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PBL: Pedagogy, Partnership and Information Literacy



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In 2016, Stony Brook University, School of Nursing, in collaboration with Stony Brook Medicine, participated in a strategic planning process resulting in the identification of two major areas of strength. The first strength is success in scholastic endeavors associated with distance education and the second strength is our distinction in areas related to clinical practice. Taking these two elements into consideration, our School made a strategic decision to embark on a mobile learning initiative that would embed clinical expertise into an educational platform that leveraged cutting edge technology to increase academic success. This objective soon took form as a School initiative to become an Apple Distinguished School. This project is now affectionately known as, "March to Apple". The School aimed to

- Update the learner management system to an application that allows for innovation and creativity
- Seek current and specialized software to enhance current teaching-learning practices and increase the quality and depth of the educational environment

Faculty participation over a two years aimed to 'Create transformational educators', who would become 'Deeply engaged with technology and student engagement' and would become 'Experts on integrating technology into learning environments'. Inherent in involvement with the project was a willingness to demonstrate best practice and a commitment to collecting evidence of student success with learning outcomes.

As part of our "March to Apple", beginning in 2018 each undergraduate, graduate and doctoral student at the School of Nursing's orientation now receives an iPad. This mobile device is utilized as a learning tool throughout the student's academic experience. Mobile technology is part of the daily lives of all College Students and also of many of the people for whom they provide care. According to a 2016 Educause Report, 83 percent of adults between the ages of 18 and 29 own a smart phone and nearly 47 percent own a tablet. Health service providers in

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teract with the consumers using a range of information technology. This technology has changed the manner in which students communicate, gather information, analyze data and eventually learn. Establishing patterns of behavior enhances the likelihood of information fluency and lifelong learning. Additionally, mobile technology can record raw observations, breakdown geographic boundaries and provide for access regardless of time. This ever changing mobile landscape has provided for new opportunities to enrich the academic experience for students, faculty members and support staff.

Faculty development became a key factor in implementing this project. This is a commitment made by the School to assure that the “March to Apple” is a success. Building a community of academic expertise that focuses on technology as an adjunct to learning activities is not to be minimized. Serious college Professors today need to stay current and well-informed of existing and changing technologies. Faculty have found that as technology advances, their ability to grow as educators has multiplied. Innovation and creativity abound in classrooms, whether physical or virtual, when a Faculty member utilizes technology as a catalyst to create curiosity and to inspire future nurses. Health professionals (both educators and clinicians) need to accept that knowledge becomes rapidly outdated but also that the ability to question the worthiness of sources of information is critical to outcomes for patients, clinicians and educators.

The “March to Apple” is a dynamic journey! Each phase brings

conquered milestones as well as new challenges to the School. However, the School’s strategic goal “to strengthen the School’s technology infrastructure to ensure accessibility, and support excellence in the academic enterprise by delivering new and expanded technologies” is being realized each and every day. It is a pleasure to bear witness to that! However all academics embracing technology also need to be mindful of its use in fostering deeper learning emerging from sound pedagogy and well structured instructional and curriculum design (Park et al 2016). Graduate learning outcomes need to include technological abilities but also an ability to fully appreciate the relevance of information to the situations that demand professional judgment and decisions about care.

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The Effects of a *havruta* Method on the Self-directed Learning and Learning Motivation

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Purpose: This study aims to verify the effects of a *havruta* class on the self-directed learning and motivation for learning of college physical therapy students.

Methods: A descriptive study of the use of the *havruta* approach to learning and teaching. The subjects were 95 students of College A who had registered for musculoskeletal examination, assessment and practice in the second semester of 2018. The *havruta* method was applied for students for one semester, after which a paired t-test was performed to compare the dependent variables (self-directed learning and learning motivation).

Results: There were significant differences in self-directed learning (learning plan, execution and evaluation) and learning motivation (attention, relevance, confidence, and satisfaction).

Conclusion: These results suggest that the *havruta* approach to learning improves self-directed and motivation for learning. A follow-up study is necessary to further investigate the application of *havruta* in relation to evidence of sound inquiry processes within approaches to learning.

Keywords: Havruta; Self-directed learning; Learning motivation

Original Article

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INTRODUCTION

The world has entered the age of biotechnology and artificial intelligence, and encouraging students to test the value of information and knowledge ie to become information fluent, is becoming more important. The education system is also changing in order to adapt to the times. As a part of this, the cultivation of creative talent is a core goal of many nation states, and Israel's Jewish education methods are attracting attention; *havruta* (or chavrusa) is one such method (Oh, 2014).

Havruta (or chavrusa) is a traditional Jewish way of learning that involves understanding and solving problems through dialogue between people using interaction processes, sometimes in pairs talking, discussing, and debating with each other (Kent & Allison, 2012). *Havluta*, studying with a critical friend, is justified as Talmud said because often, "There is more to learn from a friend than to learn from a teacher..." (Jeon, 2015).

The American Behavioral Science Research Institute (2013) studied the rate of memory formation in the brain 24 hours after studying in various ways. The results were as follows: Lecture explanations: 5%; reading: 10%; audiovisual: 20%; demonstration: 30%. On the other hand better results arose from discussions: 50%; direct practice: 75%; and teaching: 90% (Havruta Class Research Society, 2013). In order to get the same effects, taking personal responsibility by studying for one hour using a critical friend method (as with *havruta*), is claimed to be more efficient than traditional lecture-based teaching (Jeon, 2016).

Havruta begins after the teacher selects a text; the learning activity includes three phases:

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first, one partner reads aloud while the other listens carefully; often the text is reread multiple times in accordance with reading norms. Second, the participants take turns articulating the explicit and implicit meanings of the text. Third, one challenges their partner to think more deeply (Shargel & Laster, 2016).

The merit of a *havruta* class is that by asking questions and having discussions, one can stimulate the brain; *havruta* learning requires different ways of thinking and exploring the thoughts of others, so it leads to more varied and creative thoughts. *Havruta* is a form of self-directed learning (SDL) because students must take responsibility to learn, find additional materials, and engage in independent thinking in order to prepare for the discussion. In addition, because *havruta* involves discussion, it develops students' abilities to communicate, listen and persuade others of their views (Jeon, 2016).

The previous domestic studies on *havruta* classes focused on students in elementary school classes in various subjects, such as mathematics (Kang, 2017; Shim, 2017; Jeon, 2016), science (Kwak, 2017; Jang, 2015), and English (Kang, 2017). There have not been many studies on middle school (Kim, 2018; Lee, 2017), or high school students (Kang & Cho, 2017; Shin, 2016; Yun, 2016). Research on the application of *havruta* to learning activities in college classes has been limited in Korea, with the exception of studies on online discussions (Joung & Choi, 2015) and psychology classes (Go, Min, & Song, 2017). This study aims to verify the effects of a *havruta* class on SDL and learning motivation of college physical therapy students.

METHODOLOGY

Design, setting and participants

The researchers utilized a descriptive pretest-posttest study design with a single group of students ($n=95$) from College A in Gyeongbuk province undertaking one subject within a physical therapy program. The dependent variables for this study were self-directed learning and learning motivation for students involved with the first-grade topic, musculoskeletal examination and assessment, and practice. The subject entails learning the basics of measuring the joint's range of motion and muscle testing in physical therapy.

The *havruta* method was applied to students for one semester; actual classes involved 21 hours-3 hours per week for 7 out of 15 weeks. A paired t-test was performed to compare the dependent variables before and after the class. This study was approved by the Sahmyook University's institutional review board (IRB 2-7001793-AB-N-012018126HR). All subjects signed a written informed consent form prior to participation.

Instructional design

Havruta is all about encouraging student interactions: Talking, asking, and discussing issues in class. Jeon (2015) divided the technique into five different options:

Question-centered

Table 1 provides an overview of the sequence of activity. The teacher must adjust the number of questions according to the student's academic level.

Argument-centered

Table 2 provides details where a controversial topic is put up for discussion.

Comparison-centered

Table 3 describes the method of investigation where a topic is chosen for comparison and questions are prepared in class; the approach stimulates debate and deeper thought.

Teaching friends

Collaborative learning with a friend involves two students at an equivalent level, expressing their appreciation of knowledge and

Table 1. Question-centered *havruta*

Procedure	Description
Asking a question	Reading a textbook and then asking a question
Pair discussion	Sorting questions by type; discussion between two people
	Picking the best question
Group discussion	Discussion by group about the best questions
	Picking the best question and discussing/ organizing contents of the discussion
Presentation	Presentation by each group
Whole class discussion	Teacher holds discussion with students

Table 2. Argument-centered *havruta*

Procedure	Description
Researching the topics	Setting a topic/ deciding for and against/ investigating one's position
Pair controversy	Controversy is generated by pairing two people with different positions
	Determining your partner's position through debate with your partner
Group controversy	Explaining each position and discussing as a group
	Organizing one's position and the grounds for one's position
Presentation	Presenting the group's position and grounds
Whole class discussion	Teacher holds discussion with students

Table 3. Comparison-centered *havruta*

Procedure	Description
Setting up	Setting up comparison subjects
Investigating and posing questions	Thoroughly investigating the comparison
Pair discussion	Asking questions Ordering questions by dividing them into progress and meta
Group discussion	Discussing one-on-one/ picking one to three good questions Discussing the selected question in a group of four to six people
Presentation	Picking the best question and having an intense discussion Presenting good questions and discussion around content
Whole class discussion	Teacher holds a discussion with students

Table 4. Teaching friends

Procedure	Description
Studying content	Divide the range of textbooks into two Study each part thoroughly
Teaching a friend	One friend teaches the other first
Asking questions while learning	A friend asks keen questions while learning
Changing positions	Changing your position and teaching others Keenly asking questions while learning
Questions that I do understand	Discussion with each other and organizing questions that are not understood
Whole class discussion	Teacher holds a discussion with students

Table 5. Posing a question

Procedure	Description
Posing a question	Thorough study of the range of textbooks Forming questions such as multiple choice and short-answer questions
Refining question with a partner	Discussing and refining the question in pairs
Refining question with a group	Choosing a good question with your partner Refining question through group discussion and choosing a good question
Question presentation	Organizing intentions to present selected questions
Whole class discussion	Presenting question and intentions Teacher holds discussion with students

concepts and learning from each other; one student hears the explanation but can ask questions while continuing to listen. The details are shown in [Table 4](#).

Asking questions

Asking questions involves formulating a question about material from a prescribed text, then refining the question through discussion in pairs, further refining the discussion in groups, and then having the teacher discuss the question with the whole class. The details are shown in [Table 5](#).

The chosen instructional design and learning activities appropriate to the study's subject objectives were 'question-centered', 'comparison-centered', and 'teaching friend' options. This study applied "understanding of the record of evaluation" through comparison-centered *havruta* in the first session, and applied "explanation of subjective information, objective information, assessment, plan (SOAP note)" through question-centered. [Table 6](#) provides the details.

