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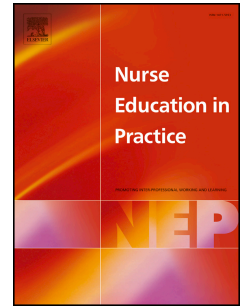
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**EMBEDDING FUNDAMENTAL CARE IN THE PRE-REGISTRATION NURSING CURRICULUM: RESULTS FROM A PILOT STUDY**

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## **Embedding fundamental care in the pre-registration nursing curriculum: Results from a pilot study**

### **Abstract**

International evidence suggests nursing is not providing fundamental care consistently or adequately, resulting in poor outcomes for patients and healthcare systems. One possible reason for this inadequate care delivery is nursing education, with fundamental care often implicit or invisible in nursing curricula. To understand how best to teach fundamental care to pre-registration (pre-licensure) students, we developed and piloted a six-week intervention that incorporated into the first-year curriculum a more explicit focus on fundamental care. A conceptual fundamental care framework was used to guide students' learning, and clinical skills sessions were structured to reinforce the framework's conceptual understanding and enable students to practice delivering fundamental care in an integrated manner. The intervention's impact was explored via a pre-post survey and focus groups. The survey demonstrated that the intervention did not affect students' ability to identify patients' fundamental care needs; however, focus groups showed the intervention assisted students in understanding the complexity of fundamental care and its importance to patients' experiences. The pilot provides preliminary evidence on the importance of embedding fundamental care into nursing curricula early and explicitly, and emphasising the integrated nature of such care, particularly through structured debriefs, consistent terminology, and opportunities for students to experience care as a patient.

**Keywords.** Fundamentals of care, basic nursing care, nursing education, nursing education research

## 1. Introduction

Tertiary nursing education is facing significant policy challenges (Daly et al., 2008), with Forber et al. (2015) warning of an impending ‘disconnect’ between industry and health education. Central to such concerns is the need to articulate essential aspects of nursing practice, such as fundamental care, and to revisit curricula that guide the manner in which nurses are taught to deliver these core elements of nursing. Fundamental care, often referred to interchangeably as the fundamentals of care, basic nursing care, essence of care, or essential care, involves actions on the part of a nurse that address a person’s essential needs in order to ensure his/her physical and psychosocial wellbeing (Feo et al., Forthcoming).

While the nature of care is widely debated in the nursing literature, a description of how students are, and should be, taught fundamental care is less so. Within nursing education, fundamental care is often implicit or invisible, taught as part of introductory first-year courses and rarely revisited (MacMillan, 2016; Thomas et al., 2012). The nursing education literature, too, largely neglects fundamental care, focusing primarily on teaching methods such as problem- or case-based learning (Forsgren et al., 2014; Shin and Kim, 2013) and high-fidelity simulation (Ahn and Kim, 2015; Decker, 2014; Gamble, 2017). Whilst fundamental care might be peripherally addressed in these studies, it is not the focus. Primary research papers that do exist tend to focus only on education for discrete fundamentals of care (e.g., pain management) in isolation from other fundamentals (e.g., dignity, respect) (e.g., Evans and Mixon, 2015). Hence, there exists a dearth of empirical evidence on how to teach fundamental care as a complex, multi-dimensional construct, where the emphasis is on integrating a patient’s different fundamental care needs. This integration has been shown to be crucial for patients’ positive care experiences (Jangland et al., 2016; Kitson et al., 2013b; Kitson and Muntlin Athlin, 2013).

The reasons for the invisibility of fundamental care within nursing education are complex. Feo and Kitson (2016) argued that fundamental care is invisible across entire healthcare systems, including in education, practice, research, and policy, due to three inter-connected factors: (1) the dominance of the biomedical model, (2) managerial frameworks that drive most healthcare organisations and cultures, and (3) the devaluing of fundamental care by nurses. Nursing education is further hampered by its hidden curriculum – the values and practices students learn but which are not explicitly taught (Darbyshire and McKenna, 2013; MacMillan, 2016). Through language, lecture content, assigned readings and role modelling, educators might convey that fundamental care is unimportant and uncomplicated and can be delivered by anyone; not necessarily a nurse (MacMillan, 2016). This is often reinforced during clinical placement where, due to the increasing delegation of fundamental care to healthcare assistants, students regularly observe Registered Nurses undertaking technical or administrative work and are paired with healthcare assistants to deliver fundamental care (Allan and Smith, 2009; Chapman and Clucas, 2014). Together these factors are seen to contribute to a perception that fundamental care involves simple tasks that require little skill to execute and which have minimal impact on patient outcomes (Feo and Kitson, 2016). Perhaps unsurprisingly, research suggests that some nursing students are beginning to devalue fundamental care, rejecting it as central to the Registered Nurse role and stating that delivering such care on clinical placement limits opportunities for learning (Al Awaisi et al., 2015; Allan and Smith, 2009; Darbyshire and McKenna, 2013; Thomas et al., 2012). Feo and Kitson (2016) argued that, to improve care delivery and patients' experiences of fundamental care, a substantial shift in the conceptualisation, prioritisation and valuing of fundamental care is required, beginning with more explicitly embedding such care in healthcare education, research, practice and policy.

