emotional exhaustion (EE), depersonalization (DP) and personal accomplishment (PA) (Maslach et al., 2010). The nurses were asked to indicate how often they had experienced

the items, ranging from 0 (*never*) to 6 (*a few times a week*). Higher scores on the EE and DP subscales and lower scores on the PA subscale indicated higher burnout. Those who scored ≥ 27 , ≥ 10 and ≤ 33 on EE, DP and PA, respectively, were considered as high burnout on EE, DP and reduced PA (rPA) (Maslach et al., 2010). The MBI-HSS is used widely in studies and has been established as a reliable and valid tool (Poghosyan et al., 2009). In the 2018 study, Cronbach's α for the MBI-HSS subscales ranged from .79 to .88, indicating acceptable internal consistency.

Intention to leave was measured with a single item asking nurses, 'Will you stay in your current job for the next 12 months?' (Zhang et al., 2014). The response anchors were changed in three surveys to extend the range of the data. Nurses could answer 'yes' or 'no' in the 2008 survey, whereas they could answer 'yes' or 'not sure' or 'no' in the 2014 survey. In the 2018 survey, the responses were 'definitely not,' 'probably not,' 'not sure,' 'probably yes' and 'definitely yes.'

2.2.5 | Quality of care

Nurses were important sources of data on care delivery. The quality of care was measured with independent items asking about nurse-reported confidence in managers solving patients' problems in their unit effectively and about patients' ability to care for themselves after discharge (scored from 1 = 'not at all confident' to 4 = 'very confident'), nurse-perceived overall quality of care (scored from 1 = 'poor' to 4 = 'excellent') and patient safety (scored from 1 = 'failing' to 5 = 'excellent') (Agency for Healthcare Research and Quality, 2013; Liu et al., 2019). Higher scores indicated better quality of care. Nurses' confidence in nurse managers solving patients' problems and in patients' ability to care for themselves was dichotomized as 'not confident' (response as 'not at all confident' and 'somewhat confident') and 'confident' (response as 'very confident' and 'confident'; Liu et al., 2019). Nurse-perceived quality of care was used as a dichotomous variable in the study: 'poor' and 'fair' were classified as 'poor/fair' quality of care, and 'excellent' and 'good' were classified as 'excellent/good' quality of care (Liu et al., 2019). Patient safety was dichotomized as a 'poor/failing' category (response value 4–5) and 'excellent/very good/acceptable' category (response value 1–3) in this study (Agency for Healthcare Research and Quality, 2013).

2.3 | Data collection

A hard copy survey was used for the nurse survey collection in 2008 and 2014, as described in previous studies (Liu et al., 2019; You et al., 2013). In 2018, an online survey was used to collect data. The researchers visited selected units and asked nurse managers to report the number of nurses on duty in the next 7 days. This number was used as the number of nurses being invited to participate in the study. Then, the researchers introduced the study to nurses and posted an invitation and a unique quick response (QR) code in the nurses' station in each unit. Nurses could scan the QR code with the WeChat app on

their smartphones. They could then complete and submit the survey on their smartphones. Each nurse could only complete the survey once using their WeChat account. We asked the nurses not to share the QR code with others. Three days after the distribution, the researchers reminded and encouraged every nurse to participate in order to increase the response rate. The QR code became invalid 7 days after distribution. During the data collection, only one nurse who did not use WeChat reported a willingness to participate in the survey. We provided a hard copy survey to the nurse, and the completed paper survey was returned to the researchers on the day of distribution.

2.4 | Data analysis

Descriptive statistics were used to depict nurse demographic characteristics, nurse staffing, nursing work environments, nurse outcomes and perceived quality of care in hospitals. Differences between years in nurse staffing and nursing work environments were tested using one-way one-factor analysis of variance with least-significant difference post hoc analysis. Comparisons between years in the proportion of nurses' dissatisfaction with nursing and with current job, high burnout and perceived inferior quality of care were tested using the Chi-square test. Cases with missing data were excluded pair-wise from analyses. Statistical significance was set at $\alpha < .05$ (two-sided). All analyses were conducted using SPSS 22.0.

3 | RESULTS

As shown in Table 1, 831, 1560 and 2518 valid nurse surveys were collected in 2008, 2014 and 2018, respectively. Most nurses are female (99.5%, 98.9% and 98.5% in 2008, 2014 and 2018, respectively). The average age of nurses was less than 30 years and changed little among the three surveys. However, the average number of years

working as nurses was lower in 2014 (4 years) and in 2018 (5 years), compared with that in 2008 (7 years). The proportion of nurses who hold bachelor's degrees in nursing increased from 16.9% in 2008 to 47.4% in 2018. However, the proportion of nurses with postgraduate degrees remained fairly stable at less than 1%.

In 2018, the average hospital nurse-to-bed ratio was 0.65 for Level 2 hospitals and 0.63 for Level 3 hospitals. No significant differences were found in the hospital nurse-to-bed ratio among the three surveys (Table 2). In 2018, 60% of Level 2 hospitals and 19% of Level 3 hospitals reached national standards for hospital nurse staffing.

The nurse-perceived work environment differed significantly across the three surveys. The average score on the PES-NWI decreased from 2008 (3.14) to 2014 (3.07), then increased in 2018 (3.11) (Table 3). The dimensions of the nursing work environment, 'staffing and resource adequacy' and 'nurse participating in hospital affairs' continued to be scored lowest in the three surveys. The ratings for these two dimensions declined in 2014 and then increased to a relatively equal level in 2018, compared with the ratings in 2008. Although the score for 'collegial nurse-physician relations' was highest among the five dimensions, the ratings decreased from 2008 (3.39) to 2014 (3.26) and 2018 (3.24). The dimensions, 'Nurse manager ability, leadership and support' and 'nursing foundation for quality care' did not change significantly ($p > .05$).

The proportion of nurses who reported dissatisfaction with being a nurse, their current job and all aspects of the job declined significantly (Table 3). In 2018, around one-third of nurses were dissatisfied with being a nurse (36.2%) and with their current job (36.4%). In all three surveys, the four lowest-rated aspects were income, financial support for continuing education, welfare in pension and welfare in health care, all of which are financial-related. In 2018, the percentage of nurses who were at high burnout on the EE, DP and rPA subscales were 38.7%, 27.0% and 51.0%, respectively (Table 3). Changes in nurse burnout on EE and DP from 2008 to 2018 were not significant, whereas the percentage of nurses who reported high burnout on rPA was increased from 2008 (44.6%) to 2014 (54.9%) and 2018 (51.0%).

TABLE 1 Demographic characteristics for survey nurses in 2008, 2014 and 2018

Characteristics	2008 (N = 831)	2014 (N = 1560)	2018 (N = 2518)
Gender (female, %)	99.5	98.9	98.5
Age (years, median, IQR)	27, 24–32	26, 23–30	27, 24–30
Experience as a nurse (years, median, IQR)	7, 2–13	4, 2–9	5, 3–9
Education in nursing (%)			
Secondary diploma	16.6	11.7	10.8
Advanced diploma	66.4	47.7	41.6
Bachelor's degree	16.9	40.3	47.4
Postgraduate degree	0.1	0.3	0.2
Working in Level 3 hospital (%)	50.4	55.1	55.0
Working unit type (%)			
Medical unit	54.8	55.8	50.0
Surgical unit	45.2	44.2	50.0

Abbreviation: IQR, interquartile range.

TABLE 2 Comparison of hospital nurse-to-bed ratio from 2008 to 2018 (median [IQR], *n* [%])

	Level 2 hospitals			<i>F</i> (<i>p</i>)	Level 3 hospitals			<i>F</i> (<i>p</i>)
	2008 (<i>n</i> = 10)	2014 (<i>n</i> = 11)	2018 (<i>n</i> = 15)		2008 (<i>n</i> = 11)	2014 (<i>n</i> = 12)	2018 (<i>n</i> = 21)	
Nurse-to-bed ratio	0.63 (0.54–0.72)	0.67 (0.56–0.78)	0.65 (0.55–0.78)	0.46 (.637)	0.64 (0.58–0.77)	0.60 (0.52–0.74)	0.63 (0.58–0.74)	0.67 (.517)
<0.5	0 (0.0)	2 (18.2)	2 (13.3)		0 (0.0)	2 (16.7)	1 (4.8)	
0.5 ~ <0.6	4 (40.0)	2 (18.2)	4 (26.7)		3 (27.3)	4 (33.3)	6 (28.6)	
0.6 ~ <0.7	3 (30.0)	2 (18.2)	3 (20.0)		4 (36.4)	3 (25.0)	6 (28.6)	
0.7 ~ <0.8	3 (30.0)	3 (27.2)	4 (26.7)		2 (18.2)	1 (8.3)	4 (19.0)	
≥0.8	0 (0.0)	2 (18.2)	2 (13.3)		2 (18.2)	2 (16.7)	4 (19.0)	

Abbreviation: IQR, interquartile range.

TABLE 3 Changes in work environment, nurse outcomes and quality of care from 2008 to 2018

	2008 (<i>N</i> = 831)	2014 (<i>N</i> = 1560)	2018 (<i>N</i> = 2518)	<i>F</i> / <i>χ</i> ²	<i>p</i>
PES-NWI ($\bar{x} \pm s$) ^a	3.14 ± 0.69	3.07 ± 0.62	3.11 ± 0.58	3.35	.035
CNPR ($\bar{x} \pm s$) ^b	3.39 ± 0.69	3.26 ± 0.67	3.24 ± 0.64	14.60	<.001
SRA ($\bar{x} \pm s$) ^c	2.93 ± 0.89	2.85 ± 0.77	2.95 ± 0.71	7.69	<.001
NMLAS ($\bar{x} \pm s$)	3.16 ± 0.74	3.15 ± 0.67	3.14 ± 0.64	0.17	.845
NFQC ($\bar{x} \pm s$)	3.20 ± 0.62	3.18 ± 0.56	3.22 ± 0.54	2.53	.080
NPHA ($\bar{x} \pm s$) ^d	2.96 ± 0.87	2.91 ± 0.76	3.04 ± 0.68	14.04	<.001
Nurse dissatisfaction					
Nursing as a career (<i>n</i> , %)	473, 56.9	892, 58.3	912, 36.2	228.24	<.001
Current job (<i>n</i> , %)	438, 52.8	753, 49.2	917, 36.4	100.97	<.001
Income (<i>n</i> , %)	660, 79.3	1122, 72.6	1503, 59.7	142.87	<.001
Financial support for continuing education (<i>n</i> , %)	576, 73.3	988, 64.8	1135, 45.1	265.79	<.001
Welfare in pension (<i>n</i> , %)	483, 59.4	859, 56.9	991, 39.3	165.43	<.001
Welfare in health care (<i>n</i> , %)	504, 60.7	841, 54.8	963, 38.2	177.06	<.001
Professional status (<i>n</i> , %)	538, 64.8	773, 50.4	849, 33.7	278.60	<.001
Opportunity for promotion (<i>n</i> , %)	455, 54.9	608, 39.4	739, 29.4	181.22	<.001
Shift arrangement (<i>n</i> , %)	324, 39.0	445, 28.9	605, 24.0	70.25	<.001
Autonomy at work (<i>n</i> , %)	107, 12.9	168, 10.9	239, 9.5	8.07	.018
High burnout					
EE (<i>n</i> , %)	292, 37.6	609, 41.9	950, 38.7	5.37	.068
DP (<i>n</i> , %)	202, 25.9	448, 29.9	663, 27.0	5.46	.065
rPA (<i>n</i> , %)	342, 44.6	769, 54.9	1253, 51.0	20.82	<.001
Not confident in managers solving patient care problems (<i>n</i> , %)	422, 50.9	869, 51.7	813, 32.3	183.61	<.001
Not confident in patients' ability to care themselves after discharge (<i>n</i> , %)	368, 44.4	779, 50.5	878, 34.9	100.41	<.001
Poor/fair quality of care on unit (<i>n</i> , %)	299, 36.0	640, 41.6	807, 32.1	37.86	<.001
Poor/failing patient safety on unit (<i>n</i> , %)	41, 4.9	105, 6.7	71, 2.8	36.61	<.001

Abbreviations: CNPR, collegial nurse-physician relations; DP, depersonalization; EE, emotional exhaustion; NFQC, nursing foundation for quality care; NMLAS, nurse manager ability, leadership and support; NPHA, nurse participating in hospital affairs; PES-NWI, Practice Environment Scale–Nursing Work Index; rPA, reduced personal accomplishment; SRA, staffing and resource adequacy.

^aThe median of PES-NWI score was 3.08. Post hoc analysis showed significant differences in the PES-NWI scores between 2008 and 2014 and between 2014 and 2018.

^bPost hoc analysis showed significant differences in the CNPR scores between 2008 and 2018.

^cPost hoc analysis showed significant differences in the SRA scores between 2008 and 2014 and between 2014 and 2018.

^dPost hoc analysis showed significant differences in the NPHA scores between 2008 and 2018 and between 2014 and 2018.

Moreover, rPA remains the most prominent aspect of burnout among the three surveys. In 2008, 7.6% of nurses reported they intended to leave their job within the next 12 months, whereas 92.4% reported their willingness to stay. As the response anchors changed, the proportion of nurses reporting willingness to stay changed to 24.4%, and 68.5% of nurses were not sure about whether to leave in 2014. However, the proportion of nurses who intended to leave was relatively unchanged from 2008 (7.6%) to 2014 (7.1%). In the 2018 study, the percentage of nurses reporting probably or definitely leaving their job declined to 1.1%. The percentage of nurses reporting definitely staying in their current job was 36.2% in 2018, which was higher than for those reporting willingness to stay in 2014 (24.4%, Figure 1).

In 2018, approximately one-third of nurses reported a lack of confidence in managers solving patient care problems and in patients' ability to care for themselves after discharge. The percentage of nurses perceiving poor or fair quality of care was 32.1%, whereas the percentage of those perceiving poor/failing patient safety on their unit was 2.8%. The percentage of nurses who perceived inferior quality of care was significantly lower in 2018, compared with the percentages in 2008 and 2014 (Table 3).

4 | DISCUSSION

The study displays the comparison of nursing workforce changes in Guangdong province, China, in the past 10 years. The results indicate an improvement in nurse education preparation; no significant changes in the quantity of nurse staffing; a trend of deterioration from 2008 to 2014, then improvements from 2014 to 2018 for nursing work environments, nurse burnout and perceived quality of care; and a continuing reduction in job dissatisfaction and intention to leave. An understanding of the changes in the nursing workforce identified in our study could help to provide useful recommendations for the ongoing development of the nursing workforce and the nursing profession in China.

4.1 | Nurse demographics

During our observations, the proportion of less experienced nurses and nurses holding bachelor's degrees increased over the past 10 years. To meet the health care needs of the population, a great number of new graduates were absorbed into health care institutions, resulting in a younger and less experienced workforce. In our study, the average age of nurses was 27, and the average length of time working as nurses was around 5 years, suggesting a younger workforce compared with those reported in other countries (Japanese Nurse Association, 2015; Ryan et al., 2019). In response to the young nursing workforce, standardized in-service training for new nurses is required to enhance nurses' competencies (National Health Commission of China, 2016). Considerable progress has been made in the educational preparation of nurses. More than 80% of nurses had at least an advanced diploma, higher than the national standard (i.e., $\geq 80\%$ in Level 3 hospitals and $\geq 60\%$ in Level 2 hospitals). Almost half of the nurses in the 2018 survey had a bachelor's degree, a higher proportion than in 2008 (17.0%) and 2014 (40.6%). The upgrading of nurses' educational level is an important strategy in meeting the demands for high-quality nursing care (National Health Commission of China, 2011a). However, the proportion of nurses holding a master's degree remained low. In our study, less than 1% of nurses had a master's degree. According to national statistics, the percentage of nurses holding a master's degree (0.2%) was lower than for other health care professionals, such as physicians (13.1%) and pharmacologists (3.4%) (National Health Commission of China, 2019). Postgraduate programmes provide nurses with the competence to deliver advanced care and to participate in nursing research. Policies that encourage nurses to pursue higher education are suggested.

4.2 | Nurse staffing

The hospital nurse-to-bed ratio was approximately the same from 2008 to 2018. Only 9 out of 15 Level 2 hospitals and 4 out of 21 Level

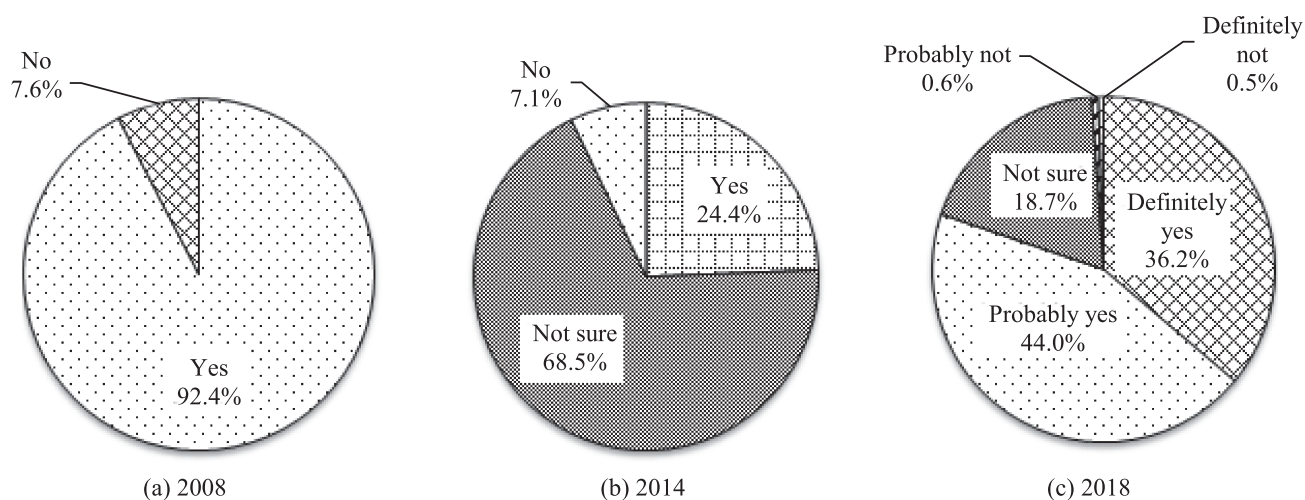


FIGURE 1 Nurses' intention to stay in their job in next 12 months in 2008–2018

3 hospitals reached the national standards of hospital nurse staffing in 2018. Although the national nursing stock has increased from 1.67 million in 2008 to 4.10 million in 2018 (National Health Commission of China, 2019), the health care needs of the population also increased. The total for hospital patient visits increased from 1.8 billion in 2008 to 3.6 billion in 2018, and the total number of hospital beds increased from 2.88 million in 2008 to 6.52 million in 2018 (National Health Commission of China, 2019). Therefore, the balance between supply and demand in the Chinese nursing workforce is still problematic. These findings of inadequate nurse staffing are consistent with previous studies reported in the United States, European countries and China, indicating a need for a general increase in hospital nurse staffing (Aiken et al., 2014; You et al., 2013).

4.3 | Work environment

Our results indicate a decline in nurses' ratings of work environments from 2008 to 2014 and a rebound from 2014 to 2018. Although the hospital nurse staffing ratio did not change significantly, nurse-perceived staffing adequacy decreased and then improved. Because the average number of years working as nurses had the same pattern of change as nurses' perception of staffing adequacy, which was 7 years in 2008, 4 years in 2014 (lowest) and then 5 years in 2018, we consider this could be one of the factors influencing nurses' perception of staffing adequacy. That is to say, the decrease in perceived staffing adequacy may be related to a less experienced workforce in 2014. The large proportion of new nurses may cause the workforce to perceive a heavier burden in providing high-quality care. In 2016, the Chinese government initiated the Healthy China 2030 Initiative, which proposed to apply internet technology to simplify the care delivery process (State Council of China, 2016). In recent years, along with the increase in work experience of the workforce, the hospital support system has also been strengthened. All these factors may contribute to the improvement in nurse-perceived workload and staffing adequacy. However, it is noteworthy that nurse staffing inadequacy remained the most concerning aspect of the work environment in all three surveys. This finding is consistent with previous studies in the United States, European countries and China (Aiken et al., 2014; You et al., 2013), suggesting that improvements in nurse staffing are needed. Our study indicates that nurses' low participation in hospital administration is another deficiency in the work environment. Nurses need to be provided with the essential skills required to be effective leaders. The International Council of Nurses and the Chinese Nurse Association have started Leadership for Change programmes in mainland China. These programmes are intended to help nurse leaders to develop leadership and coordination skills, together with the skills needed to facilitate changes and to influence policies (Chinese Nurse Association, 2017). Our study found an improvement in nurse participation in hospital administration from 2014 to 2018, possibly reflecting the positive effects of the training programmes. Hopefully, more nurses will be prepared for leadership positions, and nurses' voices will become more effective. Our study

found that nurse-physician collegial relations continued to decline from 2008 to 2018. This finding is consistent with a large-scale study conducted in 14 European countries (Aiken et al., 2014), indicating that nurse-physician relations needed to be improved. The lack of respect from physicians and the lack of teamwork are the most cited explanations for the poor cooperation between nurses and physicians (Zhang et al., 2014). Nursing has been developing quickly over recent decades, making it important to recognize the complementarity and interdependence of knowledge and skills that nursing brings to patient care (Chua et al., 2020). More efforts are needed to underline mutual respect and commitment to teamwork.

4.4 | Nurse outcomes and quality of care

Our study identified an improvement in career and job satisfaction and quality of care and a reduction in intention to leave from 2008 to 2018. Our results support policies implemented by the Chinese government to reduce nurse turnover, such as adopting a minimum level of nurse staffing as a requirement for hospital-level accreditation, building safe hospitals to avoid workplace violence, increasing income and improving nurses' well-being at work (Ministry of Human Resources and Social Security of China, 2017; National Health Commission of China, 2016). Although the government has advocated increasing the salary of health care professionals, the aspects associated with the highest levels of dissatisfaction were remuneration and welfare. These findings are consistent with previous studies in China and other countries (Akbari et al., 2020; Xu et al., 2016), suggesting that further efforts are needed to improve nurses' income. In our study, no significant changes in high burnout on EE and DP were observed from 2008 to 2018. However, around half of the nurses exhibited high burnout on rPA in 2014 and 2018, which was higher than those in 2008. Our results showed similar levels of EE and DP to levels in previous studies in North American, European and Middle East countries (Chemali et al., 2019), but Chinese nurses reported a higher burnout on rPA. These results align with those of a Chinese national survey, which found that Chinese nurses experienced moderate exhaustion and DP and highly rPA (Zhang et al., 2014). Current research attention to the rPA phenomenon is lacking. Therefore, further investigation into nurse burnout in the context of the Chinese health care system is needed.

The rebound in nurse-perceived quality of care in 2018 is a positive development. However, the portion of nurses reporting an unfavourable overall quality of care in our study in 2018 is higher than was reported in previous studies, 14.5% in Oman (al Sabei et al., 2020), 27% in Sweden (Lindqvist et al., 2015), 13.2% in Belgium (van Bogaert et al., 2017) and 16% in Thailand (Nantsupawat et al., 2016). Our results suggest that nurses showed fewer concerns about patient safety compared with the overall quality of care and patients' ability to care for themselves. This is consistent with previous studies indicating that necessary care being left undone is a more prevalent problem in care delivery than are mistakes or errors (Liu et al., 2019). More efforts are needed to improve the quality of care.

4.5 | Limitations

The study has certain limitations. First, longitudinal data were not available. This study aimed to compare the nursing workforce in Guangdong province at points in time from 2008 to 2018. Therefore, it was essential to achieve accurate data reflecting the nursing workforce at each point in time. Personal information about the nurses was not collected in all three surveys, thereby preventing follow-up. Second, nurse outcomes and quality of care were measured using nurse-reported data; objective data were not available. Researchers engaging in future studies are encouraged to combine objective data to reflect nurse and patient outcomes. Third, an online survey was used to collect data in 2018, unlike the hardcopy surveys used in 2008 and 2014. Different survey collection methods may cause differences in responses. However, our study showed almost the same valid response rates for three surveys.