Instruments

Self-directed learning

The self-directed learning (SDL) scale for college students proposed by [Lee et al. \(2003\)](#) was used. It consisted of 45 items including 3 ability factors and 8 sub-factors. A score of 1 indicated that SDL was lower, and a score of 5 meant it was higher.

The subscale items of SDL used in this study are shown in [Table 7](#). The reliability of this study, determined using Cronbach's alpha, was $\alpha = .887$.

Learning motivation

A modified form of the learning motivation test tool developed by [Keller \(1987\)](#) was used. The questionnaire consisted of 34 items where levels of agreement ranged from "strongly disagree" (1) to "strongly agree" (5). The minimum score was 34, maximum 170, with the average score 102. The minimum, maximum, and average scores for each subscale could be different because of the different number of subcategories. The subscale items are shown in [Table 8](#). The reliability of this study was determined to be $\alpha = .887$.

Statistical analysis

All statistical analyses were performed using SPSS version 21.0, and descriptive statistics were applied to demographics data. Internal consistency and reliability were determined using Cronbach's alpha, and a paired sample t-test was used for the assessment of the differences between the pre- and post-test sessions. The significance threshold was set to $p < 0.05$.

RESULTS

The comparative results on SDL after the *havruta* class are

Table 6. Instructional design and activities

Week	Topics	Learning contents by week	
		Contents	Activities (<i>havruta</i> method)
1	Understanding assessment	-You can understand the record of evaluation	Comparison-centered
2		-You can explain the SOAP note	Question-centered
3			
4		-You can explain the ICF	Question-centered
5	Measuring the range of joint motion	-You can understand the kinds of range of joint motion	Comparison-centered
6		- You can understand the testing method of the range of joint motion	Teaching friends
7			

Table 7. Cronbach's alpha for SDL (N=95)

Subscale	Item contents	Item number	Total Cronbach's alpha
Learning plan	Diagnosing learning needs	1,2,3*,4*,5,6,7,8,9,10	.831
	Goal setting	11,12,13,14,15	
	Identify resources for learning	16,17,18,19,20	
Learning execution	Basic self-management ability	21,22,23,24,25*	.687
	Choosing a learning strategy	26,27,28,29,30	
Learning evaluation	Continuity of learning execution	31,32*,33,34*,35*	.72
	Effort attributed to results	36,37*,38,39,40*	
	Self-reflection	41,42,43,44,45	
Total			.887

*Negative scoring item

Table 8. Cronbach's alpha for learning motivation (N=95)

Subscale	Item number	Total Cronbach's alpha
Attention	1,4*,10,15,21,24,26*,29	0.653
Relevance	3,6*,9,11*,17*,27,30,34	0.611
Confidence	2,5,8*,13,20,22,23,25*,28	0.715
Satisfaction	7*,12,14,16,18,19,31*,32,33	0.721
Total		0.887

*Negative scoring item

shown in [Table 9](#). The score for total SDL showed significant differences ($p = .000$). The subscales of SDL showed significant differences (learning plan: $p = .000$, learning execution: $p = .001$, learning evaluation: $p = .000$), but no significant differences were observed in goal setting ($p = .056$) and basic self-management ability ($p = .118$).

The comparative results on learning motivation after participation in the *havruta* class are shown in [Table 10](#). Overall learning motivation showed significant differences ($p = .000$) as did the elements of learning motivation: Attention, relevance, confidence, satisfaction all with significant differences ($p = .000$).

DISCUSSION

Havruta, also spelled *chavruta*, is an Aramaic word meaning “friendship” or “companionship” ([Liebersohn & Aharon, 2006](#)). In Orthodox Judaism, a *havruta* always refers to two students learning one on one. When three or more students learn together, they are also called a *havruta*. The Judaism Reform expanded the idea of a *havruta* to include two, three, four or even five individuals studying together ([Moskowitz & Rabbi, 2011](#)).

[Kent et al's \(2012\)](#) study results showed that reading text and, discussing and interpreting it with others was a key to success; in many situations, it was possible for learners of many ages to complete complex exercises. The basic structure of the teaching method based on *havruta* was summarized as three elements: Stance, structure, and execution. [Figure 1](#) shows the domains of *havruta*-inspired pedagogy and illustrates their overlapping nature. Structure refers to the design components the setup for learning. Teachers can explore the many design details of the structure that can support and facilitate learning. *Havruta* proponents emphasise the notion that attitudes and beliefs can profoundly affect the nature of the educational setting, especially relationships among the resources – the teachers, learners, and the text. The nature of the conversations that occur in the *havruta*

Table 9. Comparison of self-directed learning before and after the *havruta* class (N=95)

Variables	Pre-test	Post-test	Mean difference	t(p)
Self-directed learning	2.72±.35	2.94±.23	.22±.43	-4.953(.000)
Learning plan	2.80±.42	3.04±.31	.25±.53	-4.519(.000)
Diagnosing learning needs	2.75±.42	2.98±.24	.23±.46	-4.849(.000)
Goal setting	2.90±.67	3.08±.61	.18±.90	-1.934(.056)
Identify resources for learning	2.77±.61	3.13±.83	.35±1.07	-3.194(.002)
Learning execution	2.64±.37	2.82±.33	.18±.51	-3.417(.001)
Basic self-management ability	2.56±.48	2.71±.73	.15±.94	-1.577(.118)
Choosing a learning strategy	2.64±.52	2.84±.47	.19±.67	-2.820(.006)
Continuity of learning execution	2.72±.43	2.91±.35	.20±.58	-3.271(.002)
Learning evaluation	2.70±.45	2.92±.32	.21±.53	-3.938(.000)
Effort attributed to results	2.74±.47	2.95±.37	.21±.62	-3.318(.001)
Self-reflection	2.67±.65	2.88±.45	.22±.73	-2.917(.004)

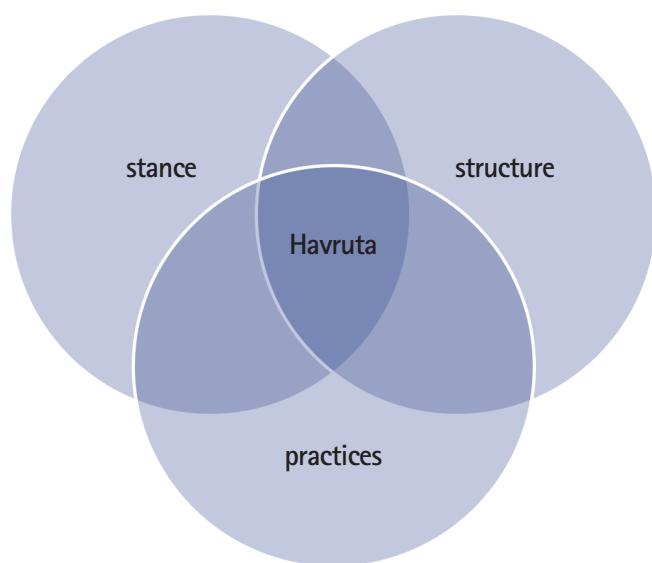
Table 10. Comparison of learning motivation before and after the *havruta* class (N=95)

Variables	Pre-test	Post-test	Mean difference	t(p)
Learning motivation	2.55±.36	2.85±.25	.29±.41	-6.908(.000)
Attention	2.59±.40	2.91±.36	.32±.55	-5.695(.000)
Relevance	2.46±.39	2.78±.29	.32±.47	-6.779(.000)
Confidence	2.39±.45	2.66±.31	.27±.53	-5.056(.000)
Satisfaction	2.76±.43	3.02±.33	.26±.52	-4.886(.000)

approach is critical. The six *havruta* practices – listening, articulating, wondering, focusing, supporting, and challenging - can help learners interpret texts together and can cultivate intellectual and relational skills in the process (Kent & Cook, 2012).

In the twenty-first century, passively learning monolithic content in a uniform way is not appropriate; SDL ability as an outcome of learning is essential (Lee et al., 2003). SDL is a concept that illustrate that learners themselves are actively participating in learning and showing goal-oriented behavior. This is a process in which the learner himself/herself takes the initiative in learning, diagnoses his/her learning needs, sets learning goals, selects and executes appropriate learning strategies, and evaluates the self-achieved learning outcomes (Yang, 2000).

Yang (2018) investigated the effect of participation based *havruta* classes on SDL competence in learning events focused on morals. The results showed the percentage of respondents who valued learning and felt enthusiastic about it increased from 27% to 40%. In addition, the percentage of students who responded that they were setting up a learning plan to engage with the learning objectives increased from 21% to 29%. There were significant differences in SDL (involving developing a learning plan, execution, and evaluation). This finding suggests that the *havruta* technique helped students improve their ability to think

**Figure 1.** *Havruta*-inspired pedagogical framework

and learn through a process involving answering and asking questions, formulation of direct questions, and selection of good questions; this suggests that the learning processes contributed to increasing their self-direction in learning ability.

Woolfolk (1988) reported that when learning activities are perceived as valuable to the learner, motivation is increased; one has a tendency to try to study hard. **Brophy (1998)** suggested that motivation reflects a tendency to perceive learning activities as meaningful and valuable and thus students are more likely to achieve the intended learning goals.

Kwak (2017) showed that *havruta* elementary science class participants demonstrated a statistically significant level of motivation toward learning (attention, relevance, confidence, and satisfaction) ($p = .004$). This finding suggests that a *havruta* class fosters interest in the process of questioning and responding to colleagues as an autonomous or self-directed learner.

CONCLUSION

This study examined the *havruta* approach, and analysis of pre and post-test results showed improvements in self-directed learning and learning motivation. Therefore, it is suggested that the approach has application to a broader range of subjects. The approach to learning and teaching encouraged more active learning; the students took more responsibility for their own learning. By focusing on allowing greater student autonomy, the teacher became more facilitative of the learning processes.

The study has several limitations. First, the subjects were physical therapy students, and there were not many subjects from which to generalize findings. Second, there was no control subject in this study. A follow-up study is needed to make a comparison between traditional teaching/learning activities and the more student-focussed and active *havruta* learning and teaching method. Third, the *havruta* class took the form of a conversation in which two people read a textbook and exchanged questions. Through communication between two people, they went through a process of speaking and explaining their thoughts. However, because the students were accustomed to the traditional lecture culture that does not leave much room for questions, the dialogue between the two people may have been awkward and unsustainable. Therefore, teaching and learning materials should be developed to provide more stimulating or engaging opportunities for collaborative and communicative activities. The paradigm shift towards greater access to and use of technology also suggests the need for studies on ways to conduct learning events in more blended modes of delivery, including studying online. The world of work today is heavily reliant on technological competence.