This paper explores how we might begin re-conceptualising, re-prioritising and re-valuing fundamental care within nursing education. It describes the outcomes of a pilot intervention designed to explicitly embed fundamental care within first-year pre-registration (or pre-licensure) nursing curriculum. Given the limited existing evidence, we undertook a pilot to understand how best to deliver pre-registration fundamental care education, prior to wider-scale implementation. The aims of the pilot were to: (1) implement the intervention in two accredited pre-registration nursing programs; (2) explore the impact of the intervention; and (3) generate preliminary evidence on how to teach fundamental care at the pre-registration level. This paper therefore addresses some of the gaps in knowledge relating to fundamental care education.

## **2. Methods**

### ***2.1 Design***

Mixed methods approach using a pre-post survey and focus group interviews.

### ***2.2 Pilot intervention***

The six-week intervention was piloted at (name removed for anonymity). Whilst the School's curriculum has always focused on fundamental care, supported by a research stream on the topic, we identified a need to undertake this teaching more explicitly, focusing on the integrated nature of fundamental care delivery. That is, how nurses must address a range of patient fundamental care needs simultaneously (e.g., ensuring dignity whilst undertaking assisted feeding). The intervention took place at the beginning of the academic year in two pre-registration programs: Bachelor of Nursing (for students without a prior University degree) and Master of Clinical Nursing (for students with a prior University degree, in any

discipline). In both programs, first-years students undertake clinical placement eight weeks after the start of first Semester. The intervention involved two components, outlined briefly below: (1) using the Fundamentals of Care Framework to guide teaching and provide for students a way to shape their conceptual understanding of fundamental care, and (2) restructuring clinical skills sessions to reinforce this conceptual understanding. For an in-depth description of the intervention, including facilitators and challenges of implementation, see (reference removed for anonymity).

The first component of the intervention involved introducing students to the Fundamentals of Care Framework, a conceptual framework developed via a consensus-generating approach from the expertise of members of the International Learning Collaborative (ILC) (Kitson et al., 2013a). The ILC is a network of nursing and healthcare researchers, educators, clinicians and leaders dedicated to transforming fundamental care delivery globally. The Framework comprises three dimensions for high-quality fundamental care: (1) establishing trusting relationships with patients and relatives/carers; (2) integrating and meeting patients' fundamental physical, psychosocial and relational needs; and (3) understanding how the care context impacts care delivery (Kitson et al., 2013a) (see Figure 1). The Framework provided students a way to conceptualise fundamental care and to understand how such care should be delivered in practice in an integrated manner, taking into account patients' different fundamental care needs. Students' first lecture introduced them to the Framework and educators linked the content of all subsequent nursing lectures to the Framework.

The second component involved reinforcing, during clinical skills sessions, the conceptual understanding outlined in the Framework and assisting students to develop skills to deliver fundamental care in an integrated manner. Each session focused on specific skills (e.g., basic



life support), some of which were fundamentals of care (e.g., assisted feeding). Students practiced skills on mannequins, before practicing on each other and on actors. Each teaching room displayed the Framework and a list of fundamentals for students to reflect upon when practicing the skill. Each skills session was followed by a structured debrief focused on reinforcing the integrated nature of fundamental care. Debriefs asked students to articulate what it felt like to take on the role of patient, or to imagine they were a patient receiving care for the skill they had practiced, and to articulate the fundamentals important to them.

Figure 1 here

Figure 1. The Fundamentals of Care Framework, Crisp et al. 2017 *Potter & Perry's Fundamentals of Nursing ANZ 5<sup>th</sup> edition*, Elsevier Australia

### **2.3 Participants**

All first-year students undertaking the Bachelor of Nursing (BN) (n=251) or Master of Clinical Nursing (MCN) (n=68) were invited, via email, to participate in the study (total n=319). The aim was to generate as many responses as possible, hence, a sample size was not pre-determined. No specific sampling technique was used; potential participants consisted of all first-year nursing students.

### **2.4 Materials**

The intervention's impact was explored via a pre-post survey and focus groups.

#### **2.4.1 Survey**

The survey, adapted from Jangland et al. (Forthcoming), was used to determine if the intervention improved students' ability to identify patients' fundamental care needs. The

survey describes three patient scenarios, and participants are asked to indicate the fundamental care needs relevant for each patient. Each scenario has correct responses, identified via Item Content Validity Index (I-CVI). To determine the correct responses for this study, eight research and education experts from (name removed for anonymity) rated, on a scale from 1-4, the relevance of each fundamental of care in Table 1 to each scenario. The fundamentals in Table 1 are derived from the Fundamentals of Care Framework and were refined from the list in Jangland et al. (Forthcoming) to better reflect terminology used in the intervention (e.g., in students' textbook). Correct answers were computed as the number of experts rating 3 or 4, divided by the total number of experts. Fundamentals with an  $I-CVI \geq .78$  were considered a correct response (Polit and Beck, 2017). Figure 2 shows the scenarios and their correct responses. The survey also collected data on students' nursing program (BN or MCN), previous nursing experience, and confidence in their ability to identify patients' fundamental care needs (on a slider scale from 'not at all confident' to 'very confident').

**Table 1**

List of fundamentals of care.

1. Safety and prevention of harm
2. Communication and education
3. Nutrition and fluids
4. Elimination
5. Personal cleaning and dressing
6. Rest and sleep
7. Physical comfort, including pain management
8. Emotional support

9. Dignity
10. Privacy
11. Respecting choice
12. Mobility

Figure 2 here

Figure 2. Correct fundamentals of care for each scenario. Scenarios from Jangland et al. (Forthcoming).