4.6 | Implications for nursing management

The findings of this study suggest that the Chinese nursing workforce has made significant progress over the past 10 years. However, inadequate staffing, lack of participation in decision-making, unsatisfied income, reduced sense of PA and suboptimal quality of care are major concerns that need to be addressed. Therefore, investing more in dealing with the nursing shortage, establishing pathways for nurses to participate in decision-making, increasing nurses' income and welfare, promoting the recognition of the contribution of nurses and continuously improving quality of care may offer solutions to the nursing workforce issues in China.

5 | CONCLUSION

The study suggests that there have been improvements in education for nursing, nursing work environments, nurse outcomes and quality of care in the last 10 years in China. However, concerns regarding nurse staffing, nurse leadership, nurses' sense of fulfillment and the overall quality of care remain noteworthy. More efforts are needed to promote optimal outcomes for the nursing workforce in the future.

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CONFLICT OF INTEREST

The authors declare no competing interests.

ETHICS STATEMENT

The study was approved by the Ethics Committee of School of Nursing, Sun Yat-sen University (2019ZSLYEC-003).

DATA AVAILABILITY STATEMENT

Data available on request due to ethical considerations.

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ORIGINAL ARTICLE

Prevalence and reasons for non-nursing tasks as perceived by nurses: Findings from a large cross-sectional study

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Abstract

Aim: The aim of this study is to describe the prevalence and reasons for non-nursing tasks as perceived by nurses.

Background: Four types of non-nursing tasks have been identified to date: (a) auxiliary; (b) administrative, (c) expected by allied health care professionals; and (d) medical. However, no studies on a large scale have been performed with the aim of identifying the prevalence of all of these non-nursing tasks, and factors promoting or hindering their occurrence, given that they represent a clear waste of nurses' time.

Methods: A cross-sectional study in 2017, following The Strengthening the Reporting of Observational studies. All active nurses registered in an Italian provincial Nursing Board (=1331) willing to participate were involved. A questionnaire survey exploring the nature of the nursing tasks performed in daily practice and the underlying reasons was administered via paper/pencil and e-mail.

Results: A total of 733 nurses participated of which 94.5% performed at least one type of non-nursing task, mainly administrative and auxiliary. Auxiliary tasks are less likely among nurses working in a community (odds ratio [OR] 0.43, 95% CI 0.29–0.63, $p < .01$) or in a residential (OR 0.41, 95% CI 0.23–0.72, $p < .01$) setting, in

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critical (OR 0.29, 95% CI 0.16–0.54, $p < .01$) or surgical (OR 0.37, 95% CI 0.19–0.75, $p < .01$) hospital settings, and when they deal with unexpected clinical events (OR 0.58, 95% CI 0.44–0.77, $p < .01$). Greater adequacy of nursing resources decreases the occurrence of auxiliary tasks (OR 0.98, 95% CI 0.97–0.99, $p < .01$), whereas the need to compensate for a lack of resources (OR 1.44, 95% CI 1.07–1.93, $p < .01$) increases it.

Conclusions: Around one-third of shift time is devoted to non-nursing tasks; working in a hospital, in medical units, with lack of resources and with patients with predictable clinical conditions might increase the occurrence of auxiliary tasks.

Implications for nursing management: Strategies to increase the time available for nursing care should consider the type of tasks performed by nurses, their antecedents and the value added to care in terms of patient' benefits.

KEYWORDS

clinical competence, interprofessional work, non-nursing task, nursing, nursing staff

1 | BACKGROUND

The concept of non-nursing tasks, first identified in 1961 (Connor, 1961), is attracting new interest among researchers as these represent from 35% (Fitzgerald et al., 2003) to 62% of the nursing shift duration (Bruyneel et al., 2013) and carry negative consequences for both patients and nurses (e.g., Bekker et al., 2015). To our best knowledge, the “non-nursing tasks” term has been first used by Aiken et al. (2001) to indicate activities not requiring nursing education that nurses have to perform. Bruyneel et al. (2013), some years later, have described non-nursing tasks as activities enacted by nurses ‘below their skill level’ (Bruyneel et al., 2013). Cleaning rooms, delivering or retrieving food trays, escorting patients and performing auxiliary services have all been reported as examples of non-nursing tasks (Aiken et al., 2001; Bruyneel et al., 2013). However, alongside these tasks, nurses have been reported to perform also administrative tasks, such as replenishing charts and forms, answering phone calls and planning appointments (e.g., Hendrich et al., 2008).

Over the years, the meaning of the term “non-nursing tasks” has been expanded to activities belonging to allied health care professionals—that is, other professionals excluding physicians, dentists or nurses (Featherston et al., 2020). Mobilizing patients on Sunday when physiotherapists are absent (Grosso et al., 2019) has been reported as an example of these non-nursing tasks. Moreover, nurses perform also tasks failing in the scope of the medical discipline, such as making decisions about diagnostic procedures when physicians are unavailable at the bedside (Grosso et al., 2019). As a result, four main types of non-nursing tasks have been documented to date: (a) tasks with an administrative nature; (b) auxiliary tasks meant as those that could be delegated to nurses' aides, assistants and unlicensed health workers; (c) tasks belonging to the scope of practice of allied health care professionals; and (d) tasks from the medical profession.

Non-nursing tasks have become more frequent in the last decades due to spending reviews and cost-cutting measures, both of which have increased the flexibility required from nurses (Scott et al., 2013). Changes in the staff mix and reductions in the number of nurses' aide have also increased the occurrence of non-nursing tasks. For example, when units are understaffed for housekeepers and porters, their tasks are expected to be performed by nurses (Kearney et al., 2016) or by nursing students who might learn that it is ‘normal’ to perform these tasks, thus perpetuating the phenomenon (Palese, Ambrosi, et al., 2019).

Nurses are called to be flexible in performing a range of interventions outside the scope of their education and practice, substantially eroding the care offered, leaving patients' needs unmet. Missed nursing care (e.g., educating patients and monitoring vital signs) (Al-Kandari & Thomas, 2009), nurses' perceptions of wasting time (Hendrich et al., 2008), burnout (Tunc & Kutanis, 2009) and job dissatisfaction (Bekker et al., 2015) have been reported as consequences of non-nursing tasks.

Despite the recognized relevance, differences across countries on the scope of nursing education and practice and the heterogeneous perceptions among nurses with regard to what nursing care is and is not, as well as the continuous development of the nursing role (Benton et al., 2017), still prevent a full understanding of the factors promoting or hindering the occurrence of the phenomenon. Moreover, research available has focused mainly on those activities delegable to nurses' aides, assistants and unlicensed health workers (Hewko et al., 2015; Palese, Gnech, et al., 2019). However, to our best knowledge, no studies have explored antecedents of non-nursing tasks as perceived by nurses, thus preventing the full identification of interventions aimed at minimizing the occurrence of the phenomenon and its negative consequences.

Therefore, with the aim of improving the knowledge in the field, the principal purpose of this study was to describe the prevalence of

the four different types of non-nursing tasks (auxiliary, administrative, that of allied health care professionals and medical); the secondary aim was to explore the reasons of auxiliary tasks as perceived by nurses. The underlying reasons have been explored in more depth to increase the available evidence for nurse managers to consider what tasks add value to nursing care. Value-added nursing care has been defined as those activities benefitting patients' outcomes and their experience, such as performing admission and discharges; teaching and/or supporting patients, family and caregivers; reviewing clinical charts; or performing direct care at the bedside (Dearmon et al., 2013). Differently, nonvalue-added activities have been reported to consist, for example, in searching for and retrieving equipment, in escorting patients, doing paperwork and delivering supplies (Upenieks et al., 2007). Furthermore, we considered that (a) administrative tasks might reflect part of nursing care processes (e.g., programming a care pathway), (b) that of allied health care professionals might be part of the nursing scope of practice in some contexts (e.g., rehabilitation units) and (c) medical tasks might express an advancement of the profession in some fields (e.g., critical care).

2 | METHODS

2.1 | Study design and setting

A cross-sectional study design has been performed in 2017 and reported here according to The Strengthening the Reporting of Observational studies in Epidemiology studies checklist for cross-sectional studies (von Elm et al., 2008) (Table S1). The study has been performed in an Italian province of 199,802 inhabitants, extending over a mountainous territory (3610.20 km²) in the eastern Alps sector, where most Dolomite groups are present.

2.2 | Sample

Eligible nurses were (a) registered in the Nursing Board of Belluno (Ordine delle Professioni Infermieristiche, Belluno, Italy), (b) working at the time of the survey and (c) were willing to participate in the study. From the list of 1987 nurses registered, 1331 nurses were deemed eligible.

2.3 | Variables and data collection instrument

A questionnaire survey was developed by 11 members of the Nursing Board (advanced educated and with a range of role responsibilities, from clinical to managerial) during five consecutive meetings, each of them 1.5 h in length. In these meetings, a review of the literature (e.g., Biondino, 2017; Bruyneel et al., 2013; D'Angelo, 2014; Grosso et al., 2019; Gussoni, 2016; Kearney et al., 2016; Lu et al., 2008; McKenna, 1998) was performed. Also, 64 letters written by nurses to

the President of the Nursing Board requesting help/advice with regard to non-nursing tasks were analysed. The questionnaire survey was piloted in a subgroup of 30 nurses, and no changes were required: in its final version, the survey included three data collection areas:

- Non-nursing tasks end point. In this section, participants were asked to indicate if they performed activities (yes/no) included in one or more non-nursing task category (auxiliary, administrative, that of allied health care professionals and medical tasks). In order to ensure accuracy, for each non-nursing task category, brief examples were provided based on the literature (Aiken et al., 2001; Bruyneel et al., 2013; Dearmon et al., 2013; Grosso et al., 2019; Upenieks et al., 2007) and Italian laws:
 - Administrative tasks as replenishing charts and forms, answering phone calls and planning appointments, scheduling meetings not regarding patients, as a secretary;
 - Auxiliary tasks, as cleaning rooms, delivering or retrieving food trays, escorting patients, performing auxiliary services, searching for and retrieving equipment;
 - Allied health professional tasks, as mobilizing the patient during the weekend (physiotherapist), providing nutritional advice (dietician), foot care (podologist), cognitive or behavioural rehabilitation (professional educator, psychiatric technician); and
 - Medical tasks, as prescribing medications or diagnostic examinations, not allowed to be performed by nurses according to the Italian law.

For each non-nursing task category performed by nurses, they were also asked to indicate: (a) how often had they performed each during the last shift (from 1, *never*, to 4, *always*), (b) in which shifts these occurred more often (e.g., morning) and (c) the amount of time dedicated to each non-nursing staff during a shift (in percentage, up to 100%).

- Explanatory variables: three levels of data have been collected:
 1. Demographic (e.g., age and gender).
 2. Professional, such as education (e.g., diploma or bachelor and advanced education or not); experience as a nurse and as a nurse in the unit (years); workplace (hospital and community) and unit (medical, surgical) where nurses were working at the time of the survey; weekly working hours, overtime accumulated in the last 3 months (as paid or not paid according to the trust rules) and shift profile (shift, daily, morning or night worker); patients taken care during the last shift, admitted and discharged (number); adequacy of the nursing resources perceived (from 0% *never* to 100% *all the time* of the shift) and the model of nursing care delivery used in the unit, namely, (a) functional nursing: nurses perform assigned tasks to all patients in the unit in a given time; (b) team nursing: a team composed by nurses and nurses' aides, work together under the guide of a nurse team leader to provide care to a group of patients or (c) other, as mixed models (functional and team). Moreover, the degree of satisfaction in the role, as a nurse and

in the working group (from 1, *never*, to 4, *always*), as well as the intention to leave the unit (yes/no) was also investigated.

- Reasons for non-nursing tasks: nurses were asked to report the perceived reasons (Likert scale = 1, *not a reason*, to 4, *a significant reason*). The validity of the items was assessed by an exploratory factor analysis (EFA) and a confirmatory factorial analysis (CFA) by randomizing the database in two sub-datasets (245 questionnaires/each after missed items removed). According to the factor loadings ($>.350$) of the EFA, the 14 items retained were categorized into four factors explaining a total variance of 67.02% (Cronbach's $[\alpha] = .867$) (Table S2):
 - a. 'Compensating the lack of resources' (11 items, variance = 20.78%, $\alpha = .796$), reflecting the need of nurses to provide several tasks out of the scope of their practice due to the lack of human resources available at the unit level (examples of items: 'Lack of nurses' aides'; 'Excessive workloads');
 - b. 'Being pressed by the organisational culture' (3 items, variance = 17.63%, $\alpha = .811$) expressing the organisational culture pressing nurses to perform non-nursing tasks because it is expected of them to perform all activities and to be flexible (e.g., 'Organizational routine'; 'Rules established by the heads of the department/hospital');
 - c. 'Dealing with unexpected clinical events' (3 items, variance = 15.0%, $\alpha = .767$) expressing the increased workloads required to manage unpredictable clinical situations (e.g., 'Unexpected critical patients/situations'; 'High number of admissions');
 - d. 'Protecting patients' (3 items, variance = 13.61%, $\alpha = .728$), expressing the willingness of nurses to satisfy patients' needs by keeping a positive atmosphere in the team in circumstances where tasks are at risk of being left undone (e.g., 'Ensure patients' outcomes; 'Ensure that all tasks required are carried out').

At the CFA, the indexes confirmed a satisfactory fit for the model based on the following data: standardized root mean square residual = .069; root mean square error of approximation = .083; 90% confidence interval = .070–.095; comparative fit index = .893; Tucker–Lewis's index = .859; and minimum function test statistic = 1378.447; $p < .001$.

2.4 | Data collection

The questionnaire survey was sent by e-mail for those with an active e-mail and administered via paper and pencil for nurses working in hospitals and nursing homes with no available e-mail address. Nurses who received the online survey by e-mail gave their written consent and then the survey was displayed and filled in. The remaining received the paper/pencil survey questionnaire in an envelope at the unit level; then, they filled in, and the survey questionnaire was collected in a closed box allocated in each unit.

2.5 | Data analysis

Data collected were inserted in an excel database by two researchers and checked by a third researcher (see authors). Then, after having assessed the quality of the data and the missed items, descriptive and inferential statistics were performed. Categorical variables were reported as absolute and percentage frequencies, whereas continuous variables were expressed by means and 95% confidence of interval (CI). Explanatory variables were investigated in their differences, if any, between each group of nurses who performed the task under study (e.g., auxiliary tasks) and those who did not (Chi-square $[\chi^2]$ and t tests).

Then, an evaluation of the appropriateness of the sample size was conducted: the sample met recommendations for statistical significance set at 5% using the statistical method known as structural modelling processes (Hair et al., 2014). Moreover, the database was checked to remove missing values ($<1\%$) prior to employing the full information maximum likelihood approach (Arbuckle et al., 1996).

A path analysis model was estimated to detect which explanatory variables account for the variance of the auxiliary tasks. Multiple regressions have been performed considering both linear and generalized linear models. The outcome (=performing auxiliary tasks) was entered, while explanatory variables (Tarling, 2009) included were those (a) emerged in the bivariate analysis as significant (e.g., age; professional, for example, place of work, unit and models of care delivery), (b) documented in the literature (e.g., perceived reasons 'Compensating the lack of resources'). Excluded from these variables were shifts (e.g., mornings) and the shift profile of nurses (e.g., shift workers) because these were not peculiar to auxiliary tasks, and because both were affected by the work unit (e.g., hospital versus community). On the other hand, the nurse's intention to leave and satisfaction were entered as antecedents of auxiliary tasks assuming that nurses awaiting to leave the unit and unsatisfied are less engaged professionally and more likely to perform these tasks.

Sequential multiple regression analyses then explored direct and indirect effects: the standardized coefficients beta (β) and odds ratio (OR, 95% CI) were estimated according to the nature of each variable. Standard errors (SEs), test statistics (z values), and p values ($P[>|z|]$) were also calculated to perform the inferential analysis (available from authors).

The SPSS Statistical Package version 26, the R Core Team (R Core Team, 2017) and the lavaan (Rosseel, 2012) package in R were used. The statistical significance was set at $p < .05$.

2.6 | Ethical issues

The General Assembly of the Belluno Nursing Board (Ordine delle Professioni Infermieristiche, Belluno, Italy) and the Nursing Board Steering Committee approved the research project (n. 30, on 16.07.2015). International and national ethical principles have been fulfilled. Nurses were invited to participate on a voluntary basis, and no incentives were offered. They were fully informed about the study

aims, and their informed consent was collected in the first page of the survey questionnaire. Hospitals, units and community settings were anonymized.

3 | RESULTS

3.1 | Participants

A total of 743 nurses out of 1331 (55.8%) agreed to participate, and 10 survey questionnaires (0.7%) were not completed. Therefore, 733 responses were considered valid for analysis.

Most participants were female (616, 84%), and the average age was 43.6 (95% CI 42.9–44.2) years. The majority had a nursing diploma (498, 67.9%), and a few of them have achieved an advanced nursing education (111, 15.1%). Most participants were employed in a hospital (599, 81.7%), mainly in medical (229, 31.2%) and critical care units (154, 21%); fewer nurses were working in community settings (59, 8%).

Participants worked for an average of 22 years (95% CI 21.3–22.7) and 12 (95% CI 11.4–12.7) in the current unit (Table 1). Most of them were working full time (578, 78.9%) as shift workers (373, 50.9%). The majority (533, 68.7%) worked overtime in the last 3 months, accumulating on average 25.6 h (95% CI 23.7–27.6).

In the last shift, participants cared for an average of 17.3 (95% CI 15.8–18.7) patients and managed around three patients discharged and three newly admitted. The nursing care was delivered mainly according to the functional model (379, 51.7%), and at the question, ‘How often nursing resources are adequate in your working context?’ participants ranked adequacy on average 63.2% out of 100 (95% CI 61.5–64.8%).

Participants’ satisfaction in the role was on average 2.5 out of 4 (95% CI 2.5–2.6) but was higher for individuals as a nurse (2.8, 95% CI 2.8–2.9) than for the team (2.4, 95% CI 2.3–2.4). Around a quarter of nurses (148, 20.2%) expressed their intention to leave the unit in the next months (Table 1).

3.2 | Prevalence and factors affecting non-nursing tasks

Almost all nurses (693, 94.5%) performed at least one type of non-nursing task (Table 2). These were primarily performed in the mornings (378, 54.5%) and for about 32.6% of the shift time (95% CI 31.4–33.7%). Administrative (531 nurses, 72.4%) and auxiliary (489, 66.7%) tasks were mostly performed, whereas those pertaining to allied health care professionals (187, 25.5%) and medical profiles (136, 18.6%) were performed to a lesser extent. Tasks pertaining to allied health care professionals, although only a few, were performed more often (2.7 mean, 95% CI 2.6–2.8, $p < .01$) and reported as occupying a more significant amount of time (35.2% of the shift, 95% CI 32.8–27.6, $p < .05$) as compared with other forms of non-nursing tasks (Table 2).

As reported in Table 2, auxiliary tasks were performed by older nurses (44.1 vs. 42.6 years, $p < .05$) with more experience in the setting (12.8 vs. 10.4 years, $p < .01$) and with a nursing diploma (70.6% vs. 62.7%, $p < .05$). They were performed mainly by nurses working in a hospital (88.3 vs. 68.4%, $p < .01$) and as shift workers (58.3 vs. 36.1%, $p < .01$). Furthermore, nurses who carried out auxiliary tasks reported on average more overtime work in the last 3 months (24.4 vs. 17.8 h, $p < .01$), a lower adequacy of nursing resources (61.0% vs. 67.8% of the shift time, $p < .01$) and a greater likelihood to work according to the functional model (52.6 vs. 50.0%, $p < .01$) as compared with nurses who did not perform auxiliary tasks.

Nurses performing administrative tasks reported a lower perception of resource adequacy than nurses who did not perform administrative duties (61.6 vs. 67.6%, $p < .01$). Instead, nurses who performed allied health care professionals’ tasks were younger (42.4 vs. 43.9 years, $p < .05$), more often advanced educated (20.3 vs. 13.3%, $p < .05$), with less experience as a nurse (20.7 vs. 22.4 years, $p < .05$), working more often in medical settings (33.7% vs. 30.4%, $p < .05$) and reported more overtime work (28.6 vs. 20.1 h, $p < .01$) and a lower adequacy of nursing resources (56.9% vs. 65.4% of the shift, $p < .01$) as compared with those who did not perform tasks of allied health care professionals.

Medical tasks have been reported to be performed more often by male nurses (25 vs. 13.9%, $p < .01$) and by nurses working in surgical (27.2 vs. 16.2%, $p < .05$) and in critical care settings (22.1 vs. 20.8%, $p < .05$). Nurses who performed these tasks reported a higher average of overtime working hours (27.5 vs. 20.9 h, $p < .01$), of patients admitted in the last shift (5.2 vs. 2.9, $p < .01$) and a lower adequacy of nursing resources (57.5 vs. 64.5%, $p < .01$). Nurses who performed medical tasks reported the occurrence of higher unexpected clinical events as compared with those who did not perform these tasks (2.73 mean vs. 2.44, $p < .01$). No other statistical differences have emerged, as reported in Table 2.

3.3 | The path analysis

As shown by Figure 1 and Table 3, working in community (OR 0.43, 95% CI 0.29–0.63, $p < .01$) or in residential (OR 0.41, 95% CI 0.23–0.72, $p < .01$) settings, as compared with working in a hospital, reduced the likelihood of performing auxiliary tasks and of working in surgical (OR 0.37, 95% CI 0.19–0.75, $p < .01$) or in critical (OR 0.29, 95% CI 0.16–0.54, $p < .01$) settings rather than in medical settings. Greater adequacy of nursing resources slightly decreased (OR 0.98, 95% CI 0.97–0.99, $p < .01$) the likelihood of performing auxiliary tasks. The more nurses perceived the need to compensate for the lack of resources, the higher the likelihood of performing auxiliary tasks (OR 1.44, 95% CI 1.07–1.93, $p < .01$), and when nurses were called to deal with unexpected clinical events, the likelihood to perform auxiliary tasks decreased (OR 0.58, 95% CI 0.44–0.77, $p < .01$).

TABLE 1 Participants profiles

Variables	Total N (%), average (95% CI)
Participants, <i>n</i>	733 (100)
Demographic variables	
Gender, <i>n</i>	
Female	616 (84.0)
Male	117 (16.0)
Age, years	43.6 (42.9–44.2)
Professional variables	
Nursing education, <i>n</i>	
Nursing Diploma	498 (67.9)
Nursing Bachelor	196 (26.7)
Nursing Diploma + Bachelor	39 (5.3)
Advanced educated, <i>n</i>	111 (15.1)
Experience as a nurse, years	22.0 (21.3–22.7)
Experience in the setting, years	12.0 (11.4–12.7)
Working at, <i>n</i>	
Hospital	599 (81.7)
Community	59 (8.0)
Residential	51 (7.0)
Freelance	15 (2.0)
Other	9 (1.2)
Setting, <i>n</i>	
Medical	229 (31.2)
Critical care	154 (21.0)
Surgical	134 (18.3)
Maternal/paediatrics care	34 (4.6)
Home care	69 (9.4)
Nursing home	54 (7.4)
Other	59 (8.0)
Hour/week, <i>n</i>	
Full time	578 (78.9)
Part time	155 (21.1)
Shift profile, <i>n</i>	
Shift worker	373 (50.9)
Daily worker	249 (34.0)
Only mornings	107 (14.6)
Only nights	4 (0.5)
Over time work, h	25.6 (23.7–27.6)
Patients care for, last shift, <i>n</i>	17.3 (15.8–18.7)
Patients admitted, last shift, <i>n</i>	3.3 (2.7–4.0)
Patients discharged, last shift, <i>n</i>	2.8 (2.3–3.4)
Model of care delivery, <i>n</i>	
Functional	379 (51.7)
Team nursing	255 (34.8)
Other	99 (13.5)

(Continues)

TABLE 1 (Continued)

Variables	Total N (%), average (95% CI)
Nursing resources adequacy, 0–100 ^c	63.2 (61.5–64.8)
Professional outcomes	
Intention to leave, <i>n</i>	
Yes	148 (20.2)
No	553 (75.4)
Missing	32 (4.4)
Role satisfaction, 0–4 ^a	2.5 (2.5–2.6)
Satisfaction of being a nurse, 0–4 ^a	2.8 (2.8–2.9)
Working group satisfaction, 0–4 ^a	2.4 (2.3–2.4)
Non-nursing tasks	
How often, 0–4 ^b	2.5 (2.5–2.6)
When	
Morning	378 (54.5)
Afternoon	148 (21.4)
Night	67 (9.7)
Mornings and afternoons	60 (8.7)
24/24 h	40 (5.8)
Time dedicated, 0–100 ^c	32.6 (31.4–33.7)
Non-nursing tasks reasons, 0–4 ^d	
Compensating the lack of resources	2.69 (2.64–2.75)
Being pressed by the organisational culture	2.50 (2.44–2.56)
Dealing unexpected clinical events	2.50 (2.43–2.58)
Protecting patients	2.88 (2.83–2.93)

^aFrom 1, *never*, to 4, *always*.