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Developing Criteria for the Selection of Contemporary Stimulus Material in Mental Health Nursing Education: Engaging Students and Meeting Curriculum Goals – Part 1: Critical Analysis of Simulation and Stimulus Material in Mental Health Nursing Education

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Purpose: By focussing on curricula reliant on blended (online and face-to-face) learning, to test the value of mental health stimulus material created/used by Australians in an Australian context to achieve learning outcomes through assessment tasks for students from a range of cultural backgrounds. Can we find stimulus material that facilitators can use with diverse cultures?

Methods: Case studies centred on two groups of students – Australian (Part 1) and international (Part 2).

Results: An analysis of simulation and stimulus material in mental health nursing education (Part 1) and the development of i) a set of principles for choosing 'authentic' stimulus material ii) a set of recommendations for choices of assessment tasks that ensure application of the principles irrespective of the culture and context in which graduates choose to work (Part 2).

Conclusion: While there are many types of stimulus material available today, authentic stories from clinical practice may also have a useful role in mental health nursing curricula.

Keywords: Psychiatric/mental health nursing; Education

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INTRODUCTION

"PBL (Problem Based Learning) is an educational approach that has the potential to foster the construction of meaning and deeper learning: it is a 'hallmark' of curriculum design for the health professions" (Park, Conway & McMillan, 2016) and has a philosophical and methodological basis. Models of PBL have developed significantly so that there is now greater focus on many different types of stimulus materials linked to stronger preparation for practice and offered with structured debriefing (Conway & McMillan, 2010). The success of PBL is dependent on the quality, authenticity and applicability of the teaching materials used and Part 2 of this paper will focus on the development of a set of principles for choosing 'authentic' stimulus material for the mental health nursing context.

We will first describe the context of care before considering the educational context. Graduate employment rates are high for health professionals in Australia, and in 2015 aged care received the greatest numbers of nurses and midwives, and hospital (excluding outpatients) was

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their principal work setting ([AIHW, 2016b](#)). Even when the nurse is not in a mental health setting, integrated care requires mental health nursing skills. Integrated health services delivery is defined by the World Health Organization Regional Office for Europe as

an approach to strengthen people-centred health systems through the promotion of the comprehensive delivery of quality services across the life-course ([WHO, 2016](#)).

Mental health conditions were the second most common chronic illness in Australia (after cardiovascular disease) in the years 2014-2015 ([Australian Institute of Health and Welfare, 2016a](#)). Nurses themselves may also have mental health problems ([Joyce et al., 2012](#)).

This paper will look at the importance of equipping students with the mental health skills required for practice by using authentic clinical anecdotes from actual clinical settings.

One of the greatest challenges for those responsible for curriculum implementation is how to access, manage and be assured of quality in clinical placements, experience, clinical teaching and the learners' responses to settings and clientele ([Park et al., 2016](#)). How students are assessed on their learning then becomes crucial. There may be a need in implementing a new curriculum "to challenge existing long held ideals, practices, and sacred cows within the health and higher education sectors" ([Watters, Rochester & McMillan, 2012](#)). This includes a distinguishing feature of PBL, ie critical examination of the stimulus material used in teaching, simulation and assessment.

Nursing clinical placements have become harder to establish and organise, and simulation, while not a substitute for clinical placement, may be a useful adjunct. There are many types of simulation in current use and simulation may be supported by online learning. Universities are an integral part of the society surrounding them and must play a critical role in the development of that society ([McIntyre, 2014](#)). As reliance on digital technology increases throughout society, tertiary education too must adapt and change.

Simulation

Simulation is defined as the artificial representation of a phenomenon or activity that allows participants to experience a realistic situation without real-world risks ([Larew et al., 2006](#)). A concept analysis of simulation provided this definition:

"A dynamic process involving the creation of a hypothetical opportunity that incorporates an authentic representation of reality, facilitates active student engagement and integrates the complexities of practical and theoretical learning with opportunity for repetition, feedback, evaluation and reflection" ([Bland, Topping & Wood, 2011](#)).

The Australian Nursing and Midwifery Accreditation Council (ANMAC) proposes to adopt the simulation definition given by [Gaba \(2004\)](#) - "Simulation is a technique, not a technology, to replace or amplify real experiences with guided experiences that evoke or replicate substantial aspects of the real world in a fully interactive manner". It may include actors, roleplays, software, manikins, task trainers, virtual reality, gaming and case studies with the aim of active learning, creative thinking and higher level problem solving. Simulation allows repeated practice of skills, exposure to unpredictable practice situations, formative and summative assessment, and opportunities to reflect on practice ([ANMAC, 2018](#)). Feedback is essential and students can also reflect on their interactions.

Types of simulation material available

There are a number of types of simulation materials available including web-based simulation, standardised patients, three dimensional (3D) simulation games, involving blended learning as well as patented approaches such as MaskEdTM.

High fidelity web-based simulation can be used to teach undergraduates to recognise the deteriorating patient ([Cooper et al., 2012](#)) and a simulated "live" setting in a laboratory can allow mental health nursing students to increase their ability to recognise physical deterioration in a patient ([Chadwick & Withnell, 2016](#)). High fidelity simulation has been used to teach students how to undertake an alcohol withdrawal assessment following possible deliberate self harm in the ED setting ([Kunst, Mitchell & Johnston, 2017](#)).

Standardised patients (actors) are used to teach nurses communication in various clinical settings, including mental health ([Martin & Chanda, 2016](#)); discharge and transition of care are identified as areas of particular relevance ([MacLean, Kelly, Geddes & Della, 2017](#)).

Three dimensional (3D) simulation games can be used to teach clinical reasoning in nurse education, with authentic patient-related experiences and learning clinical reasoning having a positive relationship, and reflection having a strong relationship with the application of nursing knowledge; usability and exploration are also important ([Koivisto, Haavisto, Niemi, Katajisto & Multisilta 2016](#)). Multimedia resources have been developed for interprofessional education in the quality use of medicines, modules based on actual clinical situations and incident reports ([Levett-Jones, Gilligan, Lapkin & Hoffman, 2012](#)).

Web-based simulation can allow students to immerse themselves in a character role-play but more usually offer a mix of vid-

eo, audio, quiz, graphics, text and memo in a multimedia format. It can be personalised, individualised or made culturally relevant, it can be repeated so is cost-effective and it is accessible provided there is good internet access (Cant & Cooper, 2014).

Some blended learning programs which incorporate simulation such as video-assisted online resources were found in an integrative review by Coyne et al. (2018) to increase students' knowledge and skills but needed to be realistic and culturally appropriate. CaseWorld TM, an online case based simulated learning environment incorporating actual cases with the input of expert clinicians, and the addition of video and audio with input from students as well, provides situational learning, authentic assessment, critical thinking, case-based learning and evidence-based practice. It does not aim to show perfect care but rather to show authenticity in clinical situations and to allow room for debate (Gilham et al., 2015).

An unusual type of simulation called MaskEdTM involves an educator wearing a full latex face mask to play a character with a history in an unscripted and spontaneous interaction with students. The acronym KRS stands for knowledgeable, realistic and spontaneous, and allows the educator to combine the art and science of nursing in a safe environment as well as in debriefing later (Frost & Reid-Searl, 2017).

Mental health consumer consultants worked with academics to produce mp3 files containing content characteristic of voice-hearing experiences for the education of undergraduate nursing student (Orr, Kellehear, Armari, Pearson & Holmes, 2013).

A technique called scenariation provides interactive individualised learning pathways which allows students to make decisions based on clinical presentations and then see the results of their decisions and this is seen as ideal for capturing the complex nature of the real-life workplace. Australian slang was included to assist international students to become familiar with the language they would hear in the Australian setting and a patient with specific cultural needs was included in the scenariation (Smith, Gillham, McCutcheon & Ziaian, 2011).

Moulage or the use of special effects makeup to simulate wounds or illnesses is another technique, but there is no clear evidence that it enhances student engagement (Stokes-Parish, Duivier & Jolly, 2018).

Even compassion can be taught through a self-directed online module (Hofmeyer et al., 2018).

Fidelity vs authenticity

Interpretation of authenticity is highly individual (Bland, Topping & Tobbell, 2014). Knowledge should be translated though

action and in an authentic setting; however, authenticity does not follow fidelity automatically, and authenticity can be achieved with low fidelity (Bland et al. 2011). Fidelity seeks to reproduce object reality as closely as possible whereas authenticity "may be considered as a subjective interpretation/response to a constructed situation in which the student interacts with context, other students, facilitators and technology with varying degrees of fidelity" (Bland, Topping & Tobbell, 2014). Distinguishing between authenticity and fidelity is critical; high fidelity helps replicate a life like clinical situation. There are conceptual tensions between authenticity and fidelity but MaskEdTM may provide both, with the mask achieving some fidelity and the skill of the educator inside the mask providing authenticity (Bland, Topping & Tobbell, 2014).

Engaging students through use of simulation

Perceived value, perceived authenticity, and perceived choice are important factors in how students view simulation (Khaled, Gulikers, Biemans & Mulder, 2015) and whatever stimuli are used, the facilitator needs to be effective in motivating and engaging students.

Students found thinking on their feet and working with a 'real' patient during simulated case studies were the most valuable aspects (Mills et al., 2014). For a student to become "caught up in" a simulation and suspend disbelief, there needs to be fidelity, a fiction contract, psychological safety, emotional buy-in and assigned meaning; these will be influenced by attitudes, previous learning experiences, feeling of presence, personality differences and imagination (Muckler, 2017).

However, transfer of knowledge from simulation to clinical practice cannot be assumed, with students reporting a disconnect between the laboratory and the hospital setting (Nash & Harvey, 2017). Nursing as a practice discipline requires situated cognition and action, and students enjoyed developing critical thinking, integrating theory and practice and reflecting in a debriefing afterwards for a simulation involving an acute surgical patient, although once again in this study, transfer of learning to clinical practice was not demonstrated (Nevin, Neill & Mulkerrins, 2014). Repeating psychomotor and communication skills in various simulated environments increased student confidence and lowered anxiety levels, and student satisfaction increased as the simulated environment became closer to an authentic clinical situation (Terzioglu et al., 2016). For new graduates, simulation helped with relating theory to practice, with problem solving and with critical thinking, as well as seeing the "big picture" of patient care and actively seeking critique of their performance (Thomas & Mraz, 2017).

An Australian study found that mental health simulation can give students an opportunity to link theory to practice and to identify areas of deficiency and also allay their own anxiety about “saying the wrong thing” in a real clinical setting. The simulation was viewed as more useful than videos because it took place in real time, could be altered to fit with current issues and was highly interactive and engaging. “Buy in” was achieved because of realism and the immersive nature of simulation and this achieved “an authentic learning opportunity” (Alexander et al. 2018) which is important because interactions in mental health nursing are unscripted.

For it to be genuine and for you to be empathetic, you need to have a conversation not a checklist because there are no tickboxes in it (FS3 in Alexander et al. 2018).