#### 2.4.2 Focus groups

The aims of the focus groups were to understand: students' experiences of learning about fundamental care during the intervention; how the intervention assisted them to deliver fundamental care on clinical placement; and suggestions for improving the intervention. A semi-structured interview guide facilitated focus group discussion (see Table 2).

#### **Table 2**

Focus group interview guide.

1. Can you describe what you understand to be fundamental care?
2. Can you tell me about your experiences of learning about fundamental care at the School?
3. What parts of the curriculum helped you to learn about fundamental care?
4. Can you tell me about your experiences of providing fundamental care on clinical placement?
  - a. How did your learning at University help you to provide this care?
5. Is there anything you would have liked more time to practice at University?

6. How can we change the curriculum to help you develop the skills to deliver fundamental care?
7. Is there anything else you would like to add about your experiences?

## ***2.5 Data collection***

### ***2.5.2 Survey***

Survey data were collected pre and post-intervention. The electronic survey was distributed through SurveyMonkey and all first-year students were invited to participate via email. Two versions of the survey with different response formats were distributed: (1) students chose the fundamentals relevant to each scenario from the list in Table 1, presented randomly for each student (hereafter referred to as the 'random list' version of the survey). The fundamentals were not categorised into physical, psychosocial or relational (as in the Fundamentals of Care Framework) to avoid prompting students to provide particular answers; and (2) students identified the care needs in their own words (hereafter referred to as the 'text' version). The aim was to determine whether the survey's response option influenced the responses provided, and how best to gauge students' ability to identify patients' fundamental needs using this survey.

For the purpose of recruitment, all first-year pre-registration nursing students (n=319) were split into two groups (students' email addresses were sorted in ascending order by student ID numbers; the first 159 students constituted one group and the last 160 the other). The first group was emailed the random list version of the survey, and the second was emailed the text version. Students were asked to complete the pre-measure within the first teaching week and the post-measure within the two weeks immediately following the intervention's completion

(prior to the commencement of clinical placement). Students were able to respond post-intervention even if they did not respond pre-intervention.

### *2.5.2 Focus groups*

All first-year nursing students were sent an email inviting them to participate in the focus groups. Recruitment flyers were also posted within the School (in hardcopy and electronically on television screens) and on the School's Facebook page. Focus groups were conducted after students had undertaken their first clinical placement, which commenced two weeks after the intervention's completion. Two researchers not involved in students' direct teaching (RF and FD) facilitated the focus groups. Focus groups lasted 60 minutes each, were audio recorded and transcribed verbatim.

### *2.6 Data analysis*

RF and TC independently coded students' responses to the text version of the survey against the fundamentals in Table 1 and met to discuss their coding until 100% agreement was achieved. Survey responses were analysed using a linear mixed effects model to account for within-student correlations across the two measurement points. To undertake the analysis, a total percentage was calculated for each student by giving a point for each correct response and subtracting a point for each incorrect response, and summing students' scores from Scenarios 1-3.

The focus group data were analysed thematically following the methods of Braun and Clarke (2014). RF, LF and FD undertook initial coding. RF and LF then discussed this coding and synthesised it into higher-order themes, which were refined via discussion by all authors.

## 2.7 Ethical considerations

The study was approved by (name removed for anonymity) Human Research Ethics Committee (H-2017\_013). Participation was voluntary, and students had the right to refuse participation without this compromising their student status or grades. Students' completion of the survey was considered evidence of consent. Students who participated in focus groups were provided an Information Sheet and signed a consent form. Students kept a copy of the signed consent form.

## 3. Results

### 3.1 Survey

Thirty-six students completed the survey pre-intervention (response rate: 11%) and 45 post-intervention (response rate: 14%). Most students, across both survey formats, were undertaking the BN (97% and 94%, respectively, pre- and post-intervention) and had no previous nursing experience (94% and 82%, respectively, pre- and post-intervention) (see Table 4).

**Table 4**

Survey participant characteristics.

		<b>Pre (total) n=36</b>	<b>Post (total) n=45</b>	<b>Pre (random list) n=22</b>	<b>Post (random list) n=25</b>	<b>Pre (text version) n=14</b>	<b>Post (text version) n=20</b>
		%	%	%	%	%	%
<b>Degree</b>	<b>BN</b>	97	94	100	96	92.9	70
	<b>MCN</b>	3	6	0	4	7.1	30

<b>Previous nursing experience</b>	<b>No</b>	94	82	90.9	80	100	85
	<b>Yes (e.g., Care/Nurse assistant)</b>	6	18	9.1	20	0	15

Assumptions of a linear model were met, evidenced by scatter plots and histograms of residuals and predicted values. There was a statistically significant difference in the mean total percentage (as calculated for each student based on their responses) between survey formats, adjusting for clustering on student and also controlling for nursing experience, nursing program and students' self-reported confidence in their ability to identify patient needs (global P value < 0.0001). In the adjusted model, students completing the random list version had a mean total percentage 20.9% greater than those who completed the text version (estimate = 20.9, 95% CI: 13.1, 28.8). There was a statistically significant difference in the mean total percentage between the BN and MCN programs, controlling for survey format and adjusting for clustering on student (global P value = 0.0177). BN students scored a mean total percentage 14.0% less than did MCN students (estimate = -14.0, 95% CI: -25.2, -2.8). No other results were statistically significant (see Table 5).