^bFrom 1, *never*, to 4, *very often*.

^cFrom 5, *none*, to 100%, *the entire shift*.

^dFrom 1, *not a reason*, to 4, *a significant reason*.

**<.05*.

***<.01*.

With regard to indirect effects—as variables affecting those illustrated in Figure 1—being female ($\beta = -2.00$, 95% CI -3.51 to -0.50 , $p < .01$), compared with male, and having a Nursing Diploma plus a Bachelor in Nursing ($\beta = -4.42$, 95% CI -6.21 to -2.62 , $p < .01$) as compared with having only a Nursing Diploma reduced the RNs experience in the setting, which was, on the other hand, increased by age ($\beta = .30$, 95% CI 0.21 – 0.40 , $p < .01$). However, the experience in the setting did not significantly affect whether or not auxiliary tasks were performed.

Moreover, the adequacy of nursing resources reported small indirect effects by reducing reasons for non-nursing tasks ('Compensating the lack of resources' $\beta = -.006$, 95% CI -0.008 to -0.003 ; 'Being pressed by the organisational culture' $\beta = -.005$, 95% CI -0.007 to -0.003 ; 'Dealing unexpected clinical events' $\beta = -.007$, 95% CI -0.01 to -0.005 , $p < .01$; 'Protecting patients' $\beta = -.003$, 95% CI -0.005 to -0.001 , $p = .012$) and by increasing satisfaction on working group and role ($\beta = .006$, 95% CI 0.003 – 0.008 ; $\beta = 0.005$, 95% CI 0.003 – 0.008 , $p < .01$). These, in turn, had indirect effects by reducing

intention to leave (working group satisfaction OR 0.71, 95% CI 0.56–0.92 and role satisfaction OR 0.72, 95% CI 0.27–0.48, $p < .01$, respectively), which was instead increased by the satisfaction of 'Being a nurse' (OR 1.45, 95% CI 1.15–1.84, $p < .01$). However, the nurse's intention to leave and satisfaction did not significantly affect whether or not auxiliary tasks were performed.

4 | DISCUSSION

To our best knowledge, this is the first large study including an entire community of nurses belonging to the same geographical area, registered in the same Nursing Board and working in the same geographical context, thus sharing similar professional experiences and culture. Advancing the knowledge on non-nursing tasks and understanding factors involved in a large context might help policymakers to shape appropriate interventions to minimize its occurrence and increase the value of nursing time.

TABLE 2 Demographic, professional, perceived reasons and professional outcomes according to non-nursing tasks performed

Variables	I perform auxiliary tasks		I perform administrative tasks		I perform allied care professionals' task		I perform medical tasks	
	Yes N (%), average (95% CI)	No N (%), average (95% CI)	Yes N (%), average (95% CI)	No N (%), average (95% CI)	Yes N (%), average (95% CI)	No N (%), average (95% CI)	Yes N (%), average (95% CI)	No N (%), average (95% CI)
Participants, n	489 (66.7)	244 (33.3)	531 (72.4)	202 (27.6)	187 (25.5)	546 (74.5)	136 (18.6)	597 (81.4)
Demographic variables								
Gender, n								
Female	405 (82.8)	211 (86.5)	444 (83.6)	172 (85.1)	153 (81.8)	463 (84.8)	102 (75.0)**	514 (86.1)
Male	84 (17.2)	33 (13.5)	87 (16.4)	30 (14.9)	34 (18.2)	83 (15.2)	34 (25.0)**	83 (13.9)
Age, years	44.1 (43.3–44.8)*	42.6 (41.3–43.8)	43.7 (43.0–44.5)	43.1 (41.9–44.3)	42.4 (41.1–43.8)*	43.9 (43.2–44.7)	43.6 (42.9–44.2)	43.6 (42.9–44.4)
Professional variables								
Nursing education, n								
Nursing Diploma	345 (70.6)*	153 (62.7)	357 (67.2)	141 (69.8)	116 (62.0)	382 (70.0)	94 (69.1)	404 (67.7)
Nursing Bachelor	117 (23.9)*	79 (32.4)	141 (26.6)	55 (27.2)	62 (33.2)	134 (24.5)	38 (27.9)	158 (26.5)
Nursing Diploma + Bachelor	27 (5.5)*	12 (4.9)	33 (6.2)	6 (3.0)	9 (4.8)	30 (5.5)	4 (2.9)	35 (5.9)
Advanced educated, n	69 (14.1)	42 (17.2)	86 (16.1)	25 (13.3)	38 (20.3)*	73 (13.3)	24 (17.6)	87 (14.5)
Experience as a nurse, years	22.4 (21.6–23.2)	21.1 (19.7–22.4)	22.1 (21.3–23.0)	21.4 (20.0–22.8)	20.7 (19.2–22.1)*	22.4 (21.6–23.2)	21.5 (19.9–23.1)	22.09 (21.3–22.8)
Experience in the setting, years	12.8 (12.1–13.6)**	10.4 (9.4–11.3)	12.1 (11.4–12.9)	11.7 (10.6–12.9)	11.6 (10.2–12.9)	12.2 (11.4–12.9)	13.3 (11.7–14.8)	11.77 (11.0–12.4)
Working at, n								
Hospital	432 (88.3)**	167 (68.4)	435 (81.9)	164 (81.2)	152 (81.3)	447 (81.9)	114 (83.8)	485 (81.2)
Community	23 (4.7)**	36 (14.8)	43 (8.1)	16 (7.9)	12 (6.4)	47 (8.6)	8 (5.9)	51 (8.5)
Residential	22 (4.5)**	29 (11.6)	36 (6.8)	15 (7.4)	14 (7.5)	37 (6.8)	9 (6.6)	42 (7.0)
Free lance	8 (1.6)**	7 (2.9)	11 (2.1)	4 (2.0)	8 (4.3)	7 (1.3)	2 (1.5)	13 (2.2)
Other	4 (0.8)**	5 (2.0)	6 (1.1)	3 (1.5)	1 (0.5)	8 (1.5)	3 (2.2)	6 (1.0)
Setting, n								
Medical	157 (32.1)**	72 (29.5)	169 (31.8)	60 (29.7)	63 (33.7)*	166 (30.4)	42 (30.9)*	187 (31.3)
Critical care	104 (21.3)**	50 (20.5)	105 (19.8)	49 (24.3)	44 (23.5)*	110 (20.1)	30 (22.1)*	124 (20.8)
Surgical	110 (22.5)**	24 (9.8)	100 (18.8)	34 (16.8)	39 (20.9)*	95 (17.4)	37 (27.2)*	97 (16.2)
Maternal/paediatrics care	26 (5.3)**	8 (3.3)	27 (5.1)	7 (3.5)	3 (1.4)*	31 (5.7)	5 (3.7)*	29 (4.9)
Home care	28 (5.7)**	41 (16.8)	50 (9.4)	19 (9.4)	14 (7.5)*	5 (10.1)	11 (8.1)*	58 (9.7)
Nursing home	26 (5.3)**	28 (11.5)	37 (7.0)	17 (8.4)	16 (8.6)*	38 (10.0)	8 (5.9)*	46 (7.7)
Other	38 (7.8)**	21 (8.6)	43 (8.1)	16 (7.9)	8 (4.3)*	51 (9.3)	3 (2.2)*	56 (9.4)

(Continues)

TABLE 2 (Continued)

Variables	I perform auxiliary tasks		I perform administrative tasks		I perform allied care professionals' task		I perform medical tasks	
	Yes N (%), average (95% CI)	No N (%), average (95% CI)	Yes N (%), average (95% CI)	No N (%), average (95% CI)	Yes N (%), average (95% CI)	No N (%), average (95% CI)	Yes N (%), average (95% CI)	No N (%), average (95% CI)
Hour/week, n								
Full time	390 (79.8)	188 (77.0)	413 (77.8)	165 (81.7)	146 (78.1)	432 (79.1)	110 (80.9)	468 (78.4)
Part time	99 (20.2)	56 (23.0)	118 (22.2)	37 (18.3)	41 (21.9)	114 (20.6)	26 (19.1)	129 (21.6)
Shift profile, n								
Shift worker	285 (58.3)**	88 (36.1)	264 (49.7)	109 (54.0)	103 (55.1)	270 (49.5)	82 (60.3)	291 (48.7)
Daily worker	135 (27.6)**	114 (46.7)	187 (35.2)	62 (30.7)	59 (31.6)	190 (34.8)	39 (28.7)	210 (35.2)
Only mornings	66 (13.5)**	41 (16.8)	77 (14.1)	30 (14.9)	23 (12.3)	84 (15.4)	15 (11.0)	92 (15.4)
Only nights	3 (0.3)**	1 (0.4)	3 (0.6)	1 (0.5)	2 (1.1)	2 (0.4)	0	4 (0.7)
Over time work, h	24.4 (22.0–26.7)**	17.8 (15.2–20.4)	22.1 (20.3–24.0)	20.3 (16.9–23.7)	28.6 (24.3–33.0)**	20.1 (18.2–22.0)	27.5 (22.6–32.4)**	20.9 (12.0–22.8)
Patients care for, last shift, n	16.62 (14.8–18.3)	18.74 (16.0–21.4)	17.6 (15.8–19.3)	16.4 (13.6–19.3)	19.14 (16.1–22.1)	16.6 (14.9–18.3)	17.2 (14.5–20.0)	17.32 (15.6–19.0)
Patients admitted, last shift, n	3.5 (2.7–4.4)	2.9 (1.9–4.0)	3.5 (2.7–4.3)	2.9 (1.9–4.0)	2.4 (1.6–3.2)	3.7 (2.9–4.6)	5.2 (3.2–7.3)**	2.9 (2.2–3.5)
Patients discharged, last shift, n	3.0 (2.3–3.7)	2.6 (1.6–3.5)	2.9 (2.2–3.6)	2.8 (1.8–3.9)	3.1 (2.0–4.2)	2.8 (2.1–3.5)	4.3 (2.3–6.3)	2.5 (2.0–3.0)
Model of care delivery, n								
Functional	257 (52.6)**	122 (50.0)	273 (51.4)	106 (52.5)	108 (57.8)	271 (49.6)	72 (52.9)	307 (51.4)
Team nursing	182 (37.2)**	73 (30.0)	186 (35.0)	69 (34.2)	60 (32.1)	195 (35.7)	53 (39.0)	202 (33.9)
Other	50 (10.2)**	49 (20.0)	72 (13.6)	27 (13.3)	19 (10.1)	80 (14.6)	11 (8.1)	88 (14.7)
Nursing resources adequacy, 0–100 ^c	61.0 (58.9–63.0)**	67.8 (64.8–70.8)	61.6 (59.6–63.6)**	67.6 (64.4–70.9)	56.9 (53.6–60.2)**	65.4 (63.5–67.3)	57.5 (53.2–61.8)**	64.5 (62.6–66.3)
Professional outcomes								
Intention to leave, n								
Yes	105 (21.5)	43 (17.6)	110 (20.7)	38 (18.8)	45 (23.8)	103 (18.8)	31 (22.7)	117 (19.6)
No	366 (74.8)	187 (76.6)	399 (75.1)	144 (71.2)	136 (72.7)	417 (76.4)	99 (72.7)	474 (79.4)
Missing	18 (3.7)	14 (5.8)	22 (4.2)	20 (9.9)	8 (4.2)	26 (4.8)	6 (4.4)	6 (1.0)
Role satisfaction, 0–4 ^a	2.5 (2.4–2.6)	2.6 (2.5–2.7)	2.5 (2.5–2.6)	2.6 (2.5–2.7)	2.5 (2.3–2.6)	2.6 (2.5–2.6)	2.54 (2.3–2.6)	2.60 (2.5–2.6)
Satisfaction of being a nurse, 0–4 ^a	2.8 (2.7–2.9)	2.9 (2.7–3.0)	2.8 (2.7–2.9)	2.8 (2.7–3.0)	2.9 (2.7–3.0)	2.8 (2.7–2.9)	2.8 (2.6–2.9)	2.88 (2.8–2.9)
Working group satisfaction, 0–4 ^a	2.4 (2.3–2.4)	2.4 (2.3–2.5)	2.4 (2.3–2.5)	2.4 (2.2–2.5)	2.3 (2.2–2.5)	2.4 (2.3–2.5)	2.3 (2.2–2.5)	2.43 (2.3–2.5)

(Continues)

TABLE 2 (Continued)

Variables	I perform auxiliary tasks		I perform administrative tasks		I perform allied care professionals' task		I perform medical tasks	
	Yes N (%), average (95% CI)	No N (%), average (95% CI)	Yes N (%), average (95% CI)	No N (%), average (95% CI)	Yes N (%), average (95% CI)	No N (%), average (95% CI)	Yes N (%), average (95% CI)	No N (%), average (95% CI)
Non-nursing tasks								
How often, 0–4 ^b	2.6 (2.5–2.6)	-	2.6 (2.5–2.6)	-	2.7 (2.6–2.8)*	-	2.6 (2.5–2.7)	-
When								
Morning	252 (51.5)	-	291 (54.8)	-	97 (51.9)	-	64 (47.1)	-
Afternoon	106 (21.7)	-	107 (20.2)	-	43 (23.0)	-	26 (19.1)	-
Night	55 (11.2)	-	52 (9.8)	-	12 (6.4)	-	21 (15.4)	-
Mornings and afternoons	43 (8.8)	-	51 (9.6)	-	16 (8.6)	-	11 (8.1)	-
24/24 h	33 (6.7)	-	30 (5.6)	-	19 (10.2)	-	14 (10.3)	-
Time dedicated, 0–100 ^c	33.05 (31.6–34.4)	-	33.0 (31.6–34.3)	-	35.2 (32.8–37.6)*	-	33.5 (30.7–36.3)	-
Non-nursing tasks reasons, 0–4 ^d								
Compensating the lack of resources	2.71 (2.64–2.78)	2.66 (2.56–2.76)	2.69 (2.62–2.76)	2.70 (2.59–2.81)	2.78 (2.67–2.89)	2.66 (2.59–2.73)	2.69 (2.55–2.83)	2.70 (2.63–2.76)
Being pressed by the organisational culture	2.35 (2.28–2.42)	2.40 (2.30–2.50)	2.37 (2.30–2.44)	2.35 (2.24–2.46)	2.35 (2.24–2.46)	2.73 (2.30–2.44)	2.39 (2.24–2.53)	2.36 (2.30–2.42)
Dealing unexpected clinical events	2.49 (2.40–2.58)	2.53 (2.41–2.64)	2.53 (2.45–2.61)	2.41 (2.26–2.56)	2.56 (2.44–2.68)	2.48 (2.39–2.57)	2.73 (2.59–2.88)**	2.44 (2.36–2.52)
Protecting patients	2.87 (2.81–2.94)	2.94 (2.85–3.03)	2.90 (2.85–2.96)	2.85 (2.75–2.95)	2.89 (2.80–2.97)	2.89 (2.83–2.95)	2.95 (2.84–2.94)	2.88 (2.82–2.93)

^aFrom 1, never, to 4, always.

^bFrom 1, never, to 4, very often.

^cFrom 5, none, to 100%, the entire shift.

^dFrom 1, not a reason, to 4, a significant reason.

* < .05.

** < .01.

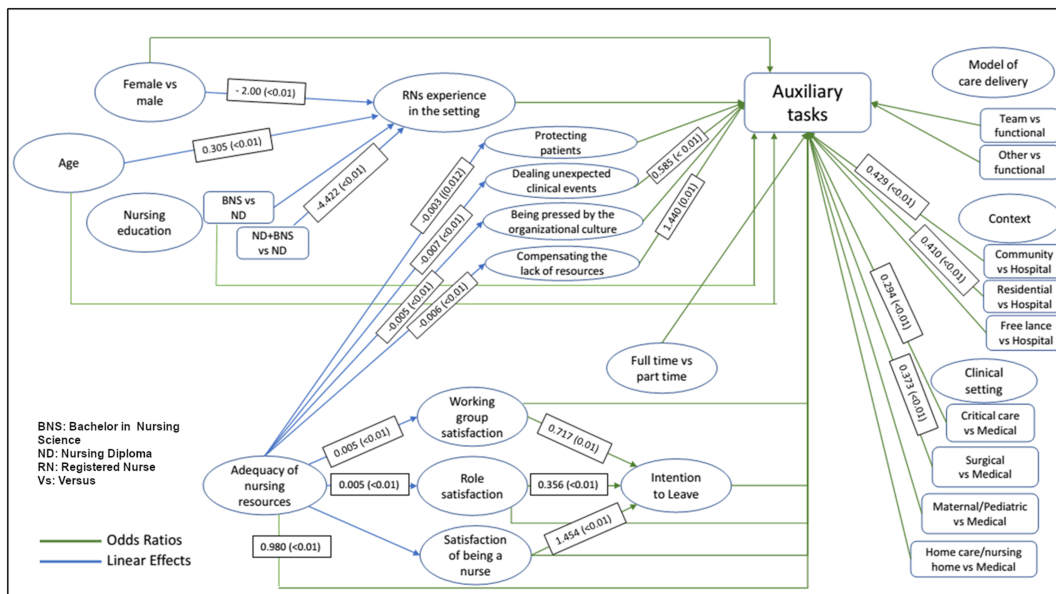


FIGURE 1 Path analysis

4.1 | Participants

We involved all active nurses, and the majority of them participated: the response rate was in line with that documented in other surveys performed among nurses (e.g., VanGeest & Johnson, 2011). Participants were mainly female, in a mature age (mean 43.6 years old) and with a long experience in hospital care, also in line with the profile of nurses documented at the national level (Grosso et al., 2019). Although the data should be interpreted according to contexts, as hospital or community settings, on average, nurses reported to have cared for in the last shift around 17 patients accompanied by three newly admitted and three discharged patients: these data confirm the unfavourable nurse-to-patient ratio (FNOPI, 2018) already reported in the Italian context.

4.2 | Prevalence and variables affecting non-nursing tasks

Nurses reported dedicating one-third of their shift time to non-nursing tasks: only few (5.5%) documented to spend their shift entirely to perform interventions falling within the scope of their discipline. Consequently, the amount of care planned for around 17 patients for each nurse, which should be considered really critical, is further eroded due to the time spent in tasks that other professionals should perform.

Participants perform, in order, mainly administrative (72.4%) and auxiliary (66.7%) tasks as documented across 12 countries where >90% of nurses have been reported to perform these kinds of tasks (Bruyneel et al., 2013). Differently, the occurrence of administrative tasks has been documented to a lesser extent in previous studies, namely, from 7% (Westbrook et al., 2011) to 35% (Hendrich

et al., 2008) of the working time. This difference might be interpreted under different lines: (a) as a consequence of a different concept of administrative tasks—whether expressed as the substitution of the secretary role or only those activities connected with patients’ care (Hendrich et al., 2008); (b) as an expression of the increased bureaucratization of the care processes requiring additional personnel; and/or (c) as an expression of the lack of resources supporting the units (e.g., secretaries) due to the rationed measures applied to health care services.

On the other hand, only a quarter of nurses performed tasks belonging to allied health care professionals, likely because they are less traceable given that they might express forms of interprofessional teamwork (Grosso et al., 2019). Moreover, less than 20% of nurses reported performing medical tasks, in line with the evidence available (from 24% to 29.2%, in six countries; Maier et al., 2018). Therefore, nurses seem to be less involved in tasks of allied health care and medical professions, while they are more often called to perform tasks that can be delegable to nurses’ aides, assistants, unlicensed health workers and administrative staff.

Only some factors have emerged as significantly different across groups, and in some cases (e.g., see age), the difference seems to have limited practical meaning. However, some individual (higher age) and professional (being vocationally educated with a diploma, higher experience in the setting) variables seem to expose nurses to the risk of performing auxiliary tasks. In contrast, male nurses seem more likely to perform medical tasks. Moreover, some variables at the organisational levels, such as the context (hospital, nursing home) and the models of care delivery (functional model), seem to engage nurses in performing auxiliary tasks, while the increased number of patients admitted and their critical condition seems to trigger medical tasks. Furthermore, when nurses perceive more nursing resources, they seem to be more engaged in auxiliary and administrative tasks, but

TABLE 3 Path analysis coefficients

Non-nursing auxiliary tasks	β /OR [CI 95%]	p value
Teams vs. functional model	1.267 [0.648–2.477]	.490
Other model vs. functional	1.422 [0.706–2.865]	.324
Working group satisfaction	0.977 [0.775–1.232]	.844
Role satisfaction	1.071 [0.815–1.409]	.621
Satisfaction of being a nurse	1.136 [0.906–1.423]	.269
Intention to leave	1.122 [0.703–1.792]	.629
Adequacy of nurses' resources	0.980 [0.972–0.988]	<.01
Compensating the lack of resources	1.440 [1.072–1.933]	.015
Being pressed by the organisational culture	0.917 [0.712–1.18]	.500
Dealing with unexpected clinical events	0.585 [0.445–0.768]	<.01
Protecting patients	0.966 [0.718–1.298]	.817
Working hours/week	0.868 [0.563–1.339]	.522
Community vs. hospital	0.429 [0.290–0.634]	<.01
Residential care vs. hospital	0.410 [0.232–0.722]	.002
Freelance vs. hospital	2.218 [0.177–27.803]	.537
Critical care vs. medical	0.294 [0.16–0.538]	<.01
Surgical vs. medical	0.373 [0.187–0.746]	.005
Maternal/paediatric vs. medical	0.657 [0.195–2.215]	.498
Home care/nursing home vs. medical	0.357 [0.088–1.45]	.150
Female vs. male	0.895 [0.550–1.455]	.654
Age	0.996 [0.966–1.027]	.804
Bachelor of Nursing Diploma vs. Nursing Diploma	1.134 [0.501–2.567]	.763
Nursing Diploma + Bachelor vs. Nursing Diploma	0.627 [0.355–1.109]	.109
Experience as RN in the unit	1.022 [0.997–1.044]	.085
_cons	17.492 [1.703–179.629]	.016
Experience as RN in the unit		
Female vs. male	–2.008 [–3.51 to –0.506]	.009
Age	0.305 [0.210–.400]	<.01
Bachelor of Nursing Diploma vs. Nursing Diploma	–2.161 [–4.837 to 0.516]	.114
Nursing Diploma + Bachelor vs. Nursing Diploma	–4.422 [–6.219 to –2.625]	<.01
_cons	1.853 [–2.861 to 6.568]	.441
Compensating the lack of resources		
Adequacy of nurses' resources	–0.006 [–0.008 to –0.003]	<.01
_cons	3.016 [2.868–3.165]	<.01
Being pressed by the organisational culture		
Adequacy of nurses' resources	–0.005 [–0.007 to –0.003]	<.01
_cons	2.73 [2.575–2.885]	<.01
Dealing with unexpected clinical events		
Adequacy of nurses' resources	–0.007 [–0.01 to –0.005]	<.01
_cons	2.835 [2.675–2.995]	<.01

(Continues)

TABLE 3 (Continued)

Non-nursing auxiliary tasks	β /OR [CI 95%]	p value
Protecting patients		
Adequacy of nurses' resources	-0.003 [-0.005 to -0.001]	.012
_cons	3.012 [2.875-3.15]	<.01
Working group satisfaction		
Adequacy of nurses' resources	0.006 [0.003-0.008]	<.01
_cons	2.09 [1.903-2.277]	<.01
Role satisfaction		
Adequacy of nurses' resources	0.005 [0.003-0.008]	<.01
_cons	2.25 [2.076-2.423]	<.01
Satisfaction of being a nurse		
Adequacy of nurses' resources	0.001 [-0.002 to 0.004]	.517
_cons	2.812 [2.625-3.000]	<.01
Intention to leave		
Working group satisfaction	0.717 [0.557-0.924]	<.01
Role satisfaction	0.356 [0.266-0.477]	<.01
Satisfaction of being a nurse	1.454 [1.148-1.841]	.002
_cons	2.441 [0.165-1.619]	.016

Abbreviations: β , beta coefficient; _cons, constant; CI, confidence interval; OR, odds ratio; RN, registered nurse; vs., versus.

when their perception is worse, they seem to perform more medical tasks than other health care professionals. Some of these factors express attitudes shaped during education and clinical experience (e.g., being flexible) and are modifiable by appropriate organisational interventions (Palese, Ambrosi, et al., 2019). However, doing non-nursing tasks seems to be not affected by the degree of satisfaction and by the intention to leave, which is similar across groups, suggesting that doing a non-nursing task is normalized in a sort of 'pragmatic acceptance' (Gibbon & Crane, 2018).