Similar results were reported in a New Zealand study. Even the most sophisticated manikins cannot be programmed so as to provide authentic simulation of genuine mental health interactions. To be effective the actors who play the clients need to have self-awareness and avoid adding their personal experiences to the agreed roleplay. An effective simulation using an actor helps students to read situations including affect and body language, difficult skills to acquire using only lectures and textbooks (Bartlett & Butson, 2014).

To help students “get past the plastic” when using manikins in a clinical scenario, audio-visual vignettes using trained actors to depict patients from a variety of different cultural and socio-economic backgrounds were used. There was scope for the actors to use some of their own personal experiences in the vignettes to enhance authenticity and manikins and actors wore the same clothes for each role (Power et al., 2016). Many health professional programs now feature on-line learning but challenges around student engagement remain.

Engaging students online through effective teaching

Students in online courses value perceived connection with staff and this may be achieved through a variety of techniques; doing the work and being actively engaged in the course; various methods of content delivery; and course organisation. A flexible approach and feedback including affirmations were also important (Post, Mastel-Smith & Lake, 2017; Price, Whitlatch, Mayer, Burdi & Peacock, 2016). Interestingly, Lonn and Teasley (2009) found that students and teachers valued the communication tools in Learning Management Systems more than they valued all the interactive tools for innovating existing practices.

The Australasian Council on Open, Distance and e-Learning (ACODE) recommends that learning activities are aligned with

the intended learning outcomes (constructive alignment) so that students can develop and finally demonstrate what they have learned (ACODE, 2017). In a field like mental health nursing making this strong alignment is particularly important because some of the concepts in this field are broad and not easily grasped by students new to the field.

A social presence which can be created through audio, video and written interactions contributes to a sense of being part of an online community. “The reported lack of interaction in most online learning environments coupled with the limited use of appropriate technologies are areas that nurse educators should consider as they design their online courses” (Stanley, Serratos, Matthew, Fernandez & Dang, 2018). Microblogging (an online communication using 140 characters) can be used to encourage informal and process-oriented learning, allowing students to become part of a “murmuring community” (Ebner, Lienhardt, Rohs & Meyer, 2010).

Online courses in nursing are increasing but Gazza (2017) notes that little has been done to discover what it is like to teach online, with one informant noting a level of intimacy not present in classroom teaching and another saying they felt even more engaged than in the classroom; however all informants noted the amount of time required and the need to be accessible and available at any time of the week. Another study found that preparation of students for simulation and fidelity of the session could be improved, while pedagogical principles and debriefing were satisfactory (Kable et al., 2018).

Online teachers require emotional intelligence and self-efficacy, concepts which are intertwined and complementary (Ali, Ali & Jones, 2017). Effective online teachers require “presence, interaction, respect, encouragement, and timely interaction” (Frazier, Sullivan, Weatherspoon & Hussey, 2017) and the relationship between them and their students can be seen as a kind of choreographed dance, during which sometimes the teacher leads, and sometimes the student leads. In a study by Smith and Crowe (2017) educators saw an interconnection between student engagement, knowing students and supporting students to meet their own needs, with staff-student relationships being crucial and some face to face meeting important too. Teaching online requires more time than face to face (Sword, 2012).

Simulation-based workshops and experiential learning were identified as the most usual training for educators. Competencies for simulation educators include planning and designing, facilitating in a “safe” environment, expert nursing knowledge, use of evidence-based practice and demonstration of professional identity and professional values. Comportment allows the educator to maintain authenticity in an artificial situation and is made up

of a range of skills ([Topping et al., 2015](#)).

To what extent does the curriculum dictate the design or choice of stimulus material?

Contemporary curriculum documents reflect the requirements of the national regulatory authorities and thus have similarities in expression of graduate outcome statements. Despite differences in nomenclature, most include a focus on nurses as good citizens, tolerant of cultural differences in consumer needs (especially those of Indigenous Australians), information and communication fluency, collaborative and therapeutic practice, informed, evidence/enquiry-based learning and practice, and a professional approach to remaining open to emerging models of care and associated knowledge. Of particular concern to the accreditors of curricula is the extent to which agreed outcomes are assessed. But whatever the philosophical underpinning of a curriculum blueprint, there should be application of theory to simulation-based education. The components of well designed and facilitated PBL include all of the above but particularly enhance students' critical thinking disposition and thus enhance the likelihood of them thinking critically ([Martyn et al., 2014](#); [Kong et al., 2014](#)).

The concept of abilities becomes the organising principle for effective performance as a nurse and this concept needs to integrate higher education and the workplace. 'Abilities' thus encompasses a wide range of knowledge, skills and attributes and has been defined by the Alverno College Faculty as

multidimensional or more specifically, as complex combinations of skills, motivations, self-perceptions, attitudes, values, knowledge and behaviours ([Rogers & Mentkowski 2004](#)).

Effective stimulus material will be strongly linked to the curriculum. The Simulation Cycle ([Bartlett, 2014](#)) allows simulation to be embedded into the curriculum. A literature review conducted by [Brown \(2015\)](#) found that in mental health nursing use of simulation can increase student skills in therapeutic communication, critical thinking, problem solving, decision-making and risk assessment, as well as decreasing anxiety about nursing mental health patients.

Simulation, once viewed as a technology, and then as a technique ([Gaba, 2004](#)) has become a pedagogy and its principles and practices may be summarised by the mnemonic SIMULATION (structured, innovative, magical, unforgettable, learning-focused, aesthetic, transformative, immersive, outcome-focused, needed) ([Levett-Jones & Guinea, 2017](#)).

Simulation needs to be based on a sound pedagogy and demonstrate an increase in critical thinking skills. The Practice-Based

Simulation Model (PBSM) has five elements: Practice situation, simulation, structured learning, inquiry process and assessment, with the goal of the practice situation being authenticity, with pre-and post-concept mapping used to develop critical thinking. However summative assessment is recommended only for final year students, with formative assessment being used until then ([Park et al., 2013](#)).

Instructional design rather than the simulation itself may be crucial to the development of critical thinking ([Park, Conway & McMillan, 2016](#)). What is important is the interface between users, simulator and professional or institutional context.

Students need to understand what the simulation actually simulates and authenticity comes from interactive achievements. Simulation is related to work practice rather than to a game, although there must be rules of irrelevance too. "The design of simulation activities needs to account for the possibilities of participants understanding the specific conditions of the simulation and the work practices that the simulation represents" ([Rystedt & Sjöblom, 2012](#)). Clinical simulation should be scaffolded, i.e. accompanied by sufficient support when skills are first introduced so as to allow learning ([Higginson & Williams, 2018](#)).

A systematic review found that higher fidelity simulation had the potential to increase learning outcomes immediately; however, there was insufficient evidence to demonstrate this effect weeks or months later ([Sherwood & Francis, 2018](#)). Inconsistency in how simulation is evaluated creates challenges in demonstrating its benefits; robust evaluation tools which are linked to professional practice standards need to be developed ([Kunst, Henderson & Johnston, 2018](#)).

Can we find stimulus material which is suitable for all countries and all cultures?

Video clips from YouTube may be used as a substitute for actors; however these may not always be culturally appropriate. A clip made in England by the University of Nottingham showing a young man with psychotic symptoms being interviewed by a psychiatrist includes mention by the young man of "MI5". While this reference to the government Secret Service agency may be familiar and meaningful to British viewers, it would be less meaningful to people from other cultures. Similarly, stories suitable for the Australian context may not be so appropriate educationally for international students.

METHOD - Using authentic clinical anecdotes as culturally appropriate stimulus material

Clinical anecdotes told by nurses experienced in mental health can reveal aspects of the profession not easily discovered in text-

books or through simulation. These anecdotes, that are different from a case study, allow for variety and for the essential “messiness” of real world clinical practice to be investigated by students. They are authentic but may not always have true fidelity as defined above by [Bland, Topping and Tobell \(2014\)](#). Their very unpredictability can provide a rich source of material for understanding the nature of mental health nursing as it is practised. They present the sort of situation that has occurred in the real world of mental health nursing and encourage the student to move from what is already known to what needs to be learned as well. Clinical anecdotes can be selected for their alignment with learning objectives as well as for their cultural appropriateness and can incorporate problem-solving and critical thinking; students can collaborate, taking the sort of team approach to patient care which is the basis of much nursing work in wards today. Their very authenticity, messiness and contextual nature can provide a type of stimulus material which a purpose-written scenario cannot, although as the overview of types of simulation in current use shows, clinical anecdotes are not in common use.

In a project which received Ethics Approval from both the University of Newcastle and the University of New England (H-2016-0269) undergraduate mental health nursing students were presented with three authentic clinical anecdotes (see below) and invited to write their responses to them based on a framework of six questions (What are the consequences of the actions described? What are the intended consequences? What results are beneficial? What results are not beneficial? How could things have been done better? What results were unexpected?). An invitation to participate was made at the Moodle site for the first course, by individual email sent by the Unit Co-ordinator to all students enrolled (the Unit Co-ordinator was not one of the authors) and face to face during intensives and tutorials. Participant information and a link to the three stories and the framework for responses was provided at Moodle; students were advised that clicking on the link implied consent. Approximately 350 students were enrolled in the first course. Their understandings and interpretations of key mental health nursing concepts were sought through their responses to these authentic clinical anecdotes. It was not anticipated that students could come to any harm by reading the stories but information about how to access counselling was provided in the participant information. Students responded at the end of the trimester in 2018 in which they undertook their mental health nursing course. Only two students responded; both were Australian. The framework was used to analyse their responses by comparing the content of what they wrote in their interpretations of the stories. The framework was developed as part of one of the authors' PhD studies ([Treloar, McMillan & Stone, 2015](#)).

[Treloar, McMillan & Stone, 2017](#)). The stories used were selected as they best illustrated work done by mental health nurses at its deepest level ([Treloar, McMillan & Stone, 2017](#)).

All students used Moodle to access lecture notes and course material as well as to read announcements relevant to their study. They submitted their major assignment through Turnitin and undertook an online quiz to complete the compulsory assessments for the course. The off campus students attended a two day “intensive” of lectures and tutorials; the on campus students had weekly lectures and weekly tutorials. All students therefore had some familiarity with an online learning platform so it could be assumed that participating in the survey would not have been challenging for any of them.

RESULTS

The stories were selected as being open to many interpretations and to these interpretations being made by students from different cultural backgrounds. In Story No 1 ([Appendix 1](#)) mindfulness of the breath can be understood not just by Australian students who have learned this technique either as part of a mental health nursing course or for their own personal development; in Story No 2 ([Appendix 2](#)) cultural beliefs about suicide and cultural constraints about nurses showing emotion in front of patients can be rich sources of discussion; and in Story No 3 ([Appendix 3](#)) the idiomatic “the smallest violin in the world playing just for you” might puzzle Australian students as well as students from other countries because the literal meaning of this expression does nothing to suggest what it actually means when used ironically in a context such as the one described in Story No 3.