**Table 5**

Results of linear mixed effects model statistical analysis

Outcome	Predictor	Comparison	Reference	Estimate	Lower 95% CL	Upper 95% CL	P value	N

Total %	Survey format	Random List (RL)	Text Version (TV)	17.7	10.6	24.8	<0.0001	81
Total %	Measurement point	Pre	Post	0.51	-5.37	6.38	0.8561	81
Total %	Measurement point*Surveyformat	RL Pre	RL Post	0.18	-6.93	7.30	0.9561	81
Total %	Measurement point*Surveyformat	TV Pre	TV Post	1.12	-8.18	10.44	0.7976	81
Total %	Survey format	RL	TV	19.0	11.5	26.4	<0.0001	73 <sup>a</sup>
	Confidence	-	-	0.0098	-0.149	0.160	0.8898	
Total %	Survey format	RL	TV	17.6	10.4	24.8	0.0001	81
	Previous experience	No	Yes	-4.5	-15.0	6.0	0.3723	
Total %	Survey format	RL	TV	20.5	13.4	27.7	<0.0001	81
	Program	BN	MCN	-14.0	-25.2	-2.8	0.0177	
Total %	Survey format	RL	TV	20.9	13.1	28.8	<0.0001	73 <sup>a</sup>
	Confidence	-	-	-0.03	-0.19	0.12	0.6395	
	Previous experience	No	Yes	-3.5	-13.7	6.8	0.4762	
	Program	BN	MCN	-10.8	-24.1	2.5	0.1028	

<sup>a</sup> only 73 students responded to the question regarding their confidence in their ability to identify patients' fundamental care needs

### 3.2 Focus groups

Two focus groups were undertaken (n=8, n=9). Most students were female (n=14, 82%) and undertaking the BN (n=16, 94%). Students were aged 18-33 years (mean=21.8 years).



The analysis identified five themes relating to students' experiences of learning about fundamental care: (1) usefulness of incremental learning; (2) importance of understanding patients' perspectives; (3) developing confidence in psychomotor skills and physical fundamentals of care; (4) perception of fundamental care as 'common sense'; and (5) suggestions for improvement.

### 3.2.1 Incremental learning

Students discussed the differences in learning about fundamental care by practicing on a mannequin, student, or actor, and delivering care on clinical placement. Students typically perceived each form of learning as building on the previous, allowing them to develop skills in relation to fundamental care:

*It's good to go from gradual, so starting off by actually sealing [sic: consolidating] the fundamentals by having that plastic mannequin, so you're like, "Okay, I actually have to be making sure that they feel safe" so that's sealing them, like concreting the fundamental basis of it and then you can progress on to the student and then you can progress on to the actor and then by the time you get to a patient, they would be all in your little repertoire of fundamentals that you can just pull out whenever you need to.*  
(Female).

Some students, however, argued that practicing on mannequins, each other, and actors meant they could suspend belief; they were aware the person they were caring for was not a 'real' patient. On clinical placement, however, they were acutely aware they were delivering care to someone genuinely in need: *"They're in there for a reason whereas, you know, when they're in the sim suits, they're mannequins or they're people pretending."* (Male). As such, students

reported being more likely in real-life clinical environments than in skills sessions to remember, and subsequently deliver, fundamental care.

### 3.2.2. *Understanding patients' perspectives*

Clinical skills sessions where students practiced on each other provided insight into what care feels like from the patient's perspective. Students were able to articulate the fundamentals important to them when receiving care and to reflect on the fundamentals they and their classmates had forgotten to deliver as the nurse: "*There was a practical where we were a patient for one of our class members, and that gave me a really good understanding of everything that they were forgetting, and how I was feeling as a patient*" (Female). These learning experiences then prompted students to attend to these fundamentals when providing patient care on clinical placement:

*Doing it on each other was good, like when we fed each other. When you had it done to yourself, you realised how demeaning it was and so when you did it to the actual patient, you wanted to minimise that as much as you possibly could so you provided the privacy or you'd kind of chat to them and make it a bit easier for them.* (Female).

Structured debriefs had a similar impact, helping students to identify the fundamentals they had not considered during clinical skills sessions and the impact of this on patients:

*We kind of had a debriefing afterwards [a skills session on syncope], and I realised how much I just didn't do. There was parts of her privacy – it might be embarrassing for her that she fainted, and I didn't even consider that.* (Female).

### 3.2.3 *Building confidence in psychomotor skills and physical fundamentals of care*

Many students stated that, when learning new psychomotor skills (e.g., intravenous therapy), their focus was primarily on perfecting the procedure associated with the skill, meaning fundamental care would ‘*go out the window*’:

*A lot of my fundamentals go out the window when a learning opportunity comes up. So when an air mattress has to be employed, when a lift has to be used, when IVs are happening, when you’re learning a new technique, you forget the patient and it’s all about learning procedure and then they’re just essentially a mannequin ... You forget the basic fundamentals. (Male)*

Students therefore seemed to make a distinction between psychomotor skills (e.g., vital signs) and fundamental care, arguing it was ‘too much’ to integrate the two early in their learning. Some students also made a distinction between physical, relational and psychosocial fundamentals. For instance, one student reported that mastering the skill of performing physical fundamental care (e.g., washing a patient) was necessary before being able to consider patients’ psychosocial (e.g., privacy) and relational (e.g., respect) fundamental needs. Students reported that continually practicing psychomotor skills and physical fundamentals of care developed their confidence in these skills, allowing them to integrate psychosocial and relational fundamentals into their care delivery.