4.3 | The path analysis

In the path analysis, where several indirect and direct explanatory variables have been introduced, a few factors have emerged as influencing the occurrence of auxiliary task by reporting minor effects, suggesting that the phenomenon is multifactorial and at merit for further studies. First, nurses working in hospital and in medical settings and those who perceive the need to compensate for the lack of resources at the unit level are more exposed to the risk of performing auxiliary tasks, as documented previously (e.g., Bruyneel et al., 2013) suggesting that units should also be equipped with auxiliaries. On the other hand, those who frequently deal with unexpected clinical events are less likely to perform auxiliary tasks because they are concentrated on the patient's clinical condition as a priority. Therefore, the setting, with its clinical mission, resources and culture, seems to have a relevant role on auxiliary tasks occurrence, highlighting the need of having a clear and agreed job description capable of reflecting the peculiarity of the context and preventing activities wasting nurses' time.

Second, the perception of adequacy in nursing resources emerged as a factor affecting several variables, albeit with a small effect. Perceiving adequate nursing staffing prevents some non-nursing tasks and increases the working group and role satisfaction. These prevented the intention to leave that was otherwise increased by a higher satisfaction of being a nurse. Despite these effects, intention to leave did not affect the likelihood of performing auxiliary tasks. Moreover, being pressured by the organisational culture and protecting patients (e.g., Bruyneel et al., 2013; Grosso et al., 2019) did not report any association with auxiliary task, and this suggests that doing these tasks is considered 'normal' by nurses (Gibbon & Crane, 2018), as a part of their routine.

4.4 | Limitations

This study has several limitations. First, we adopted a cross-sectional design where non-nursing tasks and their explanatory variables were collected simultaneously, requiring caution in considering factors that emerged as causal. Second, nurses were provided with some examples of non-nursing tasks to uniform the interpretation of each category; however, their personal conceptions regarding the non-nursing tasks and what nursing care is might have introduced some biases. For example, performing venepuncture has been defined as non-nursing activities in some studies (e.g., Bruyneel et al., 2013), whereas, in our context, these are considered nursing tasks. Third, participants were required to indicate none, one or more non-nursing task categories, according to what they did in their last shift, and bias might have influenced the precision in the time spent by them in each task. However, the aim was to explore the issue and not to document

precisely the amount of time spent in each non-nursing task, a finding that might be explored with other instruments (e.g., time and motion analysis) (Desjardins et al., 2008).

Fourth, we collected data with two main procedures, via paper/pencil and e-mail address, in order to maximize the participation rate; however, this decision might have introduced both selection and information biases. Additionally, we included nurses working in different settings (hospital and community) where some issues might have been addressed differently (e.g., paying or not the nurses' overtime) without performing any stratification of the data (e.g., the number of patients cared for). However, the exploratory nature of the study was to describe a global picture; future studies might deepen the profile of nurses in each setting in order to develop contextualized evidence.

5 | CONCLUSION

In a large mountain province, only a few registered nurses perform only nursing tasks. The large majority perform administrative and auxiliary tasks, whereas medical tasks and that of allied health care professionals are performed with less frequency. Around one-third of the shift time is spent doing other tasks rather than nursing care, suggesting that in conditions with a poor nurse-to-patient ratio as documented in this study, nursing care might be further eroded by the time devoted to non-nursing tasks. The number of auxiliary tasks, which express a clear waste of nursing time, is high in hospital settings, where units are poorly supported with nursing and auxiliary staff and where patients with predictable clinical issues are cared for.

6 | IMPLICATIONS FOR NURSING MANAGEMENT

Strategies to increase the time available for nursing care should consider the type of tasks performed by nurses and their antecedents. The focus of nurse managers should be on tasks implying a clear waste of nursing time and not adding value to care rather than those that might improve the quality of the overall care and benefit the patient. In fact, in a wider perspective, even though each activity might be perceived as a waste of time by nurse managers and nurses, it does not mean that this really is a waste of time if it is still a value-added care. In order to identify interventions, nurse managers might assess activities by considering if these (a) increase the time wasted, thus eroding time available for nursing care; (b) require less education and/or competences, thus wasting the nursing education investment; and (c) are nonvalue-added activity, thus are not capable to produce benefit on patients. Beyond the recognized consequences on patients (missed nursing care) and nurses (e.g., dissatisfaction), these activities are not cost-effective and require to be reallocated to increase care effectiveness, ward productivity and efficiency.

However, identifying what objectively is a task wasting time, wasting the education investments or not benefiting the patients

might not be a straightforward process. Thus, several steps should be systematically put into practice.

First, tasks performed daily by nurses and embodied in their routine should be appropriately traced, for example, with a day-index collection of data via observation, allowing their detection also in the time devoted to them. In order to promote a shared meaning and action in each specific context, nurses should be involved in interpreting this data through audits and/or focus groups. Data collection and discussion at the unit level might also allow the full consideration of the clinical complexity of patients in that context and the availability of other health care professional or auxiliary/nurse's aide resources.

Second, it might be important to assess the quality and the appropriateness of the delegation skills possessed by nurses and consequently to coach them in improving such skills. The Italian nursing profession is ending its transition from a vocational to a university education; those nurses educated in the nursing diploma might have been trained to perform all activities required by patients and units. Therefore, alongside the availability of an appropriate support staff, they might require to develop delegation skills to protect their time in favour of those activities requiring nursing competences and expertise.

On the other hand, a discussion on the concept of non-nursing tasks is at a merit of consideration in the context of the transitions lived by the nursing profession. With increased education, some fundamental care needs may be considered as non-nursing care, thus out of the scope of the nursing discipline and at need to be performed by another professional as nurses' aides, assistants or lay health workers. Collecting and discussing examples of non-nursing activities to assess the real nature of tasks performed on a daily basis by nurses, as for example expression of the care offered towards fundamental needs, might be useful.

Searching for different points of view to understand the phenomenon might help nurse managers to design interventions to increase the value of nursing time. Furthermore, engaging nurses in finding solutions might also help them to prevent stress, frustration, feelings and dissatisfaction and to promote proactive approaches. For example, administrative tasks can be managed by implementing electronic health records or by revising the documentation process in an innovative way.

However, continuing to study the reasons for non-nursing tasks in the work environment, according to the limited contribution of factors discovered to date, might increase awareness and help in designing interventions to prevent task confusion and shifting, nonvalue-added care and, ultimately, issues in cost-effective models of care.

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CONFLICT OF INTEREST

No conflict of interest has been declared by the authors.

ETHICAL STATEMENT

According to the nature of the study, which was based upon a survey, no ethical approval was required.

AUTHOR CONTRIBUTIONS

SG, ST, IB, CJ, DDM, LD, GF, ML, NO, LPDM and AP made substantial contributions to conception and design or acquisition of data. SG, AP, JL and LG made substantial contributions to analysis and interpretation of data and involved in drafting the manuscript or revising it critically for important intellectual content. SG, JL, ST, IB, CJ, DDM, LD, GF, ML, NO, LG, LPDM and AP gave final approval of the version to be published. Each author should have participated sufficiently in the work to take public responsibility for appropriate portions of the content. SG, JL, ST, IB, CJ, DDM, LD, GF, ML, NO, LG, LPDM and AP agreed to be accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved.

DATA AVAILABILITY STATEMENT

Data available on request from the authors

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SUPPORTING INFORMATION

Additional supporting information may be found in the online version of the article at the publisher's website.

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REVIEW ARTICLE

Fall prevention education to reduce fall risk among community-dwelling older persons: A systematic review

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Abstract

Objectives: This review aims to identify types of the existing fall prevention education (FPE) and their effectiveness in promoting fall risk awareness, knowledge and preventive fall behaviour change among community-dwelling older people.

Background: FPE is a cost-effective and helpful tool for reducing fall occurrences.

Evaluation: This is a systematic review study using electronic searches via EBSCOHost[®] platform, ScienceDirect, Scopus and Google Scholar in March 2021. The review protocol was registered with PROSPERO (CRD42021232102). The Preferred Reporting Items for Systematic reviews and Meta-Analyses (PRISMA) statement flow chart guided the search strategy. Articles published from January 2010 to March 2021 were included for quality appraisal using the 'Transparent Reporting of Evaluations with Non-randomised Designs' (TREND) and the 'Consolidated Standards of Reporting Trials' (CONSORT) statement for randomised controlled trial studies.

Key issues: Six FPE studies selected emphasised on personal health status, exercise and environmental risk factors. These studies reported an increase in fall risk awareness or knowledge and a positive change in fall preventive behaviours. Two studies included nurses as educators in FPE.

Conclusion: FPE evidently improved awareness or knowledge and preventive fall behaviour change among older adults. Nurses are in great potential in planning and providing FPE for older adults in community settings.

Implications for Nursing Management: Expand nurses' roles in fall prevention programmes in community settings by using high-quality and evidence-based educational tools. Highlight the nurse's role and collaborative management in FPE.

KEYWORDS

community-dwelling older adult, fall, fall prevention education, fall risk, older adult

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1 | INTRODUCTION

Fall prevention education (FPE) is one of the strategies that is an inexpensive, less activity involvement and helpful tool for reducing fall occurrences (Kamei et al., 2015; Ott, 2018). In addition, it is essential that initiation of awareness begins with education. It will evidently improve the awareness and knowledge of older adults in recognising their fall threats so that early preventions can be prioritised (Ott, 2018). Furthermore, evaluating older individuals' knowledge deficits is the initial step to implement individualised and appropriate instruction (Ott, 2018). Providing FPE also enhances positive health care outcomes in older individuals (Chaudhry, 2020; Chidume, 2021). This is because they are becoming more independently sustained within their perceived quality of life to perform daily activities and live in safer environment (Minnier et al., 2019).

2 | BACKGROUND

Despite that, many older individuals who live in rural or urban neighbourhoods are still unaware of their odds of falling or denying that they are at risk of falling (Loganathan et al., 2015; Mihaljcic et al., 2015). This lack of awareness and denial created more hindrances for unreported falls, poor help-seeking after fall injuries and refusal to accept that they are the higher group at risk of fall (Greenberg, 2020; Mihaljcic et al., 2015). Due to these concerns, there has been an inadequate translation of this focus into the community settings on older adults' fall risk awareness, knowledge and fall preventive behaviour change after FPE (Heng et al., 2020; Hill et al., 2015; King et al., 2018). Most FPE studies and reviews pay attention to older patients in hospital settings (Hill et al., 2015; Williams & Hadler, 2015) or nursing homes (Uymaz & Nahcivan, 2016).

Promoting fall risk awareness and knowledge will enhance their attention about their potential for falls, encourage them to analyse their current situation at risk of falls and possibly apply or engage in behaviour or lifestyle changes (Flint et al., 2020; Kiegaldie & Farlie, 2019). Thus, fall risk awareness and knowledge indirectly influence older individuals' decision to participate in preventive behaviour change. Contrarily, most FPE studies demonstrated fall risk scores or falls or fall injurious as the primary outcomes instead of fall risk awareness or knowledge and fall preventive behaviour (Chidume, 2021; Harrison, 2017; Hill et al., 2017; Kuhirunyaratn et al., 2019).

Although abundant studies were conducted in education interventions, little is known that some studies had poorly expressed their evidence base for educational design (Kiegaldie & Farlie, 2019). Hence, researchers have to be conversant in determining a high-quality education design to have a robust, well-organised and proper measure of the expected outcomes in their studies (Kiegaldie & Farlie, 2019).

3 | METHODS

3.1 | Aims

This review aims to (i) identify types of the existing FPE and their effectiveness in promoting fall risk awareness, knowledge and preventive fall behaviour change among community-dwelling older people; (ii) identify theoretical frameworks underpinned in educational designs; (iii) review the quality of educational programmes; (iv) identify nurses' role or involvement in providing FPE in the community settings.

3.2 | Design

This systematic review was referred from the guidelines of the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) (Moher, Liberati, et al., 2010). A review protocol was created and the PROSPERO has approved and registered on 3 April 2021 with the registration number CRD42021232102.

3.3 | Inclusion and exclusion criteria

A PICO framework was created (Moher, Liberati, et al., 2010), which considered population (P), community-dwelling older adults; interest area/Intervention (I), fall prevention awareness or education; comparator interventions (C), usual care; outcomes (O), fall prevention knowledge or fall risk awareness and fall prevention behaviour change.

The target population was (a) the older adult of 60 years and older, (b) those older people who were living independently in the communities, (c) research studies on fall risks awareness or FPEs and (d) studies that adopt an experimental design and (e) the outcomes measure was fall risk awareness or knowledge and fall prevention behaviour change. The study excluded (a) older people living in a long-term care facility or assisted living facility and who have been hospitalised, (b) older adults suffering from medical illnesses such as Parkinson's disease, severe dementia, post-stroke and mental illnesses such as schizophrenia and psychotic disorders and (d) intervention studies that do not report the outcome of fall risk awareness, knowledge and fall preventive behaviour. (e) Any types of report, abstracts and conference posters are excluded and studies that have been available in non-English were omitted.

3.4 | Search strategy

The study's literature review integrated articles that were published from 2010 to March 2021 via the EBSCOHost® platform, ScienceDirect, Google Scholar and Scopus databases during the search dates of 3–18 March 2021.

3.5 | Search selection

Researchers used the PRISMA flow diagram to guide the selection process (Moher, Liberati, et al., 2010) as shown in Figure 1. Ultimately, six studies were eventually selected for the review (Figure 1). The corresponding researcher had contacted the authors of two articles for the full text. However, one of the authors was on sabbatical leave (Minnier et al., 2019), and another author was unavailable (Azzarello & Hall, 2016). One article that recruited an older adult of 56 years old has been included in this review because their actual inclusion for older adults age was 60 years and above (Howard et al., 2016).

3.6 | Quality appraisal

TREND statement (Des Jarlais, Lyles, Crepaz, & the TREND Group, 2004) and CONSORT statement (Moher, Hopewell, et al., 2010) used for quality appraisal. As a result, it proves that four studies consist good quality assessments (Howard et al., 2016; Khong et al., 2017; Ott, 2018; Kamei et al., 2015) and another two studies with low-quality assessments respectively (Chen, 2013; Schepens et al., 2011).

3.7 | The risk of bias assessment

Table 1 shows risk of bias assessment for randomised studies using Cochrane Collaboration's tool (Higgins et al., 2011). Table 2 assesses

the non-randomised studies using a tool from Kim et al. (2013). Overall, two randomised and non-randomised studies have low-risk biases, and another two non-randomised studies are assessed to have a high-risk bias respectively.

3.8 | Data abstraction and data analysis

Data were extracted from the selected eligible studies into a table. Table 3 summarises the tabulated information. The team members then reviewed the tabulated data to ensure accuracy. Table 4 assesses the quality of educational programmes using a metric tool by Heng et al. (2020). The scoring was categorised for 'yes' response as '1' and '0' or 'not stated' response as '0'. The range of 0–6 points denotes low quality, whereas 7–12 points indicate moderate quality and 13–17 represent high quality. The corresponding author and the team members discussed to achieve a consensus on the assessment.

4 | RESULTS

4.1 | FPE, fall risk awareness and knowledge outcomes

All studies reported an evidence in improving fall risk awareness and knowledge after FPE (Tables 3 and 5). Table 3 shows the mean score of fall prevention knowledge with a p value less than .05 after post-test interventions (Chen, 2013; Kamei et al., 2015; Ott, 2018;

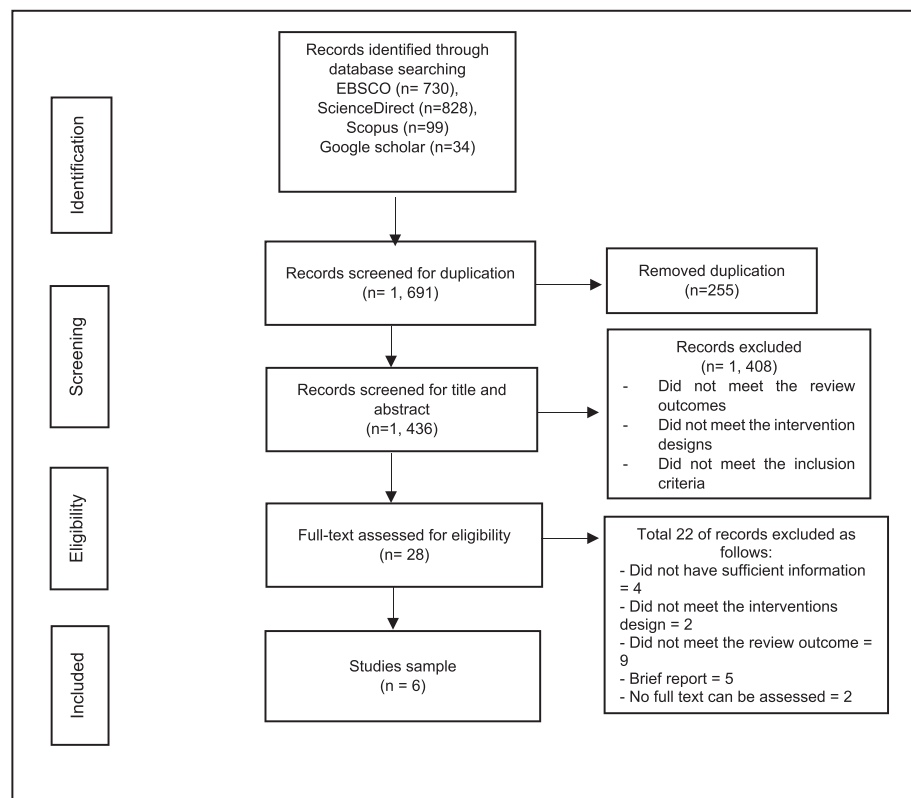


FIGURE 1 The Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) diagram of the article search

TABLE 1 The risk of Bias assessment in selected randomised studies (from the assessment tool of Higgins et al., 2011)

No.	Bias	Schepens et al. (2011)	Support evidence	Kamei et al. (2015)	Support evidence
1	Random sequence generation (selection bias)	Unclear risk	'Participants were randomised to one of two multimedia intervention groups or a control group using a block randomisation technique.' However, their fallers and non-fallers were not equally distributed among the three groups, and no further details of the randomisation procedure were explained.	Low risk	Flow diagram for randomisation was given, with description details in participants' age, gender, physical status, fall risks, a person who performed housing repair in the past, and a number of fallers over the previous year were similar in both the groups.
2	Allocation concealment (selection bias)	High risk	No information was provided.	High risk	No information was provided.
3	Blinding of participants and researchers (performance bias)	Low risk	'Participants, but not the primary investigator, were unaware of group allocation and differences in intervention protocols.'	Unclear risk	'Research assistants allocated participants randomly into either the HHMP group or the control group and without the presence of the researchers.' There was no further explanation about the procedure.
4	Blinding of outcome assessment (detection bias)	Low risk	'Participants were unaware of differences in intervention protocols.'	High risk	No information was provided.
5	Incomplete outcome data (attrition bias)	Low risk	All losses to follow up and the number of participants who remained for analyses was demonstrated in the flow diagram. Reporting of 1–2 participants either dropped for the group or lost to follow-up. The number of about 17–18 participants in one group remained. The attrition rate was low and not expected to affect the result.	Low risk	Kaplan–Meier survival analysis with the log-rank (Mantel–Cox) test undertaken on an intention-to-treat basis. The original number of participants for the intervention/control group analysed for intention-to-treat. A total of 63 and 67 participants
6	Selective reporting (reporting bias)	Low risk	Most outcomes reported	Low risk	All outcomes reported, inclusive of participants intended to treat.
7	Other bias	Unclear risk	A small number of participants in each group may give rise to challenge in the conclusion of the finding.	Low risk	Retained the original number of participants for intention-to-treat, analysed, and report as its final findings.
	Overall	Low risk		Low risk	

TABLE 2 The risk of Bias assessment in selected non-randomised studies (using the assessment tool of Kim et al., 2013)

No.	Bias	Chen (2013)	Howard et al. (2016)	Ott (2018)	Khong et al. (2017)
1	Selection of participants	Low risk	High risk	High risk	Low risk
2	Confounding variables	Unclear risk	Unclear risk	Low risk	Low risk
3	Measurement of exposure	Unclear risk	High risk	Low risk	Low risk
4	Blinding of outcome assessments	High risk	High risk	High risk	Low risk
5	Incomplete outcome data	Low risk	Low risk	Low risk	Low risk
6	Selective outcome reporting	High risk	Low risk	Low risk	Low risk
	Overall	High risk	High risk	Low risk	Low risk

TABLE 3 Characteristics of included studies

Author	Objective	Participant characteristics	Participant gender	Intervention/control group	Major findings	Quality assessment
Chen (2013), Taiwan	To examine the outcome of a health education programme intervention of elderly fall prevention at home	Aged between 65–80 years old; treatment group: $n = 80$; control group: $n = 79$	Female: 108 (67.9%); male 51 (32.1%)	(i) Knowledge (ii) Fall risk behaviour or fall rate	A different mean was reported in the fall education group, and the intervention group shows an improvement in prevention knowledge and fall prevention behaviour instead of the control group.	Low
Howard et al. (2016), USA	To determine if a two-visit, personalised fall prevention educational intervention affected awareness of fall risk and to assess new learning in a cross-cultural context and willingness to make lifestyle changes to reduce fall risk.	Age from 56 to 92 years of age, with a mean age of 77 years; all lived in home; 16 reported had fallen in the previous 1 year; Most participants received elementary education ($n = 8$); comorbidities of hypertension, cataract, arthritis, diabetes and stroke.	Four males and 14 females had participated in the study.	(i) FRAQ scores increased from pre-test to post-test from 27.18 to 27.47, $p = .704$ (after removing an outlier). (ii) Willingness to make lifestyle changes related to fall prevention.	There was a slight increase in the means of the total post-test by 0.29 FRAQ scores over pre-test scores (with the outlier removed) and the statistically significant result of the behaviour question grouping, with the outlier removed.	Good
Schepens et al. (2011), USA	To compare the effectiveness of two tailored multimedia fall prevention educational interventions in improving fall threats knowledge and engagement in fall prevention behaviours in community-dwelling older adults.	The overall mean age: 79.2 (1); authentic: 78.3 (1.8); motivation: 80.1 (1.8); control: 79.2 (1.8).	Female: 43 (81%); male: 10 (19%).	(i) Authentic group: post-test 21.7 (1.7), pre-test 17.1 (1.1), $p = .004$. Motivation group post-test 23.0 (1.5), pre-test 16.6 (2.3), $p = 0.002$. Control group: post-test 15.7 (1.4), pre-test 15.6 (2.3), $p = .96$. (ii) The authenticity group identified significantly more fall threats than the control group ($p = .29$), as did the motivation group ($p = .07$). (iii) Fall risk behaviour: authenticity vs. control: ($p = .029$); motivation vs. control: ($p = .007$); motivation group	Combining motivational strategies with multimedia education increased the effectiveness of the intervention in encouraging fall prevention behaviours. The multimedia-based and tailored fall prevention education shows an effective intervention for improving fall threat knowledge and engagement in fall.	Low