The focus of one Australian student's response to Story No 1 was on “high risk of suicide” with the comment made about the synchronous breathing as “not really a key aspect of the appointment”; the focus of the response to Story No 2 was “you need to cope”; and the focus of the response to Story No 3 was “small things that may not affect us can affect or tip someone over the edge”. For this student the complexities contained in the first two stories were missed, although understanding was deeper for the third story as this student noted “the patient opening up about her past”.

Another Australian student showed very different responses to the three stories, commenting on Story No 1 that the patient “leaves with no interventions”, on Story No 2 that “it is still described as something secret/hidden” (though this student did not define whether “it” referred to suicide or to a nurse crying in front of a patient's family) and for Story No 3 noting “the turn-

around in hostility to bonding" (thus demonstrating an appreciation of the establishment of a therapeutic relationship). It was not possible to attract participants from other countries during this preliminary phase of the research, although the cohort of students invited to participate included a large number of international students.

CONCLUSION

Students today are likely to be familiar with the online environment and their workplaces demand that they be information fluent in preparation for evidence-based practice and to appropriately manage patient information and co-ordinate care processes. Their clinical education needs to be where possible integrated with key concepts presented in other learning activities and be engaging, relevant and applicable to their future workplaces. It also needs to be linked to learning outcomes and easily assessable based on these outcomes. Well-selected and authentic clinical anecdotes cases incorporated in stimulus material reliant on multi-media can be presented for online discussion, in face-to-face tutorials, and used in both formative and summative assessment tasks that are consistent with the curriculum philosophy and methodology. "Constructivist principles provide a set of guiding principles to help designers and teachers create learner-centered, collaborative environments that support reflective and experiential processes" (Jonassen, Davidson, Collins, Campbell & Haag, 1995). Authentic clinical anecdotes are a good fit with these principles which guide selection criteria around choice of stimulus material and will assist those preparing and implementing learning events including assessment tasks. To students, assessments equate to learning. Students see assessment as the main driving activity of completing a course of study. Well constructed assessment can equate to the best learning stimulus but much of the poorly constructed assessment requires recall of knowledge rather than application to practice. This is the value of the authentic anecdotes as assessment in that it uncovers the student's capacity to apply their understanding.

This overview of the myriad ways in which educators use stimulation and stimulus materials has shown that there is a great deal of creativity applied to the design of teaching material which will stimulate and interest students. Less certain is how this material furthers the objectives of the curriculum or prepares students to meet the challenges posed by the various expressions of mental health settings across a wide range of health contexts.

If "context, construction, collaboration, and conversation" (Jonassen et al., 1995) are the keys to establishing a constructivist learning environment, then using authentic clinical anecdotes

can effectively provide all these. However, the challenges of situating learning materials realistically in a contemporary health environment may mean that students especially those from different cultures miss the ethical complexities posed. They may also miss illustrations of key mental health nursing concepts and skills.

Part 2 will focus on the development of authentic stimulus material and the response of 'international' students to it with a particular emphasis given to ways to ensure all students from local but diverse backgrounds are able to readily adapt to different cultural expectations around societal and professional responses to people experiencing mental illness and distress and other requirements of regulatory and professional bodies in their adopted countries.

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Appendix 1. Story 1

It was in a provincial community health centre in New Zealand where I was working as Mental Health Nurse.

For some weeks a young man with a diagnosis of personality disorder had been presenting for weekly centre-based sessions of about an hour.

They had started subsequent to him having self-harmed enough to warrant a short admission to the local psychiatric unit.

On this particular Monday morning the afterhours staff had been called out to his home over the weekend where he had set up a situation of trying to hang himself.

Part of the deal of him not being readmitted was that he present for this appointment.

Unlike previous sessions he was hostile, silent and not making eye contact.

Because I did not know what to say I said nothing. Nor did he for the entire hour.

What I did notice is that we fell into a rhythm of breathing at the same time. Our inspirations and expirations were concurrent.

Appendix 2. Story 2

In response to a colleague's distress whilst telling his story, I'm reminded of my own tears re a client.

He died by suicide.

He was recovering from a drug-induced psychosis. Beautiful young man, gorgeous family. Employed. Had everything going for him.

His family invited me to his funeral. I went hoping to sneak off

before anyone saw me. This did not happen. I was trapped and overcome by sadness and distressed at this loss.

His family hugged me and thanked me! The tears flowed more.

I had conflicted emotions about crying in front of patients/families and sought supervision. She told me about her own experiences with emotion and the only two other people that she knows have admitted to crying in front of clients' family – both were well-respected psychiatrists. I was validated and normalised.

Appendix 3. Story 3

I was working in a group therapy based voluntary inpatient unit, dealing mostly with patients with non-psychotic mental health issues.

One patient (who had a borderline personality disorder and dissociative disorder) who I had been working with for several weeks was complaining extensively about a minor issue on the unit (something like the water in the shower not being hot enough). I jokingly said, "Here is the smallest violin in the world playing just for you". She became extremely distressed and angry. She then told another staff member that her father, who abused her severely as a child, played a record of violin music when he was abusing her.

I immediately apologised profusely for upsetting her, and we talked about how she felt, and what I had intended. This incident formed a foundation of a very good therapeutic relationship as no man had ever apologised to her before.

Developing Criteria for the Selection of Contemporary Stimulus Material in Mental Health Nursing Education: Engaging Students and Meeting Curriculum Goals – Part 2: 'Authenticity' in Design and Core Values for Stimulus Material for Enquiry-Based Learning in Mental Health Nursing Education

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Purpose: To test the value of mental health stimulus material created/used by Australian academics to achieve learning outcomes through assessment tasks for students from a range of cultural backgrounds.

Methods: Case studies centred on two groups of students—Australian (Part 1) and those enrolled in Australia as international students (Part 2).

Results: The development of i) a set of principles for choosing 'authentic' stimulus material ii) a set of recommendations for choices of assessment tasks that ensure application of the principles irrespective of the culture and context in which graduates choose to work.

Conclusion: Stories taken from authentic clinical practice in mental health can be used in the education of undergraduate mental health nurses in curricula reliant on blended learning provided they are culturally comprehensible and selected according to core values for undergraduate mental health nursing courses and to guidelines for problem-based or enquiry/situation-based learning.

Keywords: Psychiatric/mental health nursing; Education; Cross cultural mental health; Stimulus material

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INTRODUCTION

"When I first began to work in Japan some 15 years ago, I began to realize that there were universal problems and so I thought there were universal solutions. However, over time I have come to think that while there are universal problems in many cases there are only cultural solutions. In our exchange of knowledge, we will not encourage the adoption of any particular solution. Rather we will ask how the unique political, economic and cultural factors of a country might influence the usefulness of any particular solution." (Underwood, 1999).

In Part 1 of this paper, approaches to online teaching and learning were reviewed, along with a summary of different types of simulation and blended (online and face-to face) learning in use today with undergraduates undertaking mental health nursing courses. The possi-

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bility of using authentic stories, clinical anecdotes taken from actual nursing practice in mental health nursing, was explored as one way to involve undergraduate students in real life situations. Responses to a selection of these stories from some Australian students were included.

This paper, Part 2, will look at responses from international students and then discuss ways to link authentic stories from clinical practice with a recommended framework for a curriculum for pre-registration mental health nursing programs and also to provide assessments which are strongly linked to this framework defining learning outcomes.

As Underwood (1999) remarks above there is a temptation to see universal problems in the teaching of mental health nursing regardless of culture or context. The following reflection, written by one of the authors of this paper, mentions the similarities of behavior in patients wherever they are; but also highlights an educational focus on physical care rather than on psychosocial care, and notes that this may makes the use of problem-based learning approaches difficult to implement in the first place, without a shift in educational focus.

As a mental health nurse of more years than I care to remember I am constantly kind of surprised about how familiar the mental health environment is when I visit and teach in China, Japan, Indonesia and Thailand. Even without speaking the language it is clear to see that clients experience the same kinds of emotions and respond with similar behaviours. Where the major contrast lies is in nursing responses to the clients. Stigma about mental health in South East Asia is generally a lot stronger than in the West. As a result, many people spend many years institutionalized and nurses, like the general public, tend to be somewhat wary of those with mental health problems and at a loss as to how to talk to them. Undergraduate education emphasizes physical interventions and there is little emphasis on psychosocial approaches. In my experience students in these countries at both undergraduate and postgraduate level have little experience in problem solving approaches in the classroom, and they may need some input on psychosocial approaches before being introduced to the types of stimulus material we use in the West.

This reflection is supported by comments from a Chinese nurse academic:

When talking about mental health there are many thoughts in my mind. As a nurse, most of us are not clear about how to communicate with patients who have mental health problems. Actually, we do have the course [on] mental health nursing in [our] school, but I don't think it's working. I think there are two reasons. I'm working as a teacher of nursing, every year there will be about one thousand nursing students [who] graduate and most of them will [become] a nurse,

but as far as I know, none of them wants to be a mental health nurse: First, the course of mental health nursing is an elective course; they have a very short class—one hour. Second, as suggested, stigma about mental health in China is a big problem; once someone has mental health problems, even his or her family will feel ashamed... in our language most time the word "psychiatric hospital" was used as a swear word, others will laugh at you if they know that you went there. I think the standard of the diagnoses of mental health illness is confused (Sun Yan Wan Wan, personal communication).

One of the authors of this paper reflected on attitudes to mental health patients in both Korea and in Australia:

Although Korean society has been trying to change in many ways e.g the healthcare system, approaches to mental health appears to be one area where difficulties endure. Mental health issues historically were treated as a curse and a taboo, unlike physical illness. I still remember how I felt when I went on a clinical placement in a mental health unit as a nursing student.

There was 'a lock up system' in place to enter the unit, the nurses' station was locked up and also there was a room where staff could place a patient who was acting out and [where the patient could] be restrained. Although some patients were sharing a room with between 4-6 others, this was common at times regardless of the type of unit. The patients were required to come to the common area in front of the nurses' station and queue up to have their medication. As a student I recall an impression of being scared for those patients, but pretended not to be. When I read their progress notes and histories, it was not uncommon to see the families had hidden the fact that the patient had mental issues or continually denied this. I could also feel the general atmosphere and nurses' attitude towards those patients with mental health issues. This situation had not changed much when I visited another mental health unit in the same province as an academic to supervise students' clinical placement almost 20 years later.