### *3.2.4 Fundamental care as common sense*

Many students referred to fundamental care as common sense; activities that nurses instinctively undertake, often as a natural response to another’s suffering. Given the perceived ‘innateness’ of fundamental care, some students questioned whether it was being overemphasised in the curriculum. Students also stated that they did not actively think about

the fundamentals when providing patient care and found it difficult to label or identify them.

Nonetheless, students felt confident they were attending to patients' fundamental needs:

Male: *I personally struggle with putting a label on it. I don't realise that I'm doing it. I close the door, I respect the patient, I wash my hands, I respect the patient's safety and infection risk...*

Female: *Doesn't it just come under common sense again?*

Female: *Yeah.*

Male: *It does, but you don't think to label it. Exactly, it's common sense. When we're confronted with it, it's hard for us to be like, "Oh, that is actually what it is." We wouldn't be able to pinpoint it but if you told us to discuss everything that we do step-by-step, we would probably have done a lot of it, in fact almost all of it.*

At the same time, some students articulated that neglecting to think about fundamental care could lead to a task-based approach:

*They very much seem like common sense and commonplace and that can sometimes be dangerous ... In placement, I found that there were times where if I didn't actually stop and think, I was just doing things and not necessarily thinking about that kind of stuff, particularly the psychosocial stuff ... It's very quick for the fundamentals to disappear, I think, if you're not actively thinking of them. (Male).*

Students therefore argued that a key aspect of the intervention was having fundamental care continually reinforced in lectures and clinical skills sessions. This teaching helped them to become cognisant of, and develop language to articulate, the care they were providing, and identify areas to improve their care delivery:

*Female: Being aware of it was helpful. If I wasn't taught that through the lectures, then I probably wouldn't have that awareness that that's what was happening, which is good, I think, so you're cognitively aware that that's what's happening and that's what you are implementing in your placement scenarios.*

*Female: You could get to the point where you realise, "Oh, I could be doing this to help my patients" and all of that but when you've actually learned about the fundamentals of care, you can put a name to it.*

### *3.2.5 Suggestions for improvement*

In addition to the above themes, students identified areas for improving the intervention. Many students suggested having additional clinical skills sessions to consolidate skills and build confidence. Students identified the need for educators to reinforce the fundamentals during clinical skills sessions, not just in debriefs: *"At the end of practical sessions, they would ask what fundamentals of care, what the skills that we learned pertained to. So in a way I kind of felt that it was almost an afterthought."* (Female). Some students also argued there could have been greater emphasis (e.g., in lectures) on encouraging them to understand patients' perspectives.

## **4. Discussion**

This study sought to explore the impact of a pilot intervention designed to explicitly embed fundamental care within the pre-registration nursing curriculum, and to generate preliminary evidence on how best to deliver this teaching. The discussion explores (1) the intervention's impact, (2) how best to teach fundamental care in pre-registration curricula, (3) how the

evidence generated from the pilot will be used to refine the intervention and implement it on a wider scale, and (4) the broader implications of the study findings.

#### ***4.1 Impact of the intervention***

The survey results showed the intervention did not impact students' ability to identify patients' fundamental care needs. This could be due to the duration of the intervention; it might be difficult to identify a change after six weeks. Given many universities do not embark on clinical placement eight weeks into first semester, future research should explore the intervention's impact over a longer period. This finding could also reflect a measurement issue. The survey has not been used previously for pre-post measures and might not be sensitive to detect a change over time.

Students who completed the random list version of the survey were more likely to identify patients' fundamental care needs than students who completed the text version. Hence, students were more likely to identify patients' care needs if prompted with a list. This was reflected in the fact that many students started but did not complete the text version of the survey (44% and 23% of students pre- and post-intervention, respectively, compared to only 4% and 7% of students for the random list version) and was supported by students' self-reported difficulties in labelling the different fundamentals of care. The survey also demonstrated that MCN students were more likely than BN students to identify, correctly, patients' care needs. Given nursing experience had no significant impact on students' ability to identify patient needs, this could be because MCN students were more comfortable completing a survey that assesses knowledge; a possibility given they have a previous university degree.

In contrast to the survey results, the focus groups showed a number of benefits to the intervention, including being in the role of the patient, which helped students to understand the importance of fundamental care to patient experiences, and to recognise they often neglected to deliver the fundamentals during clinical skills sessions. Previous research has similarly shown that taking on the role of patient is effective in helping students to develop caring relationships with patients (Arveklev et al., 2018). The focus groups also demonstrated that explicit, consistent use of terminology was crucial for helping students to develop vocabulary for fundamental care, enabling them to identify where they could improve their care delivery.