(Continues)

TABLE 3 (Continued)

Intervention/control group						
Ott (2018), USA	To evaluate the impact of a fall prevention educational session on fall risk knowledge, use of fall prevention interventions, and the number of falls in community-dwelling older persons attending physical therapy.	The mean age of 65.75% (N = 6) of the individuals lived in a private residence with another person. Education level, 50% (4) graduated from high school. Participants perceived their overall health status was good (62.5%). The majority had comorbidities consisting of arthritis/rheumatism and hypertension (62.5%). One participant had a fall with injuries, and three had non-injuries falls in the past 2 years.	Female: 6 (75%); male 2 (25%)	(i) The means of the pre-test and post-test interventional FRAQ scores increased pre-test to post-test 0.096 (22.85–26.5), $p = .031$ Increased awareness of medications related to fall risks was observed by having a 50% increase in scores from pre-test to post-test. (ii) Fifty percent (N = 4) of the participants have made lifestyle changes based on their strategies. At the 60-day post-education, one participant (12.5%) experienced a fall without injuries.	The educational intervention older adults show an increased fall risk knowledge score indicated in the post-FRAQ scores increases. It also revealed that the same population had a higher number of participants using fall prevention interventions at home, reducing the number of falls noted compared with previous years. Powerpoint presentation and oral information will retain the information.	Good
Khong et al. (2017), Australia	To evaluate the effect of delivering a peer-led falls prevention on community-dwelling older adults' beliefs and knowledge about falls prevention, and their motivation and intention	Overall mean age: 78.55. The mean age in control group was 77.9 (6.9); intervention group was 79.2 (7.0). A previous 12-month fall, $n = 40$ (40.4%) and intervention: $n = 45$ (33.8%). A self-rated health: control: good	Total female: 143 (61.6%); male: 89 (38.4%). Control: female $n = 71$ (71.7%) and male 28 (28.3%). Intervention: female: 72 (54.1%); male: 61 (45.9%)	(i) Participants in both control and intervention groups showed increased self-perceived knowledge, increased self-belief that falls prevention would be useful, and increased motivation levels to prevent falls at post-	Providing peer education raises older adults' levels of beliefs, knowledge, and intention to engage in fall prevention.	Good

(Continues)

TABLE 3 (Continued)

	Intervention/control group			
	presentation and at 1-month follow-up, but not significant.			
	Female in both groups reported increased levels of knowledge about falls prevention after the presentation. (OR = 1.82, 95% CI: 1.02–3.270).			
	Intervention (n = 133); baseline (IQR): 4.1(0.79); post-test: 4.5 (0.53); 1 month: 4.6 (0.53).			
	Control (n = 99); baseline: 4.2 (0.77); post-test: 4.6 (0.53); 1 month: 4.6 (0.53)			
	(ii) Participants in both groups also reported higher levels of intention (control median 4.4, intervention median 4.5).			
	The intervention group reported that they had developed a clear action plan that they intended to implement to reduce their risk of falling compared to the control group (OR = 1.69, 95% CI: 1.03–2.78), a significant.			
	Female in both groups report to plan action plan to reduce their risk of falling. (OR = 2.47, 95% CI: 1.51–4.02).			
	(i) Increased knowledge in-home hazard modification programme (HHMP) started increased at week 12 and fall prevention awareness between baseline and the 52-week follow-up ($p < .05$).			
Kamei et al. (2015), Japan	To evaluate the potential improvement of fall prevention awareness and home modification behaviours and to decrease indoor falls by applying a home hazard modification programme	Overall mean age: 75.75. The mean age in intervention and control group: 75.7 (6.7) and 75.8 (6.4) respectively. The previous fall in the intervention & control group: 10 (28.4%)	Female: 110; male: 20; intervention: female 56 (83.6%) and male 11 (16.4); control: female 54 (85.7%) and male 9 (14.3%).	The HHMP was successful in improving fall prevention awareness and home modification behaviours in the HHMP group. There was a significant increase in fall prevention awareness in the HHMP

(Continues)

TABLE 3 (Continued)

	Intervention/control group
(HHMP) in community-dwelling older adults followed up to 1 year in this randomised controlled trial	<p>Control group: the knowledge of the control group dropped at 12 weeks, but there were no significant changes between baseline, 12 weeks, and 52 weeks; thus, this change had no effects.</p> <p>(ii) The HHMP group decreases fall risks. HHMP 10.9% reduction in overall falls compared with the control group (hazard ratio [HR] = 0.591, 95% CI: 0.305–1.147; log-rank test, $p = .116$. The aged 75 years and older group showed a reduction in falls of 18.5% (95% CI: 0.043–0.277) and a 13.2% reduction in indoor falls (95% CI: 0.004–0.175) at 12 weeks.</p>
and 18 (28.6%), respectively.	group between baseline and 52 weeks ($p < .05$).

TABLE 4 The metric quality of education programme (adopted from Heng et al., 2020)

		Chen (2013)	Howard et al. (2016)	Schepens et al. (2011)	Ott (2018)	Khong et al. (2017)	Kamei et al. (2015)
Purpose (4)	Is the purpose and rationale of the education programme stated?	1	1	1	1	1	1
	Is there a clear direction to the programme?	1	1	1	1	1	1
	Is there a satisfactory description of the significance of the programme?	1	1	1	1	1	1
	Is the education conducted in a suitable setting?	1	1	1	1	1	1
Learner characteristics (2)	Is the programme pitched towards an appropriate audience?	1	1	1	1	1	1
	Is there recognition of learner's/co-learner's prior knowledge/experience?	0	1	1	0	1	0
Teacher characteristics (4)	Is there a description of who is teaching the programme?	0	1	1	1	1	1
	Are the teachers qualified and/or experienced on the topic?	0	1	1	1	1	1
	Are the teachers qualified and/or experienced in teaching?	0	1	1	1	0	1
	Is training on the programme offered?	0	1	1	0	1	0
Learning activities (3)	Is there a description of the learning activities?	0	1	1	1	1	1
	Are the learning activities suitable for supporting learners/co-learners to meet the learning objectives?	0	1	1	1	1	1
	Is there an assessment of learner's/co-learner's achievement of learning objectives (knowledge, skills, attitudes)?	1	1	1	1	1	1
Evaluation (4)	Has an evaluation been planned?	1	1	1	1	1	1
	Is the evaluation method appropriate?	1	1	1	1	1	1
	Has an evaluation been conducted?	1	1	1	1	1	1
	Are the education outcomes reported for process (learner's/co-learner's views on the teaching)?	1	1	1	1	1	1
Total (17)		10	17	17	15	16	15
	0–6: low	Moderate	High	High	High	High	High
	7–12: moderate						
	13–17: high						

TABLE 5 The characteristics of educational programmes

	Group versus single	Content of the education programme	Mode of delivery	Duration/frequency of a session	Educational design principles and models
Chen (2013)	Not stated	Environment changes, exercise programmes	A DVD presentation: Visual and audio	Not stated	Health belief model
Howard et al. (2016)	Group education and individual home visit	(i) Exercises, home hazards, behaviours leading to falls, medication use, vision, footwear, and foot care, blood pressure and heart issues leading to falls, and Vitamin D supplements. (ii) Centers for Disease Control and Prevention (CDC) home falls prevention checklist	(i) An original workbook provides a visual aid. (ii) CDC home falls prevention checklist—home visit with personalised instruction	(i) Fall prevention topics: 2–3 h. (ii) Home visit with personalised instruction: 1.5 h	Not stated
Schepens et al. (2011)	Group education	Everyday situations in familiar environments.	Multimedia presentation: using vignettes of scenarios or video clips	Vignettes presented brief, approximately 30-min educational Session (45-s scenarios × 5 pairs of video clips) in specific environments, simultaneous with first-person narration.	(i) Authenticity group: situated learning theory (ii) Motivation group: Attention–Relevance–Confidence–Satisfaction (ARCS) model
Ott (2018)	Not stated	The definition of a fall, prevalence of falls, the complication of falls, where older adults tend to fall the most, high-fall risk-associated diseases, common risk factors with emphasis on pertinent fall risk factors identified for each participant, and fall prevention interventions	(i) PowerPoint presentation (ii) Booklet	The 1st session: 1.5 h	Health belief model
Khong et al. (2017)	A peer-led for group education	Falls-related content knowledge such as risk factors for falls and strategies for reducing the risk of falls, including managing one's medications, improving balance by undertaking exercises, checking feet and footwear and completing environmental modifications	Videotape, booklet, flyers and presentation	1-h presentation for each session	behaviour change wheel theory and educational and adult learning principles
Kamei et al. (2015)	Group education (20 pax)	(i) A residential safety self-assessment consisting of a 33 item self-checklist and the CDC (2005) home fall prevention checklist for older	Non-specific presentation (lecture). Another practical session using the mock-up.	Weekly for 2 h/session for a total of 4 weeks	Not stated

(Continues)

TABLE 5 (Continued)

Group versus single	Content of the education programme	Mode of delivery	Duration/frequency of a session	Educational design principles and models
	adults modified for Japanese settings with added items. (ii) A home hazard awareness programme and education: using a displayed 60 cm × 60 cm residential mock-up			

TABLE 5 (Continued)

Education-specific outcomes	Behaviour Change-related outcomes	Measure used to assess fall risk awareness/knowledge	Assessor/teacher
Chen (2013) Increased	Increased	A self-developed; Cronbach's alpha: .619	Not stated
Howard et al. (2016) Increased	Increased	(i) FRAQ: fall risk awareness (ii) semi-structured interview	Occupational therapists, a PhD and master students in an occupational programme
Schepens et al. (2011) Increased in interventions groups (authenticity and motivation group)	Increased (in interventions group)	Fall threats knowledge: 10 video clips (approximately 10 s each) presenting everyday situations in familiar environments. The pre- to post-test did not duplicate intervention content.	A licensed occupational therapist and instructional technologist.
Ott (2018) Increased	Increased	(i) FRAQ: awareness of fall risk factors (ii) The second post-test assessment: (a) questionnaire by Lord et al. (2001), (b) post-discharge questionnaire by Hill et al. (2009)	Family nurse practitioner and physical therapist
Khong et al. (2017) Increased	Enhanced in behaviour engagement.	Based on the framework of behaviour change wheel theory (Michie et al., 2011), namely, capability (awareness and knowledge), opportunity, and motivation (Michie et al., 2011).	Community engagement officer, physical therapist and peer educator
Kamei et al. (2015) Increased knowledge of in-home hazard modification programme (HHMP)	Improved in home modification behaviour	A 10-item original questionnaire on falls that developed and used in another study (Kamei et al., 2010) by researchers to assess older adults' fall prevention awareness.	Public health nurse researcher for home hazard modifications education

Schepens et al., 2011). These findings suggested a significant increase in fall risk awareness and knowledge after the post-test interventions. Although an increased mean or median was demonstrated in fall prevention knowledge, the results were insignificant in two studies (Howard et al., 2016; Khong et al., 2017). Hence, the documented findings in Howard et al. (2016) and Khong et al. (2017) were inconclusive to indicate if FPE improves older adults' fall prevention knowledge in their studies.

Howard et al. (2016) revealed that discrepancies exist in health literacy among older participants in their study when they could not understand fall risks or fall risk concepts and the questionnaires, whereas in Khong et al. (2017), their participants stated that the information was irrelevant since they never experience a fall. However, the females in both intervention and control groups had greater knowledge levels than their counterparts after FPE (Khong et al., 2017). Khong et al. (2017) justified that those who had previously discussed fall prevention with their health care providers or received falls prevention information demonstrated to have superior knowledge than the others.

One randomised control trial (RCT) reported a significant finding and increased mean score in fall risk knowledge for the intervention groups. It may be explained from a combination of evidence-based theoretical frameworks and approaches of tailoring multimedia-based enhancing their interventions' general design and presentations (Schepens et al., 2011). Another RCT indicates improved knowledge in the home hazard modification programme after using a mock-up home setting and a hands-on session to contextualise the real-life home setting with average participants scores almost at the highest point of the knowledge indicator (Kamei et al., 2015). Furthermore, Ott (2018) revealed that increased knowledge levels are becoming a protective factor in reducing older persons from falling. This finding explained that their fall risk awareness promotes them to recognise their fall threats and prevent them from experience falls. Unfortunately, Chen (2013) did not report any details for the significant finding.

4.2 | FPE and behaviour change-related outcome

All studies revealed a positive change in intention or engagement of fall preventive behaviours (Tables 3 and 5) (Chen, 2013; Howard et al., 2016; Kamei et al., 2015; Khong et al., 2017; Ott, 2018; Schepens et al., 2011). Four out of six studies demonstrated a significant finding in older adults' behaviour change (Chen, 2013; Howard et al., 2016; Khong et al., 2017; Schepens et al., 2011), except in Kamei et al. (2015) and Ott (2018). The mean age of participants in Kamei et al. (2015) was 76 years. This contributed to their restrictions in physical functions to adopt specific behaviour changes and compromise in the home modifications. Another study was probably due to a relatively small total number of participants ($n = 8$), physical constraints and needing assistance installing grab bars or railings (Ott, 2018).

More than half of the participants in a study for both intervention groups (authenticity and motivational) participated in four or more fall prevention behaviours than the control group (Schepens et al., 2011). However, no details reported on the adopted new behaviours but are referred to modifications on the home environment, walking aids and daily living activities (ADLs). Whereas, the motivational group was allowed to choose their own set of goals that excite them to be involved and accomplished more new behaviours. The participants in Howard et al. (2016) intended to make lifestyle changes by performing simple home modifications, using appropriate assistive devices or footwears, exercise, health monitoring (management and maintenance) and a healthy routine. On the contrary, Khong et al. (2017) believed that the education shared by peers motivated the learners' participation in fall preventive behaviours.

On the other hand, the experiential learning experienced by older adult learners via a mock-up home and the practical sessions in identifying fall threat sources has successfully impacted on their fall preventive behaviour (Kamei et al., 2015). Examples of behaviour changes reported were avoiding obstacles on the floor or pathway (newspapers, books and electrical cords), securing throw rugs or mats in various places, installing grab bars in the room or bathroom, adjusting the bed height and being cautious on pets. Another study revealed that half of the participants were positively involved in lifestyle changes after receiving FPE ($n = 4$) (Ott, 2018). Unfortunately, there was no further explanation in a study by Chen (2013).

4.3 | FPE and its contents

Table 5 demonstrates that three studies have almost similar fall risk topics reporting in FPE such as the definition of a fall, prevalence and risk factors of falls, the common myths about falls, the complication of falls, places of frequent fall and fall prevention or reducing the risk of falls strategies (managing medications, balance training, choosing suitable footwear, modifications of the home environment) (Howard et al., 2016; Khong et al., 2017; Ott, 2018). Two studies focused on home or environmental risks (Kamei et al., 2015; Schepens et al., 2011), and another study provided education on environmental risks and exercise information (Chen, 2013). Kamei et al. (2015) introduced and demonstrated their 60×60 cm residential mock-up to the older community to educate and practise real-life situations on home hazard awareness to modify and create safety in a residential environment. In addition, Schepens et al. (2011) aimed at educating the community older persons to recognise the environmental fall risks using everyday situations in familiar environments through vignettes of video clips.

A few studies employed an established checklist such as from the Centers for Disease Control and Prevention (CDC) of home fall prevention checklist for older adults and the Prevention of Falls in Older Persons from the American Geriatrics Society as well as British Geriatrics Society for Clinical Practice Guideline.

4.4 | Educational design principles and theoretical frameworks

Health belief model (HBM) was mainly attributed as educational design principles underpinned in two education studies (Chen, 2013; Ott, 2018) (Table 5). Chen (2013) referred to the model by presenting the findings according to individuals' perceived susceptibility, perceived severity, perceived barrier and perceived benefits. Ott (2018) also adopted this theory in formulating the educational tool to evaluate its relationship between individual beliefs and application to positive behaviours. Schepens et al. (2011) also assumed two theories in their programmes: the situated learning theory for the authenticity group. It was claimed that knowledge is best learned based on real-life situations represented through an actual setting, a virtual surrogate or a multimedia presentation. Another Attention-Relevance-Confidence-Satisfaction (ARCS) model in the motivation group used the principle of satisfying learners' fundamental desires or values to drive individuals' motivation. Khong et al. (2017) emphasised the behaviour change wheel theory, an education and adult learning principles embedded in the education programme, including goal setting and developing an interactive presentation to encourage learners' motivation to learn. In contrast, the remaining two studies did not specify any theoretical frameworks underpinning their education designs (Howard et al., 2016; Kamei et al., 2015).

4.5 | Quality and appropriateness of fall education programmes

Table 4 shows the metric quality assessment for educational programmes. The majority of the provided education programmes proved to have high quality (Howard et al., 2016; Kamei et al., 2015; Khong et al., 2017; Ott, 2018; Schepens et al., 2011) except one with a moderate quality (Chen, 2013). Unfortunately, Chen (2013) did not report any information on the learning activities and characteristics of the educators or the learners.

All studies had well stated on their educations' purposes and justification for education settings as the first component in the metric assessment. All studies targeted the appropriate audiences but two out of these studies did not elaborate on their learners' knowledge or experience. Five studies and except Chen (2013) described the educators' knowledge, experience in the topic or teaching and involvement in the training prior to the education interventions.

Overall, the educators across five studies had experienced as family/public health nurses, physical therapists and occupational therapists (OTs). Meanwhile, peer educators in peer-led interventions received a 5-h training demonstration and lecture. They also went through another 4 h comprised of group works or discussion and mock presentation practice by two different professionals prior to peer educations (Khong et al., 2017). The leading researcher of an OT in Howard et al. (2016) has led and trained the other co-researchers (a PhD and master students of OT) related to the intervention

information. Another OT in Schepens et al. (2011) has received training using vignettes from one of the most accomplished instructional technologist.

In addition, most authors adequately described the process for each learning activity. For example, the estimated duration for the FPE to take place ranges from 30 min to 3 h per session across studies and the sessions have been divided into a few phases. Kamei et al. (2015) adopted a flow diagram to illustrate their teaching and learning activities. Overall, all studies successfully evaluated their older individuals' outcomes for fall prevention awareness or knowledge and behaviour change.

4.6 | Nurses' role in collaborating with other professionals

There were only two studies involving nurses as the investigators and delivering education (Kamei et al., 2015; Ott, 2018). The occupational and physical therapists mainly engaged in the educational programmes on fall risk or fall (Howard et al., 2016; Khong et al., 2017; Ott, 2018; Schepens et al., 2011). However, no educator was mentioned in a study (Chen, 2013). The lack of participation among nurses suggested that nurses still had inadequate roles in providing FPE to older adults in the community settings.

5 | DISCUSSION

The six articles in this review highlighted that providing FPE promotes older adults' fall risk awareness or knowledge and behaviour change. On the contrary, all studies did not report any association between fall risk awareness or knowledge and fall preventive behaviour. Despite that, theoretical principles supported the relationship of knowledge to behaviour change as demonstrated in numerous studies (Miller, 2010; Ott, 2018; Punlomso et al., 2020).

Howard et al. (2016) reported no significant difference found in fall prevention knowledge among their learners. Demographic findings, education and memory retention were the main contribution to knowledge gain among older adults, especially when their participants only completed elementary schools and came from cross-cultural communities. Older individuals in Khong et al. (2017) demonstrated a non-significant knowledge due to irrelevant perception towards at risk of falls. Whereas, added motivation strategies prove to enhance their engagement in behaviour change (Kiyoshi-Teo et al., 2020).

Using an interactive and familiar activity to conduct FPE may increase the likelihood of older individuals' behaviour participation in the prevention process and learning (Flint et al., 2020). According to Kiyoshi-Teo et al. (2020), older individuals are keen to participate in fall prevention behaviour if they perceived that their fall risk is modifiable. Most studies included various fall risk topics from personal factors to the modifications of a home environment as supported in other findings (Cerilo, 2016; Chaudhry, 2020).

The included theoretical frameworks underpinned in the selected studies have limited approaches in predicting preventive behaviours. Alternatively, use the protection motivation theory (PMT) to predict protective behaviours (Rogers, 1975; Taheri-Kharamah et al., 2020). Furthermore, the educational design approach can be improved using a framework of the 4Ps proposed by Kiegaldie and Farlie (2019).

Interestingly, only two studies mentioned the involvement of the nurses as educators or investigators. However, the essential participation of registered nurses, community nurses, public health nurses, nurse assistants and home care nurses are responsible for providing FPE to community older adults, promoting and enhancing their fall risk awareness.

5.1 | Limitations

The present research study's limitation was the older subjects were older than 60, only included experimental studies and thus did not include all FPE interventions used in practice. The inclusion of only six studies with some studies that consist of small sample participants may not be generalised to the entire older population.

6 | CONCLUSIONS

In this systematic review, FPE adequately serves as one of the fall preventions approaches in enhancing fall risk awareness, knowledge and preventive behaviour change. However, an association between fall risk awareness or knowledge and fall preventive behaviours should require further investigation. The use of theoretical frameworks should be applied in education designs to help improve the educational programme's quality. Nurses are in great potential in planning and providing FPE for older adults in community settings.

6.1 | Implications for nursing management

Expand nurses' roles in fall prevention programmes in community settings by using high-quality and evidence-based educational tools. Highlight the nurse's role and collaborative management in FPE and prior to this; nurses should equip themselves with knowledge of fall risk factors in older adults. Encourage the use of theoretical frameworks in designing fall prevention programmes for older adults in community settings. Apply motivational strategy combined with various educational techniques when providing FPE to older people.

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AUTHOR CONTRIBUTIONS

MFO, KLS, RS, MWW, MM and KGS made substantial contributions to conception and design, or acquisition of data, or

analysis and interpretation of data. MFO, RS, MWW, KLS and MM involved in drafting the manuscript or revising it critically for important intellectual content. MFO, KLS, RS, WWM, MM and KGS gave the final approval of the version to be published. Each author should have participated sufficiently in the work to take public responsibility for appropriate portions of the content. MFO, KLS, RS, MWW, MM and KGS agreed to be accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved.

ETHICAL APPROVAL

This is a systematic review. However, a registration number has been obtained from the PROSPERO (CRD42021232102).

DATA AVAILABILITY STATEMENT

The data that support the findings of this study are openly available in repository.

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SUPPORTING INFORMATION

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The effect of discharge planning on length of stay and readmission rates of older adults in acute hospitals: A systematic review and meta-analysis of systematic reviews

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Abstract

Aim: To examine the effectiveness of discharge planning on length of stay and readmission rates among older adults in acute hospitals.

Background: Discharge planning takes place in all acute hospital settings in many forms. However, it is unclear how it contributes to reducing patient length of stay in hospital and readmission rates.

Methods: Seven systematic reviews were identified and examined. All of the systematic reviews explored the impact of discharge planning on length of stay and readmission rates.

Results: A limited meta-analysis of the results in relation to length of stay indicates positive finding for discharge planning as an intervention (MD = -0.71(95% CI -1.05,-0.37; $p = .0001$)). However, further analysis of the broader findings in relation to length of stay indicates inconclusive or mixed results. In relation to readmission rates both meta-analysis and narrative analysis point to a reduced risk for older people where discharge planning has taken place (RR = 0.78 (95% CI: 0.72, 0.84; $p = .00001$)). The ability to synthesize results however is severely hampered by the diversity of approaches to research in this area.

Implications for Nursing Management: It is unclear what impact discharge planning has on length of stay of older people. Indeed, while nurse managers will be interested in gauging this impact on throughput and patient flow, it is questionable if length of stay is the correct outcome to measure when studying discharge planning as good discharge planning may increase length of stay. Readmission rates may be a more

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appropriate outcome measure but standardization of approach needs to be considered in this regard. This would assist nurse managers in assessing the impact of discharge planning processes.