In Australia too, undergraduate students usually gain all their more specialized knowledge of mental health nursing from a single undergraduate unit offered over a semester, and with stigma still being an issue, the clinical speciality is not a popular choice among new graduates (ACMHN, 2018). However the writer of the above reflection noticed some changes in attitudes to mental health patients in Australia:

I have not had an experience of mental health settings in Australia, but in the area where I've been working, the patients and residents in those areas also have mental health issues. Given this, I could see the local nurses (including me) dealt with those people with more open and accepting attitudes than I had experienced back home. I think the difference in approach follows from the values espoused in society and

the general culture of trying to embrace the patients as people with illness rather than associated with a curse or something bad.

A reflection from a Japanese nurse academic made several telling points which support the above and also expand on them.

Japanese people became aware of the surging numbers of mental illness in our society, and certified nurses in mental health have been registered and providing education for health professionals across Japan. However, stigma remains strong.

I asked 3rd-grade nursing students in what speciality they want to work after graduating university for the past 5 years. Only a few, if any, preferred to work in mental health each year.

When Japanese nursing students are among their counterparts from other Asian countries as well as Western countries, Japanese students did not take initiative in group discussions but kept on being passive listeners. It [appeared that this] was not only caused by language problems but also deeply-rooted culture. Therefore, they may require more assistance to benefit fully from interactive education.

When I attended clinical practicum in Australia, I felt that general nurses lack the knowledge and skills of mental health. Also, mental health nurses lack the knowledge and skills of physical health (Mieko Omura, personal communication).

Once again, the reluctance of student nurses to enter the specialist field of mental health nursing is described, although efforts to develop education for the field are also described. Problems of using interactive methods in education are raised, with the reason suggested being not only language difficulties but also unfamiliarity with this style of teaching. The final comment is made about Australian nurses where the author notes a "blinkered" outlook because medical-surgical nurses are not conversant with mental health nursing skills while mental health nurses lack skills in physical assessment, which is disturbing given the growing number of reports about the poor physical health of mental health patients overall (McCloughen, Foster, Huws-Thomas & Delgado, 2012).

Core concepts in mental health nursing education—principles for choosing authentic stimulus material

One of the authors of this paper also considered teaching material and its development, noting the need for the developer of this material to encourage critical thinking with the use of authentic patient experiences. It has been said that the curriculum reflects what faculty are aiming for but the assessment system shows what the students are actually taking away from their classes.

When working in South Korea as an academic we used real cases of patient experiences when developing learning/teaching materials for nursing students. When I developed my teaching materials with real cases, it gave the students a chance to have a greater sense of reali-

ty by embedding strategies aimed at encouraging the students' critical thinking. Realistically this ambition was the most difficult point in my quest for active learning. I could see some teaching staff members were struggling themselves to apply basic principles of problem-based learning (PBL), as their personal experience as students was so different in the past and [in] developing the materials to give the students a real sense of becoming the contemporary competent professional. After all, working in the field requires whoever is developing the material to also think a lot. Once the material was well developed I could see the students were having fun and engaged with the material better. One of the challenges of active learning that remains to be overcome centres on the attitudes of the developer of learning materials.

Applying core values in teaching material and curriculum design

The Australian College of Mental Health Nurses (ACMHN, 2018) produced a National Framework for Mental Health Content in Pre-registration Nursing Programs (ACMHN, 2018) identifying six core values which are recommended to underpin undergraduate mental health nursing courses. Each core value is linked to a learning outcome reflecting that value.

Core value 1

Mental health consumers have a right to lead their recovery process. Carers and significant others have a right, with the consumer's consent, to collaborate in the recovery process.

Core value 2

Mental health consumers have a right to be cared for and treated by nurses who have appropriate knowledge, skills and attitudes in mental health.

Core value 3

Mental health care and treatment involves advocating for mental health consumers, challenging discrimination and using a human rights framework.

Core value 4

The essence of mental health care and treatment is the establishment and maintenance of a therapeutic relationship with mental health consumers, carers, and significant others.

Core value 5

Mental health care and treatment incorporates the ability to plan, develop, implement and evaluate evidence-based initiatives that promote mental health, prevent and intervene early in illness, facilitate recovery, and promote wellbeing.

Core value 6

The recovery of mental health consumers is supported by mental health care and treatment that is broad and positively focussed on strengths and wellbeing ([ACMHN, 2018](#))

The framework focuses on recovery and strengths, and emphasises the importance of advocacy and of the therapeutic relationship, as well as the need for evidence-based care. It is noteworthy that Core value 4, the maintenance of the therapeutic relationship, is expanded to include respect for a person's dignity, culture, values, beliefs and rights, and a recognition of the importance of understanding a person's cultural background as part of establishing that therapeutic relationship.

Authentic clinical anecdotes can be selected so as to stimulate discussion of these core values irrespective of the suite of symptoms reflecting either or both mental or physical health breakdown. Assessing knowledge of evidence-based care can be achieved by quizzes, or a variety of case-based assessments and development of and reflection on care plans; a deeper understanding of the core values is more easily gained through facilitative and collaborative discussion about shared experiences or responses to new patient care situations.

The six core values are followed by recommendations for twelve core components of every pre-registration mental health nursing course, including consideration of the "effect of cultural and social factors in mental illness on individuals, families and communities, for example, ethnicity, gender, LGBTIQ [sexual orientation], migration and refugee experiences, poverty, discrimination" ([ACMHN, 2018](#)).

Curriculum design is at the core of effective education; to achieve good design we need to discover the essentials of current nursing knowledge and best practice. "Probably the most important issue in designing constructivist environments is authenticity" ([Jonassen, Davidson, Collins, Campbell & Haag, 1995](#)) – from this "context, construction, collaboration, and conversation" ([Jonassen et al., 1995](#)) can be used both to plan teaching material, engage students and finally assess student learning, especially if the assessment is based on group work and group discussion, although this is only one possible assessment method.

Those elements of design are still relevant and in the contemporary e-learning environment there are potentially more opportunities for encouraging an enquiry-based approach within learning activities. This does mean discarding the irrelevant and outmoded, but not necessarily the difficult and often perplexing content which comes from real life examples. This is where authentic stimulus material is crucial, especially in a subject like mental health nursing which values ability to establish a thera-

peutic relationship and engage in therapeutic communications for which there is no "script" or "blueprint". Guiding principles and overarching concepts may be outlined; students may then develop understanding of these by exploring authentic stimulus material with their discussions being facilitated by educators who have clinical experience in the field.

However, if authentic stories from clinical practice are the central feature of the stimulus material, their very authenticity means that not all will demonstrate the core values listed above; therefore careful selection of all stimulus material offered over the entire program is needed, to ensure all values are included in a given selection of stories. Similarly, different educators and different student groups may not all discover or focus on the same topics or themes or values because these authentic stories are open to several interpretations or the educator may choose to highlight particular aspects of each story in order to cover what is outlined in the curriculum and/or to meet expectations for undergraduate or postgraduate study.

"What is learned (the meaning that is constructed by the learner) is indexed by the experience surrounding the learning, which assigns meaning to what is learned. As a result, what is learned in the process of solving real-world problems is much richer and better understood because of this indexing. Because classroom lectures provide little of this richness, few connections are made. Situated learning and social construction theorists also believe that learning is necessarily a social, dialogical process in which communities of practitioners socially negotiate the meaning of phenomena. That is, learning is conversation, and the thinking and intelligence of a community of performers or learners is distributed throughout the group. Knowledge and intelligence is not the privilege of an individual, but rather is shared by the community of practice" ([Jonassen et al. 1995](#)).

Recommendations for assessment tasks which are not culturally specific

"Constructive alignment (CA) is an outcomes-based approach to teaching in which the learning outcomes that students are intended to achieve are defined before teaching takes place" ([Biggs, 2014](#)). The ACMHN guidelines provide such learning outcomes. It is crucial that learning outcomes are assessable for the required skills, abilities and knowledge at the required standard. They also need to be relevant to the course being taught, and attainable for the student within the time set for the running of the course ([University of Newcastle, 2018](#)). Almost any content topic in any subject is taught so that students put that content to work in some way: to solve problems, to construct hypotheses, to apply to particular situations ([Biggs, 2014](#)).

When stories from clinical practice are used they will need to be organised according to overarching principles so that they can be used to explore and then assess agreed core concepts in men-

tal health nursing education. If a story does shows an aspect of care which was "messy" or which seems initially not to be an example of best practice, it can still be used as stimulus material, as students discuss what could have been done better or why the episode of care ended as described in the story. "There is a broad concern that the reification of models of learning and teaching, while meeting organisation needs for transferable, multi-use products, will dominate and stifle professional practice development" (Moule, 2007).

Teaching and learning online in diverse cultures

Story 3 (see Part 1) is useful for the facilitator to stimulate discussion of an episode which initially appears not to be an example of best practice, although subsequently the nurse achieved a good result from what began badly. An international student comment on this story read "*The phrase 'Here is the smallest violin' is completely inappropriate and unprofessional in this particular setting. It should not have been said*". However, the student made no other comments on this story nor on the first two, apparently finding Story 3 the one which most captured her attention. Further interrogation prompted by a facilitator in either a traditional classroom or within an online forum, was warranted in an effort to encourage the student to provide a rationale for the reaction.

Learning design creates the pedagogy but as Salmon (2011) reminds us, it is the empathetic teacher and this human intervention which allows the learning; "self-awareness, interpersonal sensitivity and the ability to influence" are crucial qualities in online teachers (Salmon, 2011).

Online learning is "neutral" because there is often no image of the student so students can find encouragement to "be themselves" (Salmon, 2011). This means that programmes of study which seek wide access and openness, "crossing industry, professional and international boundaries and applying research to practice are therefore well served" (Salmon, 2011). However there are particular considerations which need to be taken into account when the student group is drawn from many different cultures and these include styles of address and the associated hierarchy and authority; view of women; a reluctance to ask questions of an instructor as this is viewed as disrespectful; critiquing; making personal disclosures; and not using preferred names (Salmon, 2011)

METHODS

In a project which received Ethics Approval from both the University of Newcastle and the University of New England (H-2016-0269) undergraduate mental health nursing students were

presented with three authentic clinical anecdotes (see Part 1) and invited to write their responses to them based on a framework of six questions (What are the consequences of the actions described? What are the intended consequences? What results are beneficial? What results are not beneficial? How could things have been done better? What results were unexpected?). The first group of students who were invited to participate responded at the end of the trimester in which they undertook their mental health nursing course (see Part 1) but the second group responded at the beginning of the trimester in the following year, i.e. the second group was a new enrolment to the course. Both groups included a large number of 'international' students who might return to their home countries as well as Australian students. The second group responded after completion of a three day intensive in which all major course content was taught as a block. The third group who were invited also enrolled at the beginning of the new trimester but were on campus students; once again, this group contained a large group of international students.

A small group consisting of one tutorial group from off campus enrolment with both Australian and international students in it was provided with paper copies of consent, information statement and stories with survey to allow an opportunity to respond without going online. Two on campus tutorial groups were the final groups to be provided with paper copies as an alternative to responding online. In these two groups most of the international students were from Nepal or from the Philippines, although there were also some from India, China and African countries.