Students further stated that having educators continually reinforce the importance of fundamental care as part of the intervention assisted them to actively think about the fundamentals and avoid defaulting to a task-based approach. Whilst students reported difficulties delivering care in an integrated manner, the articulation of this difficulty arguably demonstrated their understanding that high-quality fundamental care involves simultaneously addressing patients' physical, psychosocial and relational needs. The focus group findings therefore suggest that making fundamental care explicit within the nursing curriculum, and focusing on the integrated nature of such care, improves students' ability to understand the importance of high-quality fundamental care and how this care should be delivered in practice. Further research is needed to confirm these findings.

#### ***4.2 How to teach fundamental care***

Students reported they did not actively think about the fundamentals when providing patient care, often finding it difficult to articulate such care. Students also reported difficulties integrating fundamental care with psychomotor skills. Paradoxically, however, students

perceived fundamental care as common sense and innate. These findings suggest students should be made aware of fundamental care early in their curriculum and for this teaching to be explicit, consistently reinforced and focused on the integrated nature of care delivery. In this way, students learn to be cognisant of, and develop language to articulate, the care they provide, rather than taking for granted that they deliver fundamental care instinctively.

The data demonstrated that incremental learning is crucial to teaching fundamental care. Practicing on a mannequin, student, and actor before caring for a real-life patient worked to build students' confidence and consolidate their skills. Evidence for the effectiveness of practicing on students/actors compared to mannequins is mixed depending on the level of fidelity in clinical skills sessions (Bultas et al., 2014; Ignacio et al., 2015). The use of actors, however, has been shown to provide a more authentic experience, particularly for practicing communication skills (Webster, 2014). The mechanisms through which incremental learning assists students' skill development (e.g., via increased fidelity) require exploration. In addition to contributing to incremental learning, practising on fellow students helped students, particularly those in the role of the patient, to understand the importance of fundamental care to patients' experiences, prompting them to deliver such care on clinical placement.

Students argued it was difficult to integrate psychomotor skills and physical fundamentals of care with psychosocial and relational fundamentals. Previous research has highlighted similar trends, with students even at second- and third-year finding it difficult to integrate communication and psychomotor skills (Kneebone et al., 2002). Whilst there is limited evidence on how to teach concomitant psychomotor and fundamental care skills, Nicholls et al. (2018) argued that psychomotor and communication skills be taught separately to avoid



cognitive overload. They suggested psychomotor skills be taught first, enabling students to develop solid understanding of the skills and the likely sensory elements patients will experience. As students become proficient in psychomotor skills, and the burden on their working memory lessens, they can practice the communication skills required to describe to patients the steps involved in different psychomotor skills and what patients will likely feel or hear (Nicholls et al., 2018). Students in our study appeared to learn in a similar manner; psychomotor skills and physical fundamentals of care were seen as the foundation over which skills to address patients' psychosocial and relational fundamental care needs were built. Further research is required to explore whether this is an effective learning pathway for fundamental care.

Based on the study findings, suggestions for teaching fundamental care in a more explicit manner to first-year pre-registration nursing students can be made (see Box 1).

Box 1. Suggestions for teaching fundamental care to pre-registration nursing students

1. Articulate, discuss and reinforce fundamental care in lecture content, clinical skills sessions and structured debriefs
2. Use terminology relating to fundamental care consistently and repeatedly
3. Enable students to experience being in the role of the patient and encourage them to imagine themselves as a patient in a given clinical scenario
4. Enable students to practice on mannequins, fellow students and actors before embarking on clinical placement

***4.3 Limitations, strengths and implementing the intervention on a wider scale***

There were some limitations to this pilot, which the team will work to overcome before implementing the intervention on a wider scale. There was a low response rate to the survey, pre and post-intervention. Few students completed the survey on the first day of the teaching year; hence, the pre-measure cut-off point was extended to allow students to complete the survey during the first teaching week. Students might therefore have been exposed to parts of the intervention (e.g., Fundamentals of Care Framework) prior to completing the pre-measure, limiting our ability to detect a change. In the larger-scale implementation of the intervention we will explore whether embedding measurement into the intervention (e.g., providing students time during lectures to complete the survey) provides for a better pre-intervention measure and increases the response rate.

Choosing a pre-post measure to evaluate the intervention was challenging. Few validated fundamental care scales exist. Those that do typically measure missed care (care left undone) in clinical settings (e.g., MISSCARE, Kalisch and Williams, 2009), and do not provide useful pre-post measures, particularly for first-year students. A limitation of the survey in this study is the use of 'correct responses' and what this implies; that is, whether an incorrect response means the patient does not require that fundamental need to be addressed. By their nature, all fundamentals, in some way, are relevant to all patients. Furthermore, only educators and researchers (not patients) identified correct responses, and the list of fundamentals (Table 1) was heavily weighted towards the physical. We will explore the impact of expanding the list and using different response options, such as asking students to rate the relevance of different fundamentals, or how they might prioritise the delivery of the fundamentals, for a given scenario. We will also explore alternate evaluation methods, including observing how students deliver care (e.g., through simulation-based assessment), and the viability of using a control group.

The intervention's duration was six weeks due to the timing of clinical placement. To implement the intervention over an entire nursing program we must incorporate clinical placement into the intervention. This will require involving clinical lecturers who oversee students whilst on placement, ensuring they reinforce for students the importance of fundamental care. Incorporating clinical placement into the intervention will also generate evidence of the impact of such placement on student's University-based education, and more specifically how role modelling in the clinical environment might enhance or derail this education. To implement the intervention over an entire nursing program we must also understand how to teach fundamental care beyond the first-year level. This will involve embedding a greater focus on the care context (the outer dimension of the Fundamentals of Care Framework) into the intervention, and devising teaching methods that challenge students to integrate the fundamentals in all aspects of care delivery.