KEYWORDS

acute hospital, aged, bed occupancy, discharge planning, length of stay, patient discharge

1 | BACKGROUND

Discharge planning has become an important feature in health systems worldwide. The premise is to improve coordination of services from hospital to the community, to ensure a seamless discharge for the patient, resulting in decreased length of stay in hospital and a reduced rate of readmissions (Chen et al., 2021; Pellett, 2016; Prusaczyk et al., 2019). Nurse managers, particularly those tasked with bed management and patient flow, are often to the fore in the discharge process and often have to juggle the needs of overburdened hospital bed capacity and the needs of patients being discharged (Hendy et al., 2012; Proudlove et al., 2007; Tran et al., 2018).

There are a variety of definitions of discharge planning offered in the literature. Some describe it in simple terms as a process which prepares the patient for the next stage of their care (Schlemmer, 1989) to complex descriptions of multidisciplinary processes, designed to produce highly individualized discharge plans for patients which can involve education and follow-up care in the community (Balaban et al., 2008; Farren, 1991). Timely discharge from hospital is a fundamental part of care that requires staff to be well trained, clear about their roles and open to innovative ideas (Lees, 2011). The level of complexity involved in the process can also be dependent on where the patient is being discharged to, be that home, community care or another institution (Durocher et al., 2015).

Modern health care systems can be difficult to navigate particularly for the older people due to the complex pathways that they have increasing contact with (Carroll & Dowling, 2007). Coordination of a streamlined discharge process from hospital to home or elsewhere therefore becomes vital for this cohort of patients with a number of authors pointing to the particular needs and difficulties faced by older adults in the hospital discharge process (Gabrielsson-Järhult & Nilsen, 2016; Glasper, 2019; Pringle et al., 2008). Older adults have more complex needs, may have multiple comorbidities and often take longer to recover following an illness requiring more focused discharge planning to get them home or to a long-term care facility (Courtney et al., 2011). This complexity of needs experienced by older people being discharged leads to the potential for multiple breakdowns in the process (Coffey & McCarthy, 2012). Ineffective, or poorly executed discharge planning, has been linked to increases in length of stay in acute hospitals for older people in particular (Haas, 2016; Manthorpe, 2009). Haas (2016) also identified age, comorbidities, lack of family engagement, delay in accessing community supports and absence of suitable accommodation as barriers to simple discharges, leading to increased length of stay in hospitals.

Reducing lengths of stay in hospital has been a constant focus of research on discharge planning and is the most commonly used outcome measure of effectiveness (Chen et al., 2021; Coventry et al., 2017; Rojas-García et al., 2018). Aside from the will to not prolong stay or discomfort for patients, length of stay is an increasingly important metric for managers in particular in addressing efficiencies, throughput and cost (Robinson & Brown, 2014). Socwell et al. (2018) suggest that one fifth of all discharges are delayed for non-medical reasons such as complex social needs and processes involved in securing placement for older people who are not returning home. The complexity and disparity of discharge planning needs and how it affects lengths of stay is apparent from the volume of extant research available. While many individual studies point to reduction in lengths of stay due to discharge planning processes (see e.g. Logsdon & Little, 2020; Southern et al., 2007), reviews have been less conclusive of the benefits (Zhu et al., 2015). Somewhat paradoxically, poor discharge planning has been linked to shorter lengths of stay and rushed inappropriate discharges, leading to readmission (Henke et al., 2017; Kaya et al., 2018), or on the other hand, longer than necessary hospital stays due to the lack of a plan for discharge (Coventry et al., 2017). The evidence in this regard remains inconclusive.

Readmission rates are the other most frequently used measure in gauging the effectiveness of discharge planning. Readmission, particularly for older people, is often cited as a particular issue with some suggestions that rates following discharge from an acute setting can be as high as 25% (Roberts et al., 2019). It has also been suggested that while length of stay is often used as the metric of choice for discharge planning this could be to the determinant of readmission rates (Rojas-García et al., 2018). Indeed, the evidence to date with regard to impact of discharge planning on readmission rates is perhaps stronger than that for length of stay with numerous individual studies pointing to benefit (see, e.g., Åhsberg, 2019; Dizon & Reinking, 2017) and stronger support from review data (Steffen et al., 2009; Zhu et al., 2015).

The volume of research published in many areas of health, while necessary for evidence based practice, can become difficult to appraise and use for practitioners (Schneider, 2016). In some areas, including discharge planning, there are now also a large number of systematic reviews creating further difficulties for practitioners in having to cope with multiple reviews of the same topic (Clarke, 2008; Holmes et al., 2017). This points to the need for a review of the systematic reviews (Smith et al., 2011) resulting in the research methodology for this paper.

2 | METHODS

2.1 | Aim

To examine the effect of discharge planning on length of stay among older adults in acute hospitals. The review question was formulated using the PICO framework:

- P Population: Older adults
- I Intervention: Discharge planning
- C Comparator: Usual care
- O Outcome(s): Length of stay & Readmissions rates

2.2 | Outcomes

Primary Outcome: Length of stay.

Secondary Outcomes: Readmission rates.

Inclusion criteria

- English language systematic reviews which examined the effect of all types of discharge planning in the acute hospital admission.
- Elderly patients (65 and over)
- All reviews which examined length of stay as an outcome.
- Readmission rates of any duration were included
- All reviews which included discharges from acute hospital settings.

2.3 | Exclusion criteria

- Primary research papers of any methodology
- Systematic reviews which did not exclusively include older people as their population.
- Reviews that included primary research detailing discharges from mixed setting studies (i.e., acute, community or other)

2.4 | Search strategy

A search strategy was undertaken based on four key word groups: Discharge planning, length of stay, patients over 65 years of age and acute hospitals. The following key words were searched:

- Discharge planning or Patient discharge or Patient discharge education or Early patient discharge or discharge, patient or discharges, patient or patient discharges or discharge planning's or planning, Discharge or planning's, discharge
- Length of stay or bed occupancy or treatment duration or stay length or stay lengths or hospital stay or hospital stays or stay, hospital or stay, hospitals
- Patients over 65 years or elderly patients or geriatric patients or aged or a person 65 through 79 years of age or a person older than 79 years or aged 80 years and over
- Acute hospitals or non-community setting or hospital or acute health service provider

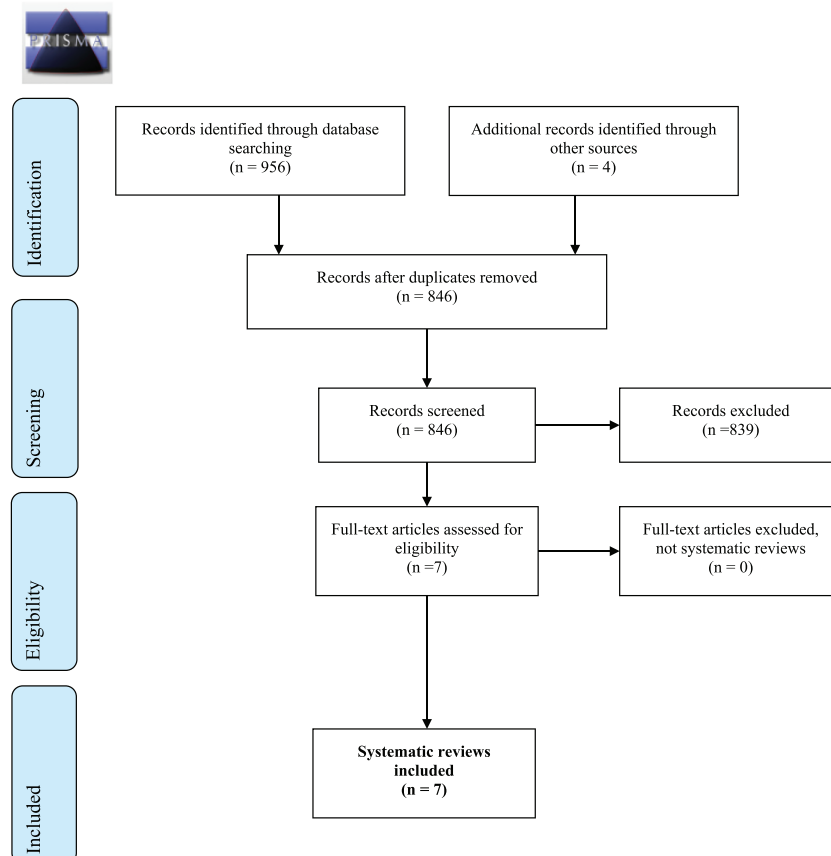


FIGURE 1 PRISMA flow diagram

The following electronic databases were searched in April 2020 to retrieve reports of relevant studies: The cumulative index to Nursing and Allied Health Literature (CINAHL), MEDLINE, Embase and the Cochrane library. Medical Subject Heading (MESH) was used and index terms were combined using the Boolean operand 'or' and 'and'. Gray literature was searched using Google Scholar and Government publications. References of included studies were also reviewed to identify any further relevant studies. A limit of English language only papers was applied as the author could not access and did not have funding for translator services. There was no limitation on year of publication. A Preferred reporting item for systematic review 2009 (PRISMA) diagram was developed to outline the search (Figure 1).

2.5 | Data extraction and quality appraisal

Data were extracted from the included reviews using a data extraction table under the following headings: author/year, setting, method, sample, intervention, comparator, primary outcome, secondary outcome, primary results, secondary results and quality appraisal. Data extraction was carried out by two reviewers (CHO'C & ZM), as promoted by Nelson (2014) as an Institute of Medicine guideline which purports to improve accuracy of data extraction.

Quality appraisal was carried out using the AMSTAR 2 tool which was developed specifically to carry out reliable and swift quality appraisal of systematic reviews (Shea et al., 2017).

3 | RESULTS

A total of 956 records were identified through database searches and four through searches of gray literature and government

publications. Of these, 846 remained following removal of duplicates papers and the titles and subsequently abstracts of these were then screened.

Seven systematic reviews met the inclusion criterion and these form the basis of this review (Fox et al., 2013; Gonçalves-Bradley et al., 2016; Mabire et al., 2016; Mistiaen et al., 2007; Parker et al., 2002; Phillips et al., 2004; Preyde et al., 2009) (Table 1).

The inclusion criteria across the seven reviews, although similar, revealed some differences in terms of the type of methodologies that were accepted for inclusion. In this regard, one contained two pilot studies and one prospective retrospective cohort study (Mabire et al., 2016). Two included quasi experimental trials (Fox et al., 2013; Preyde et al., 2009), one had three cohort studies (Preyde et al., 2009), three included RCT's only (Gonçalves-Bradley et al., 2016; Parker et al., 2002; Phillips et al., 2004). One (Mistiaen et al., 2007) was a systematic meta-review of 15 RCT's.

All seven reviews included English language papers (Fox et al., 2013, Gonçalves-Bradley et al., 2016, Mabire et al., 2016, Mistiaen et al., 2007, Parker et al., 2002, Phillips et al., 2004, Preyde et al., 2009). One paper also included papers in French (Gonçalves-Bradley et al., 2016) and one included papers written in Dutch, German and French and enlisted colleagues fluent in those languages to assist with translation (Mistiaen et al., 2007).

Three of the included reviews did not apply any limits when carrying out the search (Fox et al., 2013; Gonçalves-Bradley et al., 2016; Parker et al., 2002) however, four applied date limits to their searches (Mabire et al., 2016; Mistiaen et al., 2007; Phillips et al., 2004; Preyde et al., 2009).

The total number of publications included across all review was 181. As Mistiaen et al. (2007) is a systematic meta-review including

TABLE 1 Included systematic reviews

No	Author and year of publication	Study intervention	Study setting	Study type
1	Mabire et al, 2016	To determine the effectiveness of nursing discharge planning interventions for older patients discharged home	Hospital	Meta-analysis
2	Fox et al., 2013	Effectiveness of early discharge planning in acutely ill or injured hospitalized older adults, to determine whether length of stay and readmission rates were reduced.	Hospital	Meta-analysis and narrative analysis
3	Gonçalves-Bradley et al., 2016	To assess the effectiveness of planning the discharge of individual patients moving from hospital	Hospital	Systematic review of RCT's
4	Preyde et al., 2009	To assess the impact of discharge planning on elderly patients from hospital to home	Hospital	Systematic review of RCT's and quasi-experimental trials
5	Phillips et al., 2004	To determine the effectiveness of discharge planning and post discharge support on older patients with heart failure	Hospital	Meta-analysis
6	Parker et al., 2002	To examine discharge planning arrangements for older patients	Hospital	Systematic review
7	Mistiaen et al., 2007	To look at discharge planning interventions aimed at reducing problems in adult patients discharged home	Hospital	Systematic meta-review

reviews only ($N = 15$), the other six reviews included primary research articles of varying methodologies ($N = 166$). In order to get a sense of the nature of the primary research studies ($N = 166$) an analysis of the geographical spread as reported by the reviews was carried out (Figure 2). It is notable that only 12% of studies came from outside North America, Australia and Europe. This 12% was contributed to by Taiwan (6%), Israel (2%), China (2%) and Hong Kong (2%).

4 | RESULTS OF PRIMARY OUTCOME: LENGTH OF STAY

The reported results of the effects of discharge planning on the primary outcome, length of stay, were inconsistent across the seven reviews with four reporting positive outcomes (Fox et al., 2013; Gonçalves-Bradley et al., 2016; Parker et al., 2002; Phillips et al., 2004), two being inconclusive (Mistiaen et al., 2007; Preyde et al., 2009) and one showing a negative effect (Mabire et al., 2016). Only two studies showed statistical significance for their results (Gonçalves-Bradley et al., 2016, Mabire et al., 2016). Due to the large degree of heterogeneity and the disparate way in which data were reported it was only possible to carry out meta-analysis of two reviews; Fox et al. (2013) who analyzed seven studies with regard to

length of stay and Gonçalves-Bradley et al. (2016) who reported on 12 of 30 included trials with regard to length of stay. The statistical results were combined using RevMan (The Cochrane Collaboration, 2014) and are presented in Figure 3.

As can be seen in Figure 3, the Mean Difference in length of stay is $-0.71(95\% \text{ CI } -1.05, -0.37; p = .0001)$. This suggests that there is a mean reduction of less than 1 day in length of stay in favor of the discharge planning group. While this results demonstrate statistical significance, with a narrow confidence interval it should be noted that the actual reduction of length of stay in real terms is negligible. It should also be noted that this analysis is drawn from only two of the included reviews, from 19 primary research articles. From the 181 articles across the seven reviews this represents 10%.

The remaining five systematic reviews did not report results which were compatible with meta-analysis using RevMan. In Mabire et al. (2016) six out of 13 included studies reported on length of stay. In a weighted mean difference (WMD) analysis by Mabire et al. (2016), results indicate a statistically significant ($Z = 9.95, p .01$) increase in length of stay for those who had discharge planning (WMD 0.29 95% CI = 0.24-0.35). Preyde et al. (2009) narratively reported the results of 19 out of 25 studies included, which examined the effect of discharge planning on length of stay. Eight studies reported a decrease in length of stay, two reported an increase in

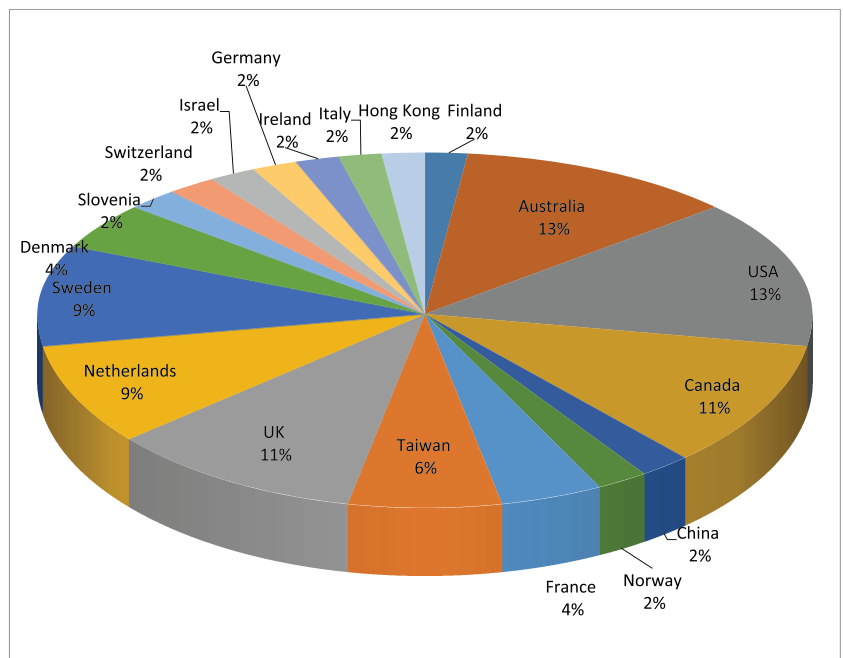


FIGURE 2 Geographical spread of primary research included in systematic reviews

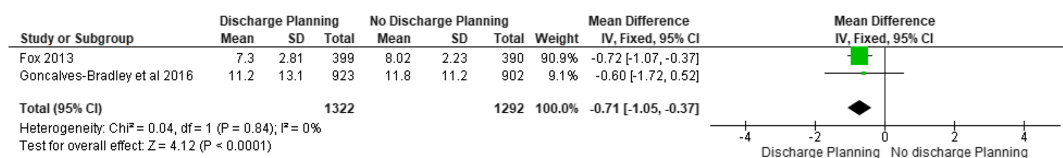


FIGURE 3 Forest plot of comparison: Length of stay

length of stay and nine did not report any significant difference following the intervention. No specific data were provided to further analyze these claims.

When reporting on length of stay, Phillips et al. (2004) found that in 10 of 18 studies included, the results favored the intervention groups. This finding was not statistically significant ($p = .60$) with a wide CI 95% of -0.15 to 0.6 , which suggests a wide range of results on both sides of the effect line. Similarly, Parker et al. (2002) reviewed 71 papers, 19 of which reported on length of stay. They found that discharge planning had a small reduction on length of stay ($MD = -0.46$). This was not statistically significant with a relatively wide confidence interval (95% CI -2.883 to 1.962 ; $p = .710$). Finally, in a narrative synthesis of 25 studies, nine of which reported on length of stay, Mistiaen et al. (2007) found four studies with inconclusive results, one found a reduction in length of stay and four found no statistically significant difference following the intervention. No specific data were provided to enable further analysis of these claims.

5 | READMISSION RATES

All seven reviews reported on readmission rates, five of the seven systematic reviews found a positive effect on readmission rates following the discharge planning intervention, two of which were statistically significant and two were inconclusive.

Four reviews were amenable to meta-analysis. Of nine trials included in the systematic review by Fox et al. (2013) seven reported on readmission rates, Phillips et al. (2004) reported on readmission rates in 18 included studies, while in Gonçalves-Bradley et al. (2016), half of the studies included in the systematic review ($n = 15$) reported on readmission rates. In Mabire et al. (2016) readmission rates were assessed in 10 out of 13 studies.

The statistical results of these four systematic reviews were combined using RevMan (The Cochrane Collaboration, 2014). Results indicate a Relative Risk of readmission of 0.78 (95% CI: 0.72, 0.84; $p = .00001$) suggesting a 22% reduction in the risk of readmission, statistically favoring the intervention group (see Figure 4). Again it should be noted that this results arises from an analysis of data from four of the included reviews, including 52 primary research articles or 29% of the total articles.

For the review not included in the meta-analysis, Preyde et al. (2009) reviewed 25 studies and did not provide any statistical data relating to readmission rates. Preyde et al. (2009) narratively

reported that the majority of papers did not report any difference in readmission rates between intervention and control groups. Parker et al. (2002) measured readmission rates using RRR (readmission risk ratio) where a score of <1 indicates that the intervention has been successful. Of the 71 studies in the systematic review 31 examined readmission rates with an RRR of 0.85 demonstrating a 15% reduction in the risk of readmissions in the intervention group. This reduction was statistically significantly ($p = .001$). Finally, Mistiaen et al. (2007) found the results of seven out of 15 trials in their systematic review to be inconclusive. However, there was no statistical evidence provided to support this conclusion.

6 | QUALITY APPRAISAL

Methodological quality appraisal of the seven systematic reviews was independently assessed by two reviewers using the AMSTAR 2 Quality appraisal tool. This is a validated quality appraisal tool (Smith et al., 2011).

Within the reviews themselves, all used a variety of tools to assess methodological quality. Two authors (Phillips et al., 2004; Preyde et al., 2009) employed the Jadad quality assessment rating scale (QAR) (Jadad et al., 1996). Two reviewers (Fox et al., 2013; Gonçalves-Bradley et al., 2016) used the Cochrane risk of bias tool (Higgins & Green, 2011). Mabire et al. (2016) followed the methodology of the Joanna Briggs Institute, using the JBI MASTARI tool (Joanna Briggs Institute, 2015), Parker et al. (2002) employed the EPOC quality criteria score (EPC A, 2002) while Mistiaen et al. (2007) used overview quality assessment questionnaires (Ospina et al., 2005) and included only those reviews which scored highly in the assessment.

Following quality appraisal of the included systematic reviews using the AMSTAR 2 Quality appraisal tool, two reviews were judged to be of low quality rating (Mabire et al., 2016; Preyde et al., 2009), three as moderate quality (Fox et al., 2013; Mistiaen et al., 2007; Phillips et al., 2004) and two as high quality (Gonçalves-Bradley et al., 2016; Parker et al., 2002).

The low rating for Preyde et al. (2009) was as a result of the absence of any meta-analysis being performed. The low rating for Mabire et al. (2016) could be attributed to the lack of clarity given about the studies which were included and excluded. Also, there was no accounting for risk of bias given. Gonçalves-Bradley et al. (2016) and Parker et al. (2002) both scored a high quality rating having

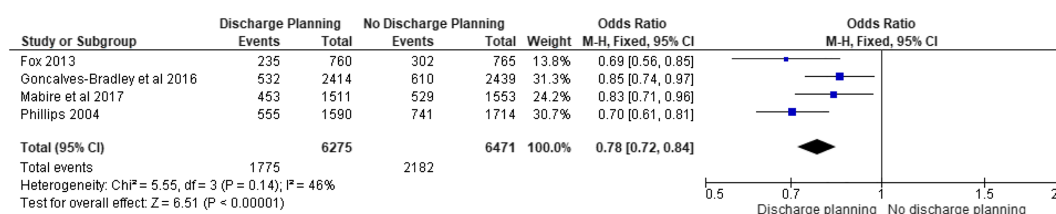


FIGURE 4 Forest plot readmission events

answered yes to all, bar one question, in the AMSTAR tool, which asked for details of the funding used for the studies included.

In summary, seven systematic reviews with a variety of quality ratings reported on the impact of discharge planning on length of stay and readmission rates. Discharge planning was shown to have mixed results or have an inconclusive effect on length of stay but more positive effect on the rate of readmission. A limited meta-analysis of results from 2 reviews indicates statistically significant reduction in length of stay MD = -0.71 (95% CI $-1.05, -0.37$; $p = .0001$). The incidence of readmission was also shown to be decreased following structured discharge planning RR = 0.78 (95% CI: $0.72, 0.84$; $p = .00001$). The results across all reviews report generally that the impact on length of stay is inconclusive while more positive results are reported across all reviews for readmission rates (Table 2).

7 | DISCUSSION

This review examined seven systematic reviews which comprised 181 studies addressing discharge planning from acute hospitals and its impact on length of stay and readmission rates. The findings indicate inconclusive results for length of stay and positive result for readmission rates, although this was not statistically significant in all cases. Pellett (2016) found a huge commitment from medical and nursing teams in United Kingdom hospitals in promoting discharge planning, with results showing decreased length of stay and readmission rates. In a similar way to the findings in this current review, the results were not universally statistically significant. In the United States results from similar studies were reported on the impact of discharge planning, where it is noted that there were a variety of different methods, or teams involved in the discharge planning process, which may affect the results of research (Gray, 2016; Wroblewski et al., 2014). While the majority of evidence suggests that any form of discharge planning has a positive effect on length of stay and readmission rates (Farren, 1991; Gabriel, 2017; Saleh et al., 2012;

Zakzesky et al., 2015) there are some reports of negative, inconclusive evidence, or no change to outcomes (An, 2015; Siew Ping Lang & Bee Kuan, 2017; Wales et al., 2018) as is the case here in this current review.