RESULTS

The outcome of considerable efforts to target international students appear to confirm the previous commentary on the differences in responses to mental health issues across cultures. While two international students signed the paper consent they did not complete the survey at all; another returned both signed consent and completed form. When one of the authors of this paper approached several colleagues in China and Japan for their reflections on the teaching of mental health nursing in their countries only two responded.

A response from one international student showed a lack of understanding of the basic facts outlined in Story 1 with the comment *Being left in the community with no help* being given as a consequence of the actions described in the story, although the story clearly describes a transfer from an inpatient unit to input from the afterhours team to a booked appointment at the community health centre following this. This may reflect a cursory reading of the story or a lack of understanding of how the differ-

ent teams in an Australian mental health service interact in the transfer of care. However, an Australian student was similarly confused about this, commenting on results not beneficial *No results or plan for care nor history or risk assessed* which also reveals a lack of understanding of how the process of care unfolded. Neither student noticed the synchronous breathing.

DISCUSSION

Choices about stimulus material for nurses warrant careful consideration. These stories were selected because they were considered to be open to many interpretations that a facilitator could cause students to explore and to include interpretations being made by students from different cultural backgrounds. In Story No 1 'mindfulness of the breath' can be understood not just by Australian students who have learned this technique either as part of a mental health nursing course or for their own personal development; in Story No 2 'cultural beliefs about suicide' and 'cultural constraints about nurses showing emotion in front of patients' can be rich sources of discussion; and in Story No 3 the idiomatic "the smallest violin in the world playing just for you" might puzzle Australian students as well as students from other countries because the literal meaning of this expression does nothing to suggest what it actually means when used ironically in a context such as the one described in Story No 3.

While the responses to the request for specific feedback on the narratives were limited they did cause the researchers to reflect on the students' responses to complex situations in mental health, the need to provide a contemporary framework of mental health nursing that might have application irrespective of culture and context and the need for any educator to review their approach at the end of each semester. While working in an online environment poses particular challenges for both teachers and students, it is important for the teacher to accommodate emerging technologies that are part of the daily experiences of students, health professionals and the consumers/clients themselves. Assessment will be to the forefront of any student's thinking and is the essence of learning. Hence careful thought needs to be given to what the assessment tasks are asking of students and the extent to which learning outcomes as a result of these tasks are instilling in students the values and processes that align judgments and actions with optimal patient care.

The low response rate across several large cohorts of undergraduate students, both Australian and international may reflect a discomfort with the specialty of mental health nursing and a reluctance to reveal this discomfort, although students were advised that there was no 'right or wrong' response. It may reflect a

different attitude to teaching and learning in the international group with an expectation of a didactic style of teaching and a very structured and closed curriculum. It may be a result of the lack of free time often experienced by students today who may also be working and raising families or supporting family members in other ways. It may be because at undergraduate level students cannot be expected to understand the value of nursing research. It may be simply an unwillingness to undertake anything which is not directly related to course progression and accruing enough marks to pass!

When considering cultural differences between different student groups, it may also be helpful to consider whether mental health nursing has its own distinctive culture ([Holyoake, 2013](#)), one which may be troublesome for any group of students to access and understand initially. That fact that there is no single "textbook" interpretation of the three stories (see Part 1) may suggest the very real difficulty of introducing students to this new nursing culture which, while sharing features with all branches of nursing, yet presents a way of working and thinking which has some features that are unique to the specialty. Common difficulties in interpreting the stories appeared in responses from both Australian and international students; similarly reflections from nurse academics from China and from Japan (see above) highlighted issues in teaching mental health nursing which are also common in Australia.

Students can be assessed on conceptual and information knowledge, professional employment related skills, common (generic) skills, and attitudes and values, all of which lend themselves very well to discussion of stories like the ones above. Students can be required to formulate a response to the situation/problem (taken from or reporting on actual practice) using appropriate frameworks e.g. a care plan, a plan of action, patient management plan, or a clinical record of intervention. Where the story describes a completed episode, students can be asked to propose alternatives or to justify the actions taken as described in the story.

PBL is a combination of five strategies simultaneously

- Use of real world scenarios to provide a context for learning

- A focus on thinking skills (critical thinking, situation analysis, problem-solving/clinical reasoning, reflection)

- Integration (thinking, doing and being, and knowledge form different disciplines)

- Development of self-directed learning skills

- Use of small groups (not necessarily facilitated) to support collaborative learning.

Using authentic clinical anecdotes does fit with all of these. Stories come from the real world of practice and “unpacking” them calls for critical thinking and problem solving as well as a degree of personal reflection. A successful and indepth understanding of these calls for integration of thought and potential action, and group work, whether facilitated or not, brings skills in self-directed learning.

The following checklist provides a guide to educators for the design of problem-based learning or enquiry/situation-based learning activities that place the students in the decision-making role e.g. as a nurse working in mental health. Some stimulus material will focus on particular concepts or assessment of particular learning outcomes within a PBL cycle ([Appendix 1](#)).

CONCLUSION

Although it proved very difficult to attract participants in the study both in Trimester 2 2018 and in Trimester 1 2019 the responses received showed that it cannot be assumed that students will read and comprehend the bare facts of a story, whether the student is ‘International or Australian.’ Moving from the outline to an in-depth appreciation of what the nurse actually contributed to the patient’s care is therefore likely to be challenging. Each of the 3 stories are authentic anecdotes (see Part 1) and can be used as stimulus material for discussion of the elements of a true ‘therapeutic relationship’ that is needed in mental health care. Students can find this concept difficult to understand, often focusing on the basic skills of professional communication which they are taught early in their studies, and failing to appreciate that the therapeutic relationship in mental health nursing involves more complex communication skills and a nuanced and highly developed professional relationship. A superficial reading of Story number 1 may leave a student with a sense that the patient’s needs were disregarded unless the educator leads a discussion on the occurrence of the unexpected in that encounter; similarly a beginning understanding of what happens in Story number 2 may not lead the student to an appreciation of the genuine grief experienced by a nurse following a therapeutic relationship which ends in tragedy, and the importance of clinical supervision for all mental health nurses who care for vulnerable patients—rather students may reveal a sense that expression of feelings from the nurse is always inappropriate. Story number 3 can be used to stimulate a discussion of the power of an apology when a nurse inadvertently causes distress to a patient and the way in which genuine communication can eventually lead to a significant therapeutic outcome.

However an attitude which stigmatises and/or is fearful of

mental health patients is likely to prove a barrier to the sort of open discussions which a skilled educator could lead based on these stories. This will compound the difficulty of finding stories which are useful in teaching with students from diverse cultures. Thus there may be a culture of blaming or fearing or shunning mental health patients among nurses from many different countries (as described in the reflections above) along with misunderstandings likely to occur among specific groups of students because of stories about episodes of care which took place in cultures different from their own.

RECOMMENDATIONS

1. The opinions from educators teaching mental health nursing such as those in Asia should be sought by inviting them to reflect on the current methods used in their country (as the nurse academics from China and Japan do in the personal communications above).
2. A collection of authentic stimulus material from diverse countries should be made to minimise the likelihood of misunderstanding of patients/clients by students based solely on unfamiliarity with the particular cultural aspects.
3. These stories should be workshopped by a group of experienced educators from different countries to ascertain whether they are fit for purpose to prepare students for practice in Australia and whether they follow the guidelines set by the [AC-MHN \(2018\)](#).
4. Assessment tasks should then be linked to these guidelines which set out learning objectives. They could also be based on group discussion and group submission of a summary of that discussion thus linking them to real-life ways of working as a nursing team assessing patients and planning care.
5. Focusing solely on the mental health aspects of the story to the exclusion of physical assessment and care should always be avoided. In Australia undergraduate education is meant to be ‘comprehensive’ i.e. to address the range of symptoms that clients present to nurses; specialist education, while attempting to focus on a particular suite of symptoms, nevertheless also needs to take a holistic view of assessment and this should be incorporated into any discussion of authentic clinical anecdotes.

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Appendix 1. Enquiry/Situation-Based Learning Design Criteria (developed by Little & McMillan, 2017)

	Not at all	To some extent	To a reasonable extent	To a great extent
Format: mental health subject/unit outline: Relates to Objectives Is consistent with a list of curriculum concepts, principles, values Involves session plans including directions for discussion Provides scenario and related information to support learning outcomes Provides clear instructions or suggested approach to students Provides a facilitator guide (expected responses to suggested approach) Considers related learning events (clinical labs, lectures etc) (optional) Has a relationship to course/subject				
The stimulus materials (scenario, simulated activity) Is realistic and authentic Relates to the concepts intended for learning Presents some aspect of the situation as "problematic" Requires the learner to adopt a role Provides a specific context (time, place, location, etc) Provides enough patient/client information for students to identify the problem(s) and to formulate relevant hypotheses Provides a sequence of situations that require a response. Requires the learner to make a decision or take an action Requires the learner to justify their decision or actions by applying the learning issues (concepts) to the specific situation Provides feedback on proposed actions or decisions taken.				
Instructions to students in the student guide (online or paper-based) Provides a systematic approach to analyse the situation Provide the steps of a clinical reasoning strategy relevant to the profession or discipline Direct students to identify learning issues (relevant concepts) Requires the students to formulate a response to the situation /problem using appropriate frameworks e.g. care plan; a plan of action; patient management plan; a clinical record of intervention etc. Requires students to justify their response to the situation using relevant concepts Suggests resources (optional)				
The facilitator guide for team members provides: Expected responses from students' enquiry and analysis of the situation or scenario e.g. list of problems; hypotheses; learning issues etc. The preferred response to the problem (or set of responses) e.g. plan of care; management plan Suggestions for learning resources				

Development and Application of an Integrated Curriculum Centered on Mathematics for Elderly Generations

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Purpose: To develop an education program based on adult learning principles and actual experiences of elderly generations to develop an integrated curriculum centered on Mathematics.

Methods: Using a theme-based integrated curriculum design for a particular group of elderly learners ($n=4 \times 18$), this study followed a sequence in program development: Assessing the needs, choosing a theme, studying a topic, writing a rationale, brainstorming, stating the learning objective, planning the project, establishing detailed activity plans, programming the learning time, and assessing the efficiency and the validity.

Results: Using our data analysis, core concepts were applied to everyday experiences of travel and cooking; the need to develop numeracy for elderly generations informed the development of unit objectives and learning outcomes within a Korean adult literacy curriculum. Implementation of the curriculum led to some improvement as evident from the pre- and post-results using the K-mmse; it was also possible for the elderly generations to engage in cooperative learning events and complement each other during the problem solving processes.