This study has a number of strengths. The evaluation, using different data collection techniques, has provided much-needed evidence to understand how students learn fundamental care and to develop more refined education interventions for such care. The intervention's pragmatic design facilitates implementation at different educational institutions, contributing to the development of a robust evidence base for fundamental care education.

#### ***4.4 Broader study implications***

The study findings show there is a clear need to re-consider how fundamental care is taught at the pre-registration level; the effort required to re-design the curriculum and implement the intervention to ensure an explicit focus on fundamental care shows that fundamental care can

indeed become invisible in nursing education. The study findings also suggest that some nursing students might initially devalue fundamental care, regarding it as common sense and questioning to what extent it should be emphasised in the curriculum compared to other aspects of nursing practice. The perceived 'common sense' or 'innate' nature of many nursing concepts (e.g., empathy) has long been debated in the literature (Richardson et al., 2015) and is not necessarily unique to fundamental care. Whilst an in-depth exploration of this perception is beyond the scope of this paper, it is worth noting that students' perception was not readily supported by their experiences. For instance, students recounted instances where they had forgotten to deliver fundamental care, demonstrating they were not necessarily providing such care automatically. Future research should explore why students might perceive fundamental care as 'common sense' or 'innate' (e.g., whether it is a consequence of, or contributor to, the relative invisibility of fundamental care in healthcare systems) and the impact of this perception on patient care.

The findings reported on here contribute to a small but growing body of research on fundamental care education. Other research that is beginning to emerge focuses broadly on students perceptions and experiences of existing nursing curricula (Huisman et al., Forthcoming) and on their ability to identify patients' fundamental care needs (Jangland et al., Forthcoming). Our study builds on this work by demonstrating more specifically *how* fundamental care can be taught to first-year students and what we can reasonably expect students at this level to understand and apply. For instance, whilst students found it difficult to integrate different care needs in practice, they appeared to understand, conceptually, the importance of this integration to patients' experiences. At the first-year level, then, it might be too much to expect students to seamlessly integrate fundamental care with other clinical skills. Future research is required to understand at what point students can be expected to

provide care in an integrated manner and how nursing curricula should best be designed to match students' developmental trajectory.

The most crucial finding from this study is the importance of teaching fundamental care early and explicitly. Our intervention represents one method of how this might be achieved. Whilst the intervention shows promise, as outlined in the introduction, there are a number of issues hampering fundamental care education, research, practice and policy that need addressing. Educational interventions on their own are insufficient to initiate and sustain real change; students must work in systems that support their learning. Pilot interventions such as the one reported on here can provide much-needed empirical evidence on how to explicitly embed fundamental care in healthcare systems, including in clinical practice. In turn, a more explicit focus on fundamental care in clinical practice can positively impact nursing curricula, challenging educators to ensure nursing education equips students with the skills to provide the high-quality fundamental care expected of them in the clinical environment. Together, this work will contribute further to the re-conceptualisation, re-prioritisation and re-valuing fundamental care.

## **5. Conclusion**

This paper has generated much-needed discussion and evidence on how to teach fundamental care at pre-registration level. Students reported difficulties in articulating the fundamentals and integrating them with psychomotor skills, whilst simultaneously and paradoxically, perceiving such care as common sense, therefore demonstrating the importance of embedding fundamental care in nursing curricula early, explicitly, and consistently. The findings suggest that this teaching can be made explicit and consistent through a conceptual framework,

consistent terminology, incremental learning in clinical skills sessions, structured debriefs, and opportunities for students to take on the role of patient. Future research should investigate ways to ensure sustainability of the intervention across a nursing program, and to better measure the intervention's effectiveness.