The results here reinforce the competing narrative around the impact on length of stay as a result of discharge planning (Kaya et al., 2018; Zhu et al., 2015). While from a patient flow and quality of care perspective is it understandable that discharge planning would target greater patient throughput and shorter lengths of stay, the results here and elsewhere indicate that this does not naturally follow. In that respect, perhaps it is time to rethink the use of length of stay as a metric of effectiveness of discharge planning.

Furthermore, the results for readmission rates point to more positive outcome here and in other review and studies (Steffen et al., 2009; Zhu et al., 2015). It could be argued that rushed discharges which may lead to shorted lengths of stay may increase readmission rates thereby pointing to a tension between these two most commonly used outcomes. While readmission rates may be therefore a better metric to use, a more standardized approach to it is also required. In this review, all of the included review did not define what exactly was meant be readmission particularly in terms of timeframe. While 30-day readmission is commonly used this is not standard across all research in this area.

The quality of included systematic reviews also influences how the results can be interpreted. It can be inferred that quality would be high as this review is reviewing other systematic reviews, which are considered the gold standard research. However, although each of the papers used a known quality appraisal tool or mechanism to assess the standard of the studies they included, the quality of the reporting of the systematic reviews varied greatly. All papers described length of stay and readmission rates, as outcomes however, not all provided statistical results for these outcomes. The findings, therefore, must be interpreted with caution as those papers reporting small reduction, or no change in length of stay, were rated here as high-quality reviews (Gonçalves-Bradley et al., 2016;

TABLE 2 Summary of findings

	Mabire et al., 2016	Fox et al., 2013	Gonçalves-Bradley et al., 2016	Preyde et al., 2009	Phillips et al., 2004	Parker et al., 2002	Mistiaen et al., 2007	Meta-analysis
Length of stay	-ve*	+ve	+ve*	Inc	+ve	+ve	Inc	+ve*
Readmission rates	+ve	+ve*	+ve	Inc	+ve	+ve*	Inc	+ve*
+ve = positive finding, discharge planning found to have positive effect on the outcome	Green = high quality rating							
-ve = negative finding, discharge planning found to have negative effect on the outcome	Orange = moderate quality rating							
Inc = inconclusive	Red = low quality rating							
* = statistically significant								

Parker et al., 2002) while reviews which had a low-quality rating reported positively for decrease on length of stay (Mabire et al., 2016; Phillips et al., 2004).

When reviewing systematic reviews, Smith et al. (2011) highlight how it is important that individual studies are not included more than once as this would skew the statistical weight of the results. Smith et al. (2011) also posits that the reviewer should examine each of the included studies in the reviews to ensure this does not happen, which is a complex task. In this current review a lack of cross-over of studies was noted and thus this reduces the chance of arriving at a misleading estimate.

Of the systematic reviews, five included trials which were reported in English only, one included a Danish study which was translated into English (Gonçalves-Bradley et al., 2016) and one included articles written in French as one of the reviewers was fluent in French (Fox et al., 2013). Language bias is therefore, introduced in the reviews as predominantly only English language trials were included. It has been reported that systematic reviews which do this can overestimate effect sizes according to Egger et al. (1997), while Moher et al. (2000) suggest the contrary. There may be a broad field of high-quality research on the subject of discharge planning available to reviewers however, if limiting only to English language much of the literature may largely be ignored due to language limits being applied.

Another feature of note is the geographical location of the studies included in the reviews. They were predominantly from North America, Australia and Europe. One can question why there been no research from large populations such as China or South America has been included. It is possible that as a result of the language bias researchers are not able to access this information. While there does not appear to be a shortage of research on the effects of discharge planning there seems some rather poor research on the topic.

8 | IMPLICATIONS FOR PRACTICE AND FUTURE RESEARCH

The diversity of approaches and the lack of a singular unified definition of what constitutes discharge planning contributes to the difficulty in measuring its impact. From the findings here and elsewhere it would seem clear however that measuring length of stay as an outcome needs to be reconsidered. The tension between length of stay and the other most frequently measured outcome, readmission rates, warrants further consideration. Readmission as an outcome also needs to be considered in a more tightly defined way, with a move to 30 day readmission rate becoming the primary focus.

Continuing evidence of decreases in readmission rates would in itself confirm the need for good discharge planning. In this regard continued education and training and improving discharge planning processes at source should be considered. A more uniform approach to research in this area would make it more useful and understandable for nurse managers and all practitioners.

9 | CONCLUSIONS

In the systematic reviews included, the description of the intervention varied so much that it was difficult for the authors to compare trials against each other. Despite there being a lot of research in the area, there is such heterogeneity in the intervention it also meant that researchers were not able to easily replicate their studies. Also, heterogeneity of reported outcomes between studies and in the way those outcomes were reported led to issues in synthesizing the results.

The use of length of stay in particular as an outcome measure needs careful consideration for the future. While it may seem that a review of systematic reviews may be a concrete way of synthesizing evidence its reliance on the method in which those systematic reviews were carried out must not be underestimated.

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CONFLICT OF INTEREST

None declared.

ETHICAL APPROVAL

Due to the nature of the study (systematic review), there is no need for Ethical approval.

DATA AVAILABILITY STATEMENT

Author elects to not share data.

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ORIGINAL ARTICLE

Managerial and organisational prerequisites for the integration of palliative care in the intensive care setting: A qualitative study

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Abstract

Aim: To explore the association of organizational structures when integrating palliative care in intensive care units.

Background: Palliative care within intensive care settings has been widely recognized as an area requiring improvement when caring for patients and their families. Despite this, intensive care units continue to struggle to integrate palliative care.

Methods: A qualitative descriptive methodology was used. Data were collected through research interviews with 15 managers and 36 health care professionals working in intensive care. The data were analysed adopting constant comparative analysis.

Results: This study provides insight into a diverse range of perspectives on organizational structure in the context of facilitation and the challenges posed. Three themes were identified: Do not resuscitate policy as a gateway to palliative care, facilitating family members to enable participation and support and barriers for palliative care in intensive care unit as a result of intensive care organization.

Conclusions: In fostering a sustainable organizational culture and practice development in intensive care, the findings indicate the need for specific palliative care policies and implementation strategies tailored according to context.

Implications for nursing management: Management has a responsibility to facilitate dialogue within any multidisciplinary team regarding palliative care and, in particular, to focus on 'do not resuscitate' policies as a gateway into this conversation.

KEYWORDS

implementation science, intensive care, organization and administration, palliative care

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1 | BACKGROUND

In health care globally, there are increasing numbers of discussions about the integration of a palliative approach, including in intensive care units. Intensive care units typically care for chronically ill patients in urgent need of treatment for their conditions, and patients in need of intensive care are at risk of physical and psychological effects, both before and after their treatment in intensive care (Moitra et al., 2016; Wunsch et al., 2010). A significant proportion of patients in intensive care does not survive, or die shortly after discharge, even if intensive care aims to withhold vital organ functions (Stretch & Shepherd, 2020). In situations in which death is a more likely outcome than cure, palliative care must be seamlessly integrated into the approach, for patients of all ages (Radbruch et al., 2020). This requires a holistic approach that attempts to support patients' wellbeing and their families' quality of life when curative care is no longer possible, justifiable or meaningful, regardless of the context. In addition, palliative care aims to ameliorate the patient's symptoms and discomfort (Radbruch et al., 2020) addressing multidimensional needs (Ferrell et al., 2018). Hence, palliative care is a quality marker of end-of-life care.

Traditionally, the goal of intensive care has been to provide stabilizing, lifesaving care that prioritizes patients' survival as the primary treatment goal. It could be argued that the primary purposes of intensive care treatment and palliative care are juxtaposed, and it is this contradiction, the related attitudes and beliefs of the clinicians in the two disciplines, that makes integration of the two especially challenging. The challenges are many and varied and include the ambiguous terminology used in critical care settings when curative care is not viable and the legislation that impacts the care interventions undertaken related to the inclusion of a palliative approach. Death is not unexpected in most intensive care situations; most cases of death in intensive care are categorized as end-of-life care and associated with a 'do not resuscitate' order (Fan & Hsieh, 2020). The clinical code of a 'do not resuscitate' order may be used as a way to indicate a change in the care pathway from a curative approach to a 'palliative phase' (Fokin et al., 2020; Higginson et al., 2015); however, its intent is separate from palliation and a palliative approach goes beyond the withholding of treatment.

These challenges exist at the individual, institutional and the cultural/legal levels. At the individual level, health care professionals are not well trained in palliative care and might lack appropriate support. Moreover, misconceptions among health care professionals may lead to practices that might harm the patient in need palliative care (Almobarak, 2016). At the institutional level, palliative care systems may be insufficient to meet the demands in intensive care. There are also cultural and legal challenges in terms of the relatively limited amount of choice a patient has in the face of extreme suffering. In Islamic societies, the legal landscape can be difficult to navigate, especially when dealing with the preservation and prolonging of life and preparing the individual for the afterlife (Sharour et al., 2021). These are just a few examples of the challenges at all three levels that can significantly impact the decisions made in intensive care, both by health care professionals at the bedside and by managers.

Studies suggest that a palliative approach can be integrated within intensive care settings to optimize the outcomes for patients, families and health care professionals, as well as intensive care managers (Mercadante et al., 2018; Nelson et al., 2015), as well as improving the efficiency of resource use (Nelson et al., 2013). A recent systematic review reports on the possibilities and challenges associated with palliative care knowledge translation in the intensive care context, emphasizing organizational and managerial leadership as central components (Alshehri et al., 2020). However, organizational structures have been proposed as one of the factors impeding provision of palliative care in an intensive care. Other factors include a lack of protocols and policies in place to support health care professionals in dealing with the issues (Hansen et al., 2009; Ranse et al., 2012), inadequate educational programmes, insufficient knowledge and skill resources for health care professionals (Alshaikh et al., 2015; Centofanti et al., 2016) and a shortage of staff and support from palliative care specialists (Holms et al., 2014; Hua & Wunsch, 2014). There appears to be a dearth of literature in the intensive care context that examines the impact of integration of a palliative approach for both managers and health care professionals. Hence, the aim of this study is to explore the impact of organizational structures on the integration of a palliative approach to care in intensive care, from the perspective of managers and health care professionals.

2 | METHOD

2.1 | Design

This study employs an interpretive description approach, underpinned by a qualitative research methodology that was specifically designed to examine complex clinical phenomena (Thorne et al., 2016). The data were collected by conducting interviews between April and July 2019, at four Ministry of Health hospitals in Riyadh, Saudi Arabia; two

TABLE 1 Level of intensive care units included in the study as related to the governmental^a health care system in Saudi Arabia (Ministry of Health, 2021)

Hospital health care organization (run by the Ministry of Health) ^b	Study settings included
13 directorates around the country	One directorate
Secondary care general hospitals (286)	Two secondary general hospitals; secondary level of intensive care units; 148 intensive care beds
Tertiary care hospitals (171)	Two tertiary hospitals; tertial level of intensive care units; 76 intensive care beds

^aBesides hospitals, the health care directorates include 2261 primary care centres.

^bIn addition, there is non-governmental health care, and the private sector provides and covers 20% of the national health care.

tertiary referral specialist hospitals and two secondary general hospitals were included (see Table 1 for a description of the settings). In Saudi Arabia, the Ministry of Health public hospitals represents 60% of the health care system, with other governmental public facilities, including specialist hospitals, providing another 20%. The remaining 20% is made up of private health care providers. The health care system is mainly financed by the government and delivered free to the community.

The Saudi intensive care units are staffed by physicians, nurses, dieticians, respiratory therapists and managers; the latter of whom have various backgrounds and are responsible for different professions. In addition, it should be noted that the patients cared for in Saudi intensive care units have a variety of religious beliefs, with a Muslim orientation being the most common.

2.2 | Study participants

Theoretical sampling was employed in recruiting the participants from the four hospitals, ensuring different nationalities, genders and levels of education and professional roles, all of which were checked ahead of each interview. The cohort includes physicians, nurses, dietitians, and respiratory therapists, as well as intensive care managers, and there is a mix of Saudi and non-Saudi citizens, as well as English and Arabic speakers. Within the cohort of managers, diversity was also ensured with regard to professional background and their specific roles, which includes quality managers, respiratory therapist managers, patient relations managers, nursing supervisors and heads of department. Managers in this study were engaged by planning and coordinating their bedside work and available resources. A total of 51 health

care professionals and managers working in the intensive care were interviewed; of these, 15 were managers (most of whom are nurses; see Table 2) and 36 were health care professionals. The participants were aged 23–56 years. For further information, please see Table 2.

2.3 | Ethical approval and consideration

Approvals for this study were obtained from the Ministry of Health research centre and the hospital administration offices. The ethical principles set out by the Helsinki Declaration [15] have been followed throughout the research process, with approval sought from the hospitals' Ethics Committees (Institutional Review Board [IRB] No. H1RE-14-may-19-01, 18-499E) and Ministry of Health research (ID numbers: 1440-238565, 1440-225577, 1440-225751 and 1440-226192).

2.4 | Data generation

Data were collected through individual in-depth interviews (Kvale & Brinkmann, 2014) designed to gain a comprehensive understanding of the impact of organizational structure and context development on the integration of palliative care in intensive care settings. Face-to-face interviews were conducted in the conference office with managers and bedside health care professionals working in the intensive care unit. During the interviews, interviewees were asked to relate their experience of providing palliative care in their organization. An example of a broad question in this regard is: "From an organizational perspective, can you tell me how you provide care for patients in the

TABLE 2 An overview of the participants characteristics

Health care professionals	Nurses Total:19	Physicians Total:12	Allied health professionals ^a Total:5	Managers ^b Total:15
Gender	Female (16) Male (3)	Female (3) Male (9)	Female (2) Male (3)	Female (8) Male (7)
Nationality	Saudi (3) Non-Saudi (16)	Saudi (5) Non-Saudi (7)	Saudi (5)	Saudi (3) Non-Saudi (12)
Highest degree held	Bachelor (18) Masters (1)	MDs (9) MDs/PhD ^c (3)	Bachelor (5)	Bachelor (10) Masters (5)
Specialty education	Critical care specialties (7) None (12)	Anesthesiology (1) Critical care (7) Cardio, critical care (1) Neurosurgery (1) Pulmonary (1) Trauma care specialty (1)	None	Critical care specialties (12) None (3)
Type of intensive care unit	General intensive care (13) Medical intensive care (3) Neuro intensive care (2) Surgical intensive care (1)	General intensive care (9) Medical intensive care (1) Neuro intensive care (2)	General intensive care (5)	General intensive care (9) Medical intensive care (2) Neuro intensive care (3) Surgical intensive care (1)

^aIncluding respiratory therapies and dietitian.

^bOne of the managers has a background as a physician and is responsible for quality measures; one is a respiratory manager who organizes the work of bedside respiratory therapists and the rest are nursing managers who run the unit on the daily basis and provide support to the nursing staff as required.

^cConsultant physician with a degree equivalent to a Doctor of Philosophy (PhD).

intensive care who are about to die or are in need of palliative care?" Follow-up questions, such as "Can you please tell me more?" and "Can you please give an example?" were used to clarify their responses. The interviews were recorded digitally and transcribed verbatim. Field notes were also used to document and highlight aspects of the participants' stories and interview settings. Most of the interviews were conducted in English, although two participants responded in a combination of Arabic and English. The interviews that included both Arabic and English were translated, with the translation verified by two of the authors to ensure that they were accurate. The interviews ranged from 12 to 59 min in length and were conducted over a period of 3 months.

2.5 | Analysis

An interpretive description methodology was employed, and specifically, a constant comparative analysis was applied, as suggested by Thorne et al. (2016). The analysis focused on organizational aspects related to the integration of a palliative approach in intensive care, end-of-life care and do not resuscitate orders in intensive care.

The interview transcripts were read several times, in order to ensure a comprehensive understanding, and a synopsis of each participant was then written to capture their story and to highlight important points. This step highlighted that, as related to the study aim, the data provided by the health care professionals ($n = 36$) were much richer than the data provided by the managers. Based on this observation, a decision was made to handle managers and health care professionals as two separate data sets (Thorne et al., 2016).

This was followed by inductive analysis of the managers' interviews, in which the text was coded and grouped thematically. The similarities and differences were then considered and variations and relationships in the data were identified.

A tentative interpretive structure was subsequently developed and used for further analysis that consisted of three topics.

- organizational facilitators and barriers
- personal considerations, and
- working with patients and their families during end-of-life and palliative care.

Finally, the preliminary patterns derived from the managers were compared to data from the health care professionals (19 nurses, 12 physicians and 5 allied health professionals) in order to highlight the variations, similarities and differences between the two data sets. These patterns were then critically compared to the codes and the data prior to finalizing the analysis.

3 | RIGOUR

This study follows the standards and guidelines for reporting qualitative research as laid out by Thorne et al. (2016), including the use of

analytic logic. The principal investigator, a trained CCN with experience in intensive care, conducted all the interviews; the three co-authors (AW, JÖ and SO) are experienced researchers with knowledge of the chosen methodology and experience in palliative and critical care protocols. Prior to the initiation of the data collection phase, the researchers critically reflected on their pre-understanding of the situation to adopt a more critical attitude throughout the process. Along with the individual in-depth interviews, a variation of participant checking was carried out by sharing a written synthesis of the data with each participant during the interviews and inviting them to confirm or adjust the accuracy of their accounts (Thorne, 2016). This was advantageous since it allowed participants to go further and clarify variations and emerging patterns, enabling the saturation of theme patterns during the analysis process. Throughout the period of the study, the researcher kept field notes and a reflective journal as a way of strengthening the credibility and confirmability of the results. The journal, in particular, was a useful tool in guiding the researcher during the analysis process by directing and recording the interpretations and helping to mitigate biases.

4 | FINDINGS

A total of 51 interviews with managers and health care professionals were conducted and analysed. Notably, both managers and health care professionals working closely with patients in intensive care unit pointed to the organizational structures as a major block in integrating a palliative care approach into intensive care situations. The ways in which this was referred to specifically varied between accounts from the four hospitals, reflecting specific hospital policy, resources and routines for providing palliative care for patients and their families in intensive care units, as well as ongoing discussions about end-of-life care in the intensive care unit. Since there are explicit policies regarding do not resuscitate orders, this acted as a gateway through which participants could share their views and experiences with regard to the lack of palliative care integration in intensive care units. Policy support from the organization was also related to family participation in intensive care and how to support family members. The lack of palliative care policy in intensive care opened up spaces in which moral dilemmas were confronted including (but not limited to) do not resuscitate policies and practices and especially those dilemmas related to personal beliefs influenced by religion and culture. Finally, the lack of specific policies may create barriers for the integration of palliative care in intensive care unit as a result of the intensive care organization itself.

5 | DO NOT RESUSCITATE ORDER POLICY AS THE GATEWAY TO PALLIATIVE CARE

5.1 | Practising and organizing policy

Do not resuscitate order policies, used in cases where patients had a poor prognosis, were terminally ill, or close to death, were the most

referenced policy during the interviews. A do not resuscitate becomes the gateway for providing palliative care, as the participants could more easily describe the care for patients needing transitional care. Some participants stated that they lacked a palliative care policy for patients in the ICUs, yet they had policies to cover decisions regarding do not resuscitate orders. Here is one example of a typical statement made by one of the participants;

“So, we do not have something called a palliative care policy, because it’s like an umbrella.../. Palliative care means you provide care for patients who are going to die or if they have an untreatable disease. Here we have a policy for do not resuscitate orders, which is usually assigned to patients who will end up with palliative care//”N- M9.

The legal standards for withholding or withdrawing treatment require best practice in terms of decision making and management processes. Managers stated that they ensure that do not resuscitate order form was completed by experienced senior consultants and that usually three consultants were included in the decision-making process. However, some of the health care professionals cited difficulties around do not resuscitate orders in practice, especially when working with a new team;

“So sometimes I feel that the patient should have had a do not resuscitate order discussion or a palliative care discussion a week before, but it wasn’t done. There was a delay. I wasn’t on the service”. MD12.

Identifying the need for palliative care, and subsequently communicating this information to the family, was one of the more difficult tasks discussed by the managers. One interviewee said, “*We have a rule here that no-one speaks to the relatives – it’s the job of the consultant.*”N-M13. A number of managers and nurses mentioned that the meeting between physician and family should be a team meeting, in which the family is able to talk with the primary physician, managers and nurses. This is in stark contrast to the usual practice where the physician meets alone with the family on the assumption that they are the best ones to have these difficult conversations.

Managers and health care professionals stated that, despite the existing do not resuscitate policy, physicians sometimes preferred not to make decisions regarding the care goals with do not resuscitate patients who are about to die or in need of palliative care. Such physicians do not agree morally with do not resuscitates and therefore choose to provide maximum care for the patient:

“Some physicians can do ‘no code’ easily, whilst others, no. They do not like to ... or they do not want to keep any patients with no code” MD 5.

The data collected during the interviews highlight a number of inconsistencies in the way in which do not resuscitate and other

policies are applied during end-of-life care, to the point where it became evident that care for dying patients does not fundamentally differ from regular care management. Most managers and nurses said, “*we don’t treat people differently – all patients receive the same care*”. Indeed, it was clear that the care given in intensive care units is the same for all patients, regardless of whether or not they need palliative care or end-of-life treatment; the only exception is that cardiopulmonary resuscitation is not given to patients with a do not resuscitate order.

6 | FACILITATING FAMILY MEMBERS TO ENABLE PARTICIPATION AND SUPPORT

Most participants included family support within their description of organizational structures and policies, acknowledging the importance of family participation, in addition to spiritual support and social worker involvement. Some participants viewed the family meeting as a provision of comfort and support under the policies. These meetings were arranged with a physician and, in some cases, with a facilitator such as a case manager.

One manager said: “*What we are trying to do here in the intensive care, is that we have a family meeting daily. And it’s one to two p.m. We try to comfort them, sympathise with them, explain the picture to them, clearly, so that they do not have any false hopes or anything. This is the least we can provide.*” MD-M14.

Most participants argued that families should be involved in the decision-making process. If the family did not agree with the do not resuscitate policy, the treatment would remain as regular intensive care without treatment limitations.

Nevertheless, some participants stated that the family were not always informed about a do not resuscitate decision, with some physicians emphasizing that the family could not be part of the decision, even though they would be informed of it, as per policy guidelines. Some nurses and managers explained that the constant change in physicians is challenging, as the goal of treatment may also change. They also noted that some patients may improve subsequent to a do not resuscitate order or an end-of-life decision.

7 | BARRIERS FOR PALLIATIVE CARE IN INTENSIVE CARE UNIT AS A RESULT OF INTENSIVE CARE ORGANIZATION

7.1 | Personal level barriers

Managers and nurses described being confronted with various moral and emotional dilemmas related to palliative care in intensive care settings. For example, relationships might be built with patients who live longer than expected and spend longer in the intensive care unit, or

families might hold unrealistic expectations that intensive care treatment can achieve impossible outcomes. In cases when managers noted that physicians had difficulty engaging with the families of patients in need of palliative care, they might conduct the goal of care process themselves, supposedly in order to support nurses working bedside and the patient's family.