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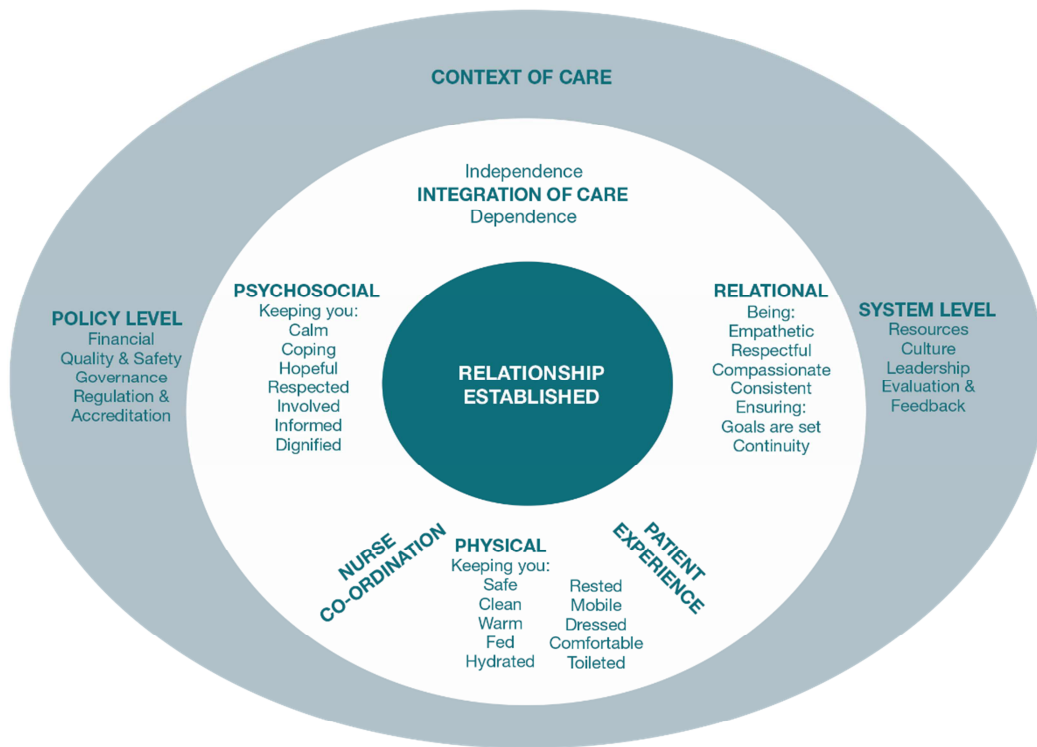
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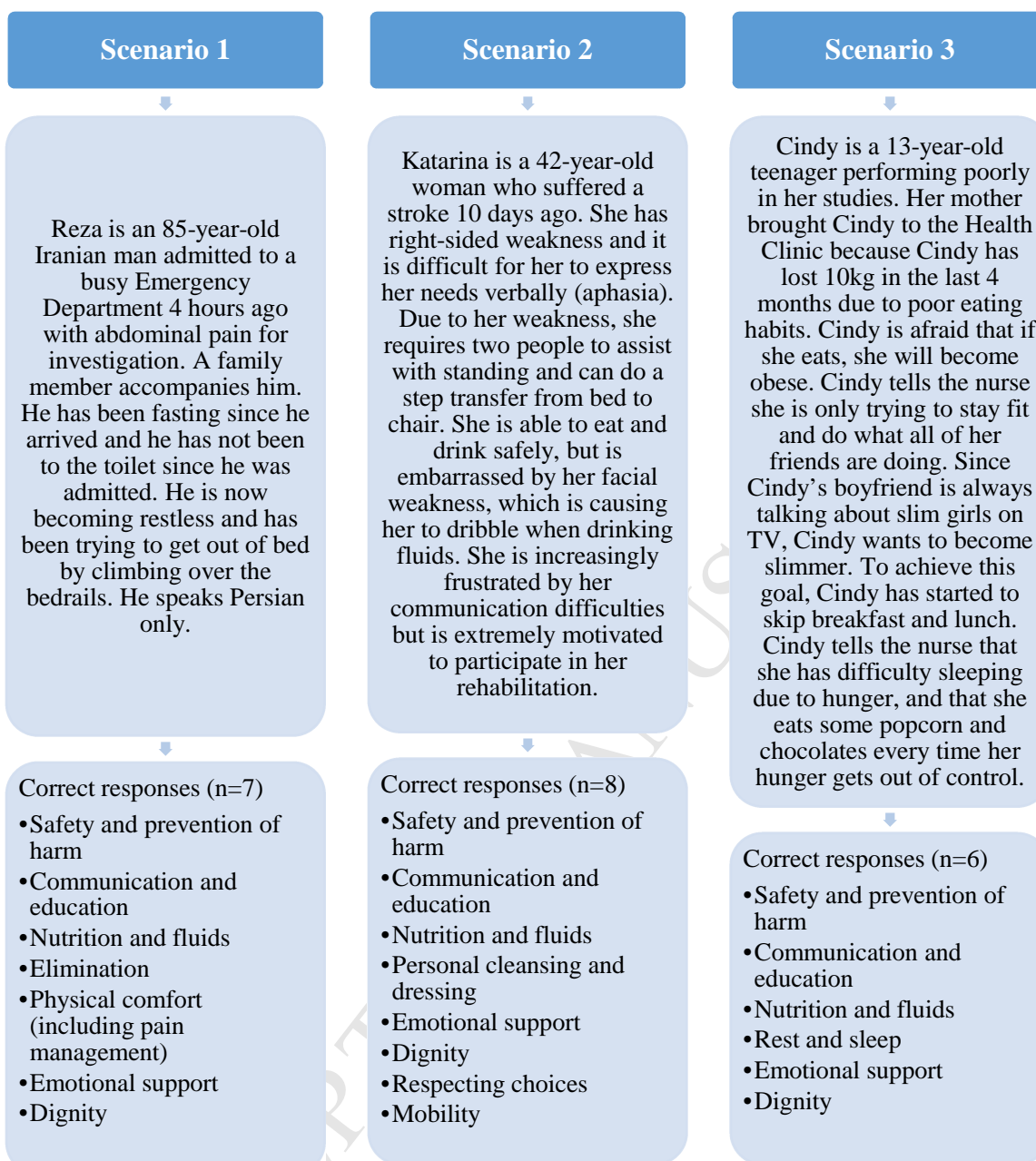
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**Highlights**

- Fundamental care is often inadequately taught to pre-registration nursing students
- A pilot educational intervention was implemented at an Australian University
- The pilot incorporated into the curriculum a more explicit focus on fundamental care
- Experiencing being the 'patient' was crucial for student learning
- A challenge remains how to measure the impact of such educational interventions

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