A significant part of such moral dilemmas arises from religious and cultural beliefs. Specifically, one manager said: “*You know, we are Arabian, Muslim, and still, we are afraid to stop anything for any patient or to remove medication. So, it's decided in a committee.*” N-M12. Physicians and managers talked about a sense of security in following do not resuscitate policy when making decisions. This could avoid one person reaching a conclusion that is not fully rational, but that may be influenced by Muslim beliefs, even when an explanation for the do not resuscitate order has been made from an Islamic perspective. For example, one manager—who had a background as a physician—mentioned that the do not resuscitate policy had been approved by the high religious authorities (fatwa). Some managers and nurses felt that supportive care should be provided right through to the point of death, as it is not known when the patient will die:

“We will provide the medication, we will provide the painkiller, we will let the ventilator work until the patient dies”. N-M8

“We have to treat all patients, not all will die, because we have to save lives also. We have to do everything we can for the patient. Also, only God can...know how the patient will be. But if we give the care and all the medications and all the treatment, I hope that the patient can be saved. N9

7.2 | Resource and environmental barriers

The way in which existing intensive care unit organization and policies are set up and executed unintentionally presents barriers to the successful integration of palliative care procedures into intensive care units. According to the health care professionals and managers, such barriers include a lack of bedside palliative care consultants and nurses. Some managers pointed out that a shortage of nurses could have a negative impact on the quality of care provided and that such shortages had to be managed carefully. Managers, when discussing the provision of intensive care in the lead-up to end-of-life, used phrases such as *less workload, less demand, nothing has to be done* and *inactive cases*. This discourse was disconnected to the meanings and intentions of palliative care and emphasized a lighter workload, in which case resources could be redistributed. Specifically, one manager said, “*That's how we check our acuity. If there's less demand for a nurse, then that nurse will be with other patients in terms of allocating staff to those patients.*” N-M11.

It was noted that it was more difficult to provide spiritual and supportive care for patients in need of palliative care in intensive care

unit when the staff members were of varied nationalities and religious backgrounds, a challenge that was raised in the interviews by a full range of participants, regardless of their own personal beliefs. Moreover, intensive care settings require a variety of expertise and a number of managers said palliative care training was lacking.

Participants mentioned that a visiting time policy allowed families to stay with their relatives in the intensive care unit for up to 12 h during end-of-life care. Managers specifically stated that visiting policies could be decided by consultants or managers, as they allowed family members to stay longer than usual during the end-of-life phase. However, policy around visiting times was perceived as an organizational barrier that contradicted family and patient support, as the organizational structure—which includes shift patterns—is not dynamic enough to handle different family timings:

‘I feel that at one o'clock, most relatives will not be able to come. Some might be working, so they can only come in the evening. This is so, around four o'clock or four-thirty they will ask us, but we have limited availability to talk to them. We are limited in what we can say. So that is how it goes’. R-M15.

Many participants made the point that an intensive care unit is not designed as a family environment, and often there is not even a designated family area; some went further by identifying the need for a specialized palliative care unit in the hospitals.

8 | DISCUSSION

This interpretive description study aimed to explore the impact of organizational structures on the integration of palliative care approaches in an intensive care setting. The findings strongly imply that the assimilation of palliative care, for patients and their families, into the intensive care unit requires careful orchestration, supported by organizational structures that explicitly include palliative care policy in intensive care units. In this regard, a number of barriers have been identified, as well as some facilitating factors, in the way in which existing structures operate. This includes the care environment itself, as well as professional resources, and personal level barriers of both bedside health care professional and managers. Additionally, common patterns were apparent in terms of the impact of organizational structures.

This study reveals variations in how bedside health care professional and managers deal with patients in need of palliative, end-of-life care as a result of their professional roles and their cultural or religious beliefs. For example, managers tend to be focused on ensuring that the policy is adhered to and that scarce resources are managed, while health care professionals are more committed to bedside work, despite obstacles such as family concerns and workload. However, both managers and health care professionals expressed difficulties and challenges in dealing with palliative care or end-of-life care patients.

While participants agreed on the current lack of palliative care policies, they also see do not resuscitate policy as a gateway into the provision of palliative care to patients who are nearing the end of their lives. Although this study was conducted entirely in hospitals in Saudi Arabia, the findings are in line with similar studies done elsewhere. For example, receiving palliative care in intensive care was linked to a higher rate of do not resuscitate orders in studies from Taiwan and the United States (Lo et al., 2020; Vallabhajosyula & Ingram, 2020; Zalenski et al., 2017). A study from Taiwan by Lo et al. (2020) found that 96.3% of end-of-life care measures were classified as do not resuscitate order (Lo et al., 2020).

Participants considered palliative care to be a complex subject, further complicated in intensive care units given that it sometimes involves end-of-life care as well as do not resuscitate orders. Our findings are in line with several studies highlighting barriers in intensive care units (Baggs et al., 2007; Hansen et al., 2009; Ranse et al., 2012), confirming the importance of an organization's efforts to integrate palliative care in intensive care units. Furthermore, it is clear that a specific policy for patients in need of palliative care is required and must be supported by organizational leaders and policy makers, recognizing that a do not resuscitate order is a decision-making tool, not a form of care.

A major difficulty with regard to palliative care, end-of-life care and do not resuscitate orders is that, while these three concepts are not identical, they are inextricably linked. Therefore, there is a lack of clarity in terminology and policies, which is confusing to health care professionals (Applequist & Daly, 2015; Mercadante et al., 2018). The use of the correct terminology (palliative care and/or end-of-life care) in intensive care units is vitally important as it may impact on the choices and outcomes for the patients and their families. For example, a study from Taiwan investigated the effect of using the term 'natural death' rather than 'do not resuscitate order' in the intensive care unit and showed an improved decision-making process and deeper level of discussion about the goal of care among health care providers and the families (Fan et al., 2018).

Clearly, there is a need for policies to provide greater support for families in terms of medical, spiritual and social support, yet some physicians find contact with families in such situations challenging, insisting that such contact should be done strictly along do not resuscitate policy guidelines. However other participants stated that families should be a part of the decision making process. This finding is in contrast to studies from Canada and the United States of policies regarding family participation in intensive care unit patient care (Burns et al., 2018; Tabibian et al., 2019).

The lack of a palliative care consultant within the intensive care unit was a further problem described by both managers and health care professionals; this was due to an overall lack of palliative care consultants, exacerbated by a lack of palliative care knowledge and training among other health care professionals. This study emphasizes, therefore, the need for more palliative care education and training for both bedside health care professionals and managers.

According to Hua and Wunsch (2014), who identified two models for the integration of palliative care in the context of intensive care

units: an integrative model and a consultative model, they go on to illustrate how deploying a consultative model in intensive care units may be the most effective solution, under which do not resuscitate discussions are included in end-of-life care. This indicates the importance of organizational leadership and policymaker support in reinforcing and integrating a palliative care model in critical care settings.

The findings of this study also point towards differences between bedside health care professionals and managers in terms of their perceptions of do not resuscitate orders, palliative care and end-of-life. The health care professionals portrayed a greater focus on the family bedside care management and other challenges, some of which arise from their responsibilities managing policies within the intensive care unit. In contrast, managers held a greater focus on the correct processes to follow in do not resuscitate decisions, which required the involvement of an experienced consultant and in which, ideally, the do not resuscitate form is signed as soon as the decision is made. Nevertheless, there was evidence that managers also supported bedside health care professionals in everyday care and contact with the family. This finding is in line with implementation studies that concluded the need to focus on how organizational culture interacts with implementation, as the influence of managers could be a critical barrier to effective implementation (Cassel et al., 2018; Li et al., 2018). Furthermore, the managers were more engaged with planning and coordinating the resources, but there was a need for organizational assistance to balance patient and family care with managing resources in intensive care.

It was also found that physicians met with the families even though they often felt they should not bear sole responsibility for these meetings. On the other hand, very few of the interviewees expressed the opinion that several health care professionals should attend meetings with the families. The need for multidisciplinary teams is even more pronounced when the physician is unwilling to make a do not resuscitate decision or to withdraw care. Both managers and health care professionals explained that cultural and spiritual challenges were not limited to Muslims but also extended to proponents of other religions. This finding is supported by several studies (Huang et al., 2019; Pentaris & Thomsen, 2020) and exemplifies how crucial it is to comprehend individual thoughts and values related to providing care for patients (and their families) in need of palliative care or at end-of-life. This could be evaluated in various settings in the future.

One of the main organizational barriers was the lack of staff and, in particular, of registered nurses. Nurses see this barrier as one of the core challenges when working with patients in intensive care units. In order to address this, some managers suggested allocating each nurse to one palliative care patient and one acute patient. The rationale is that critical care patients require more hands-on care. However, this could simultaneously imply that palliative care is seen as relatively passive care, which raises further issues (Hua et al., 2014). These findings emphasize the importance of increasing knowledge and awareness of spiritual, social, cultural and ethical aspects of care while providing palliative care for patients and their families in intensive care units (Hartjes et al., 2014; Hua et al., 2014).

Visiting hours policies were one of the environmental barriers to delivering palliative care to patients and their families in intensive care settings since these often create issues with regard to staff shortages and shift changeovers. These findings suggest the need for hospital administrations to improve resources, increase staff availability, review visiting times and provide training and education about end-of-life care for managers and bedside health care professional not only to successfully implement palliative care in the future but to also improve the quality of care given to patients and their families.

8.1 | Limitations of the study

The rich data gathered in this research add to the credibility of this study, as does the aim to incorporate a diverse range of participants. However, the participant group was mostly female nurses and included a large number of non-Saudi citizens and female managers, plus a few allied health care professionals, which could have affected the results of the study. Furthermore, most of the interviews were conducted in English and/or Arabic, despite the fact that, for many of the participants, neither of these is their first language. Nevertheless, the sample included participants from multiple professions and from a range of different hospitals in Saudi Arabia. This makes the findings transferable to other intensive care units.

9 | CONCLUSION

This research identified the important views of health care professionals and managers with regard to organizational barriers that stand in the way of the successful integration of palliative care in intensive care units. It is clear that the greatest responsibility for implementing such an integration lies with hospital management who must adjust the organization, policies and procedures accordingly and ensure a broader knowledge of palliative care across all professionals working in intensive care units. At the same time, there is a strong need to develop a national palliative care policy in order to improve care for patients and their families while they are in an intensive care unit.

9.1 | Implications for nursing management

Knowledge translation strategies to facilitate the integration of palliative care in intensive care units will be dependent on existing intensive care organizational structures. Thus, an assessment of existing policy, and the potential impact on the integration of palliative care, will be important for nursing management, particularly with regard to do not resuscitate policies, treatment withdrawal and the facilitation of family participation and support (including visiting policies). Furthermore, nursing and medical management have a special role to identify potential moral dilemmas and how these may be influenced by religious, cultural and personal beliefs. It is clearly important to facilitate an explicit yet sensitive dialogue between the professionals

at the intensive care unit bedside, the managers and crucially, the hospital organization at large that takes into account the obstacles and opportunities in relation to the integration of a palliative care approach in the intensive care unit.

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CONFLICT OF INTEREST

The authors declare no conflicts of interest in this study. All the authors have agreed to submit the final version; please also see CRediT author statement.

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ETHICAL APPROVAL

The study was approved by the ethical committee of each hospital's (IRB no. H1RE-14-may-19-01, 18-499E) and MOH research (ID no. 1440-238565, 1440-225577, 1440-225751, 1440-226192).

DATA AVAILABILITY STATEMENT

The data that support the findings of this study are available from the corresponding author upon reasonable request.

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COMMENTARY

Fostering an ethos of cultural humility development in nurturing inclusiveness and effective intercultural team working

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Abstract

Aim: To discuss the importance of fostering an ethos of cultural humility development in cultivating inclusiveness and effective intercultural team working.

Background: Widening cultural and ethnic diversity of the health care workforce enriches the working environment and encourages a broader perspective on health care services and delivery. However, the intricacies of learning to work effectively within intercultural health care teams and adapting to new ways of working are often underestimated and thus overlooked.

Evaluation: In adopting a framework for cultural humility development (Hughees et al., 2020, 10.1016/j.profnurs.2019.06.005), this paper proposes some practical suggestions for nurturing intrapersonal, interpersonal and system level cultural humility simultaneously.

Key Issues: Fostering an ethos of cultural humility development within the workplace can support inclusiveness and better intercultural team working relationships. Nurses need support in developing awareness of their own cultural beliefs, whilst examining perceptions of cultural difference.

Conclusion: Examining cultural factors that influence intercultural working relationships will help in identifying structures, supports and approaches required for integration and inclusiveness.

Implications for Nursing Management: Nurturing ways of supporting interpersonal, intrapersonal and systems levels cultural humility development inspires the self-awareness, openness and respect for cultural difference required. Developing culturally responsive leadership styles and prioritizing their own cultural humility development is critical.

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KEYWORDS

cultural humility, culturally diverse health care teams, inclusiveness, integration, intercultural working

1 | INTRODUCTION

Health care organizations must proactively respond to the growing impact of globalization and the evolving demographics of both patients and staff. Changing migration patterns and a reliance on international staff recruitment has resulted in a broadening of cultural and ethnic diversity among the health care workforce (Xu et al., 2020). One in six health care workers in the United States (Yash et al., 2018) and up to 25% of health care professionals in Europe (Williams et al., 2020) are from migrant backgrounds. Cultural diversity of the workforce provides a rich tapestry of cultures and identities for intercultural interaction, influencing a globalized approach to health care delivery. Nurse managers have a critical role in cultivating inclusiveness and supporting intercultural team working, but the intricacies of this are often underestimated and overlooked (Chen et al., 2020). The complexities with navigating the diversity of cultural norms, variations in professional preparedness and differing clinical practice experiences in an expanding culturally diverse workforce require focussed planning. Specifically, the challenges with managing own cultural identities whilst forming intercultural relations (Byrne et al., 2019), understanding work related differences (Montayre et al., 2017) and unaddressed ethnocentric ideologies (O'Brien et al., 2019) warrant consideration. Fostering an ethos of cultural humility within the team that transcends all-encompassing intercultural interactions is proposed as one approach that encourages inclusiveness and intercultural working.

The concept of cultural humility, which emerged 30 years ago, is often compared alongside the concept of cultural competence. Despite wide debates on the area, both concepts encourage self-reflection and challenge the institutions and systems in which we live and work to fight inequalities and respect human rights (Greene-Moton & Minkler, 2020). Cultural humility is described as a life-long process of developing self-awareness, openness, respect for cultural difference and examining power imbalances (Tervalon & Murray-Garcia, 1998). It can provide mutual empowerment, empathy, respect and partnerships during cross-cultural team interactions (Foronda et al., 2016). In this way, it addresses some of the critics of the concept of cultural competence, as it de-emphasizes the need for cultural specific knowledge that some argue re-enforces stereotypes and fuels cultural misunderstandings (Campesino, 2008). Nurse managers need to consider ways of nurturing cultural humility in promoting cultural awareness, openness and mutual understanding of cultural difference, as a means of supporting effective intercultural working. In adopting a framework for cultural humility development proposed by Hughes et al. (2020), this paper proposes some practical suggestions for supporting cultural humility development, as a means of promoting inclusiveness and better intercultural working relationships. Hughes

et al. (2020) propose the importance of comprehensively integrating approaches that nurture intrapersonal, interpersonal and system-level cultural humility.

2 | NURTURING INTRAPERSONAL CULTURAL HUMILITY DEVELOPMENT

Self-reflexivity of cultural beliefs that inform attitudes and behaviours during cross-cultural encounters is critical for developing intrapersonal cultural humility (Hughes et al., 2020). Supporting the development of cultural awareness, with specific attention to uncovering implicit biases, is a critical component of intrapersonal cultural humility growth. Implicit biases are deeply engrained learned stereotypes about people from diverse cultural and ethnic backgrounds that are often subconsciously developed (Fitzgerald & Hurst, 2017). Although they often occur outside of our conscious awareness, they can manifest in different ways, often go un-noticed and can result in destructive conceptualisations of cultural difference. The growing reports of implicit bias among health care professionals are cause for concern (Fitzgerald & Hurst, 2017; Sprik & Gentile, 2020). However, nurse managers also need to critically review potential biases within their own selves (Robinson et al., 2021). Remaining vigilant for implicit biases that can result in overt or covert discriminatory behaviours within the team is important. Providing opportunities for nurses to 'stop and think' how stereotypes can inform attitudes and behaviours during cross cultural encounters is critical. Intrapersonal cultural humility development requires leadership buy-in and the nurturing of self-questioning behaviour in a safe space where nurses feel comfortable to express their own opinions (Sprik & Gentile, 2020). Taking time to clarify and discuss expectations for intercultural working and the role everybody plays in negotiating respectful working relationships is a good starting point.

Nurses need to develop awareness of their own cultural beliefs whilst developing awareness of cultural factors that influence intercultural working relationships (Markey et al., 2020). Communicating effectively within the intercultural team is critical for effective team working and the delivery of quality and safe patient care. Prompting nurses to reflect on their own communication style, language and how they are affected by culture, whilst being mindful of differences in communication styles, can help with this. Organizing mandatory cultural awareness training provides the foundations for understanding personal cultural beliefs, whilst examining potential stereotypes (Shepherd et al., 2019). However, considering ways of nurturing cultural awareness development in day-to-day practice is essential. Providing opportunities for cross-cultural interactions within the working day are perceived as a source for increasing cultural awareness

(Lin et al., 2019). Facilitating respectful discussions and providing opportunities to debrief about intercultural working experiences before the end of the shift in a supportive environment is critical. The debriefing sessions can be focussed in a way that encourages staff to critically examine factors that influenced approaches to intercultural interactions. Therefore, the culturally sensitive facilitation skills of the nurse manager are paramount in discussing ideas and differing perspectives of intercultural working relationships (Chen et al., 2020).

3 | NURTURING INTERPERSONAL CULTURAL HUMILITY DEVELOPMENT

Developing interpersonal cultural humility involves critically reviewing perceptions of cultural difference and encouraging openness and respect during intercultural encounters (Hughes et al., 2020). Narrow conceptualisations of cultural difference can result in misunderstandings, cultural conflicts and damaging cross-cultural encounters (Kaihlainen et al., 2019). Nurses need support in critically reviewing perceptions of cultural difference and approaches to 'othering' that often go un-noticed, as a means of creating mutually respectful working environments. 'Othering' involves classifying people into categories as a result of over-focussing on cultural differences and encompasses a 'them' and 'us' way of thinking, which ultimately contributes to exclusionary behaviours (Johnson et al., 2004). Nurse managers need to consider strategies that replace 'othering' with 'togetherness' as a means of supporting integration and positive intercultural working relationships. However, the challenges with forming cross-cultural professional relationships are acknowledged (Byrne et al., 2019; Eriksson et al., 2018; Wesolowska et al., 2018). Munkejord (2019) remind nurse managers of the importance of implementing diversity sensitive measures as a means of fostering connection and cooperation within the culturally diverse team. However, this requires the development of inclusive leadership skills (Wang et al., 2019) and cultural mediator abilities (Murray & McConachy, 2018). Planning team building activities and regular team meetings that provide opportunities to explore similarities of beliefs and values can help form personal and professional connections. Mentorship and 'buddy' programmes also support the nurturing of professional relationships (McCann et al., 2013), and structuring this in a way where staff from different cultures are paired together is recommended.

Recent systematic reviews examining the transitioning experiences of culturally diverse health care professionals highlight the complexities of adapting to differences in work processes, responsibilities and roles (Mikkonen et al., 2016; Montayre et al., 2017). Planning orientation programmes and other supports in helping to overcome such transitioning challenges is a necessity. However, planning structures and supports that cultivate integration, inclusiveness and respect for cultural difference as a means of nurturing effective intercultural working relationships is also essential. This requires culturally responsive managers who can support integration and sensitively plan supports and structures that meet the individual and collective needs of

all staff. It also requires observing for and taking measures to prevent incivility within nursing teams (Bagnasco et al., 2018). Perceptions of inferiority and notions of superiority with regard to professional preparedness and clinical practice experiences negatively impact intercultural working relations (Eriksson et al., 2018; O'Brien et al., 2019). Nurse managers need to be mindful of the complexities of intercultural working, whilst remaining vigilant for damaging perceptions of cultural difference that causes conflicts within the working relationship. Reviewing 'taken for granted' assumptions and practices, whilst remaining open to differing realities, experiences and perspectives within the intercultural team, is critical. The importance of examining intercultural encounters through a moral reasoning lens (Markey, 2021) and capitalizing on moral emotions (Cook & Brunton, 2017) can support effective collaboration in culturally diverse teams. This requires providing dedicated time for staff to reflect, review and discuss 'right' and 'wrong' actions and omissions during intercultural working experiences.

4 | NURTURING SYSTEMS LEVEL CULTURAL HUMILITY DEVELOPMENT

Systems-level cultural humility is defined by Hughes et al. (2020) as the health care organizations' role in promoting inclusive working environments through the collective development of intrapersonal and interpersonal humility. It requires a critical review of the culture of the organization and collective attitudes towards cultural diversity and inclusiveness in the workplace. Robinson et al. (2021) asserts the importance of incorporating the 5 R's of Cultural Humility (Reflection, Respect, Regard, Relevance, Resiliency) into everyday leadership practices, as a means of 'leading by example' and transforming the culture of the organization. An intercultural inclusive working environment is one where cultural diversity is valued, all staff feel included and it is characterized by non-discrimination and equality (Shore et al., 2018). Seeing oneself and others in more inclusive ways (Killick, 2018) and nurturing a culture of inclusion (Marcelin et al., 2019) are pivotal for promoting inclusive working environments. The need to review mission statements, strategic objectives and policies to ensure they advocate for inclusion, integration and inclusiveness is core to this vision. Health care organizations have legal obligations for ensuring equality issues in a wide range of employment and employment-related areas, emphasizing the importance of appraising recruitment and retention strategies. Nurse 4Managers also have an important role in shaping attitudes, practices and behaviours that respect cultural diversity and support inclusive working environments. Supporting cross-cultural empathy (Wesolowska et al., 2018) and cultivating an environment that respects differences across educational, clinical practice and migration backgrounds (Munkejord, 2019) are paramount.

Nurturing a culture that fosters respect for cultural difference, appreciation of differing roles and understanding of diverse backgrounds is critical for effective intercultural working. Nurse managers need to empower staff to share and question differing perspectives in

a non-judgemental way as a means of supporting openness and respect for difference. However, this requires the development of trusting working relationships, where shared understanding of social cohesion and respect for differences are flourished (Xu et al., 2020). Anticipating and resolving cultural misunderstandings that may result in conflicts within the team are critical. This requires the development of culturally responsive leadership skills that value cultural diversity, respond to the needs of staff and challenge cultural and professional boundaries in fostering new ways to work collaboratively. Organizational culture and climate are clearly the concepts that support cultural humility. Leader behaviours also tie into the organization's wellness as they promote cultural values alignment by reducing cultural ambiguity, provider burnout and increasing resiliency (Robinson et al., 2021).

5 | IMPLICATIONS FOR NURSING MANAGEMENT

Nurse managers are challenged with creating inclusive and supportive working environments where cultural diversity is embraced and effective intercultural working relationships are nurtured. Chen et al. (2020) highlight the importance of understanding cultural difference and being able to respond sensitively in different cultural contexts in shaping intercultural teams. Nurse managers need to communicate a clearer message of the importance of valuing cultural diversity and respecting differences, whilst also ensuring that cultural insensitivity will not be tolerated. The importance of lobbying for organizational supports that help integration and build inclusive environments is critical. Nurse managers play a critical role in empowering staff and challenging culturally insensitive behaviours. This not only requires critically reviewing their inclusive leadership skills (Wang et al., 2019) and leadership implicit biases (Robinson et al., 2021) but also requires the development of culturally responsive approaches in everyday management. Prioritizing their own cultural humility development, open-mindedness and flexibility to act appropriately in different cultural contexts is paramount.

6 | CONCLUSION

This paper illuminates the importance of understanding the intricacies of learning to work effectively within intercultural health care teams and proposes cultural humility development as a means of supporting inclusiveness and intercultural working relations.

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1. JM, MP, EM and HRJ have made substantial contributions to conception and design or acquisition of literature, or analysis and interpretation of literature;
2. KM, MP, EM and HRJ have been involved in drafting the manuscript or revising it critically for important intellectual content;
3. KM, MP, EM and HRJ have given their final approval of the version to be published. Each author should have participated sufficiently in the work to take public responsibility for appropriate portions of the content;
4. KM, MP, EM and HRJ agreed to be accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved.

CONFLICT OF INTEREST

No conflict of interest has been declared by the authors.

ETHICAL APPROVAL

This is a discussion paper and therefore is not requiring ethical approval.

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