Conclusion: This study is significant in that it develops and applies the principles of Problem-based Learning (PBL) – an integrated curriculum design, use of real-life topics and consideration of the needs of the learner, in this case, elderly generations. As a learner-centered curriculum, it gave greater motivation to learners and made the mathematics subject relevant to their needs. It is necessary to consider the diversity across generations of learners and develop curricula in accordance with their needs.

Keywords: Integration Curriculum; Elderly generations; Mathematics; Curriculum; Thematic

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INTRODUCTION

‘Integration’ implies ‘the connection of things for the whole’, or ‘qualitative change to combine components into a new whole’ (Myeoung, 2002). Over two decades ago the seventh curriculum for secondary education reestablished the concept of an integrated curriculum encouraging its management using activity-based topics rather than attempting integration across subjects (The Ministry of Education, 1997). However, integration is not evident within the environment of adult education in Korea. The National Institute for Lifelong Education was established as a part of aspirations for an approach to lifelong education or ongoing learning. Nevertheless, approaches to Korean education have not realized any principles for curriculum development for mature adults, although there are some positive developments.

Resources for elderly generations now center on ‘The Adult Literacy Text (The National Institute for Lifelong Education, 2012)’ emerging from a national project; the 2019 Adult Literacy Text will be soon published as a revised edition. Trial and error was a feature of the early stages of curriculum development suited to the principles of adult learning but curricula for the elderly

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generations of learners have made their mark through two development processes. Thus, our study on the development and application of an integrated curriculum is designed for elementary and secondary courses of adult literacy, providing suggestions for the methodology of curriculum development. The elementary course within these curricula focuses on adult literacy; when embedded within a secondary course, the same principles can be realized within a subject. The characteristics of this adult literacy curriculum for elderly generations in Korea are based on learning events reflecting everyday experiences of members of the elderly learners. The mathematical concepts underpinning the development of numeracy, should be considered a priority.

Curriculum design featuring the experiences of an elderly generations, and those of adults, overlap within a range of subject-based curricula; the overlap becomes intensified within topics and the incremental development of mathematical concepts. Some formal subjects can be seen as meaningless and time-wasting for the elderly. The ultimate goal for elderly learners is to improve their quality of life.

The learning needs of elderly generations are important as changes in society, especially around technologies, impact their lives. Elderly generations have led their lives independently. Their quality of life has become a hot issue in our society. Thus, we suggest the use of more learner-centered integrated curricula based on real life situations, reflecting everyday experiences. This integrated curriculum centered on mathematics emphasizes learning processes reflecting intuitive thinking, the development of cooperative teaching and learning among seniors to promote positive attitudes and integration of relevant information and knowledge in modern society.

Consideration of the hierarchical map of mathematical concepts was central to the education programs based on other real-life experiences of elderly learners. This study was designed to describe the outcomes of an integrated approach to development and application of relevant concepts centered on mathematics for elderly generations and how it applies in daily practice.

THEORETICAL BACKGROUND

1. Theme-based Integrated Education

'The Integrated Approach' has developed as a part of progressive education; it has been actively studied in Korea since 1990 (Kim, 2000). As early as 1979, Ingram reported that an integrated curriculum is significant for the following reasons that remain today.

First, learners can cultivate the ability to handle the extensive knowledge and information, that has increased these days.

The main ideas and basic principles underpinning integration

are drawn from and reflected in a wide range of studies. Also, ideas from different realms of knowledge are linked in an organized way, promoting their relevance, accessibility, penetration and wholeness.

Second, the integrated approach makes learners follow their own learning process. The reflective thinking of Dewey (1933) and the discovery learning of Bruner (1961) emphasizes the learning process itself, asserting inquiry-based activities with topics rather than the acquisition of factual information. So, it can achieve a sense of balance within an individual as well as between the individual and the environment, developing evenly the cognitive and affective areas at the same time.

Third, integrated approaches have the function of learning how to cope with social problems. To solve various problems occurring in modern society, it is necessary that one should have the integrated knowledge applicable to many fields, not just knowledge of a specific field. In other words, the learning and the life experiences should not be isolated from Third, integrated approaches have the function of learning how to cope with social problems. To solve various problems occurring in modern society, it is necessary that one should have the integrated knowledge applicable to many fields, not just knowledge of a specific field. In other words, the learning and the life experiences should not be isolated from each other; school education for example should apply to everyday life.

Therefore, integrated educational content and processes are designed to link a lot of ideas systematically, helping with problem solving, organizing them in accordance with the development of learners, promoting their holistic growth, increasing cooperation among peers and thus maximizing the learning effect based on the interaction among the elements.

2. Integrated Curriculum Centered on Mathematics for Elderly generations

Research relevant to this study centered on mathematics education for elderly generations suggests it has application as follows: analysis of interactions between seniors in speed calculation, mathematics for development of thinking and gaming skills (Seo, 2007), approaches to development of programs to investigate mathematical characteristics relevant to the elderly in terms of cognitive and other affective areas (Lee, 2007; Joo, 2007; Lee, 2008) and analysis of 'calculation characteristics' in seniors (Choi, 2008).

Although few programs have been based on research, these are mainly composed of real-life topics and calculations. A mathematics literacy program was recently developed based on the experiences of elderly generations with mathematics education (Lee & Ko, 2018). The experiences of elderly generations should have a central place in education considering their cognitive and affective needs.

3. Literacy Educational Processes for Adults

The necessity for literacy educational processes for adults has been raised as an essential foundation to establish systems to certify qualifications, to provide literacy education for adults, to increase demand for learning materials, and to develop independent processes of education. The latter, suitable for adult learners, are differentiated from those for juvenile learners, especially in the field of literacy education. Thus, emerging from a focus on queries about demands for educational sites for literacy education for adults, consideration of the needs of professionals, developing textbooks for such education, thoughts of researchers, and advice from professionals working at their actual worksites, an essential system and content within a textbook was finalized ([The National Institute for Lifelong Education, 2012](#)).

The components for national literacy education for adults include suggestions for each step.

4. Real-life Topic Selection

In the Development Model of theme-based Integrated curricula ([Frazee & Rudnitski, 1995](#)) the assessment process was as follows;

- ① Assessing Needs → ② Choosing a Theme in the Organization of Curriculum → ③ Selecting a Studying Topic for Each Subject → ④ Writing a Rationale for the Selected Topic and Concept → ⑤ Brainstorming → ⑥ Making a Statement for the Learning Objective → ⑦ Designing the Project → ⑧ Establishing the Detailed Activity Plan → ⑨ Planning the Learning Time → ⑩ Considering the Efficiency and Validity of Integrated Curriculum.

Our needs analysis suggested a program design to reflect cognitive and affective characteristics of elderly generations who might have graduated a long time ago or did not attend school at all. We tried to reflect excitement around their needs to learn mathematical concepts, as they thought these difficult to study and apply in many real-life situations. Their goal to learn about mathematical ideas was located around improvement in their quality of life. We selected life-based materials, that elderly generations are highly likely to develop an interest in and absorb because they are based on their experiences; we then applied these to concepts from the relevant mathematical text.

METHODS

Table 1 outlines the approach taken.

First, we investigated and then integrated the theories from the relevant literature to develop real-life education programs centered on mathematics using a ‘theme-based integration’ approach.

Second, we selected the developmental stages of theme-based education program based on the evidence from research before

program development progressed.

Third, we considered the content validity of the education programs which we developed, with two onsite specialists and one educationalist; we then modified our plan according to feedback.

Fourth, we carried out the field study to search demonstrate effectiveness in application and demonstrate the worthiness of the chosen curriculum approach. The field study was carried out 18 times on a group of four elderly learners in the lifelong learning school located in Suwon, Korea.

RESULTS

1. The development of an integration curricula centered on Mathematics for Elderly generations

A. a) Selection of Educational Objectives and b) Learning Content

a) This study is designed as the developmental research of curriculum for elderly generation learners, comprehensively forming the real-life topics in the mathematics subject to improve the quality of life for learners.

b) the learning content used to develop centered on mathematics real-life curriculum is shown in [Table 2](#).

B. The Content of 2007 Adult Literacy Education Course by Topic

The content of education programs, related to travel and cooking, are classified by subject, the relationship between them and those of 2007 Adult Literacy Curriculum.

Curriculum content was shown in [Table 2](#). The 2007 Adult

Table 1. Study approach

Procedure	Contents
Analysis	Consideration of theme-based curriculum: Integration Theory ↓
Design	Selection of Education Program Development Model ↓
Development	Education Program Topic Organization Education Program Development ↓
Assessment	Assessment of Education Program -Expert Assessment of Content Validity -Learning Subject Assessment through Preliminary Courses ↓
Application	Application of Integrated Curriculum Program for Adult Learners

[†]Application of K-mmse: Korean version of Mini-Mental State Exam ([Folstein et al., 1975; Lancu & Olmer, 2006; Oh et al., 2010](#))

Literacy Curriculum consists of Wish Tree (Volume1~Volume4), Learning Tree (Volume5~Volume8) and Wisdom Tree (Volume9~Volume12) by stages; however, we are presenting only Volumes 1 ~ 12' for convenience in this study.

a) The Topic of 'Travel'

The education program topic 'Travel', relates to 'Korean, Mathematics, and Society' in the 2007 Adult Literacy Curriculum, the major resource used. Specifically, the mathematics is based calculations, while the Korean and Society are related to their real life experiences; details are as follows in [Table 3](#).

b) The Topic 'Cooking'

The topic cooking also relates to relevant material within the Learning Resources contained in other units: Korean, Mathematics, English, Science and Society in the 2007 Adult Literacy Curriculum. Details are presented in [Table 4](#).

C. Systematization of Learning contents

Subcategories for learning content were grouped and systematized; then, those concepts in each group were integrated through comprehensive integration processes to organize units. These are presented in the following flowcharts.

a) Integration of learning content in [Figure 1](#).

b) The Composition of Units and Establishment of Education Objectives in [Table 5](#).

Table 5. The establishment of education objective based on the comprehensive integration in travel

Classification	Education Objectives
	1. Summary
General Objective	To understand the overview of the travel unit.
Detailed Objective	To understand the learning content in the travel unit.
	2. Basic Knowledge
General Objective	To understand the basic knowledge for travel plans.
Detailed Objective	To read and use calendars and timetables. To make use of cellphone. To understand how to calculate the time and the hour. To understand the concept and application of tables and diagrams.
	To understand the concept of distance and speed. To understand the weather and tour maps. To understand the concept of calculation. To understand how to search via internet.
	3. Application and Problem Solution
General Objective	To enable the solution to problems through activity tasks.
Detailed Objective	To meet scheduling for meetings. To confirm the weather and the location. To make reservations and scheduling (including ticketing and accommodation) To open an account and issue a cash card. To have the emergency measure (including hospitals and pharmacies) in a travel destination.

Table 2. Reality-based stimulus material

Classification of Real-Life Topics	Subcategories	Mathematical Activities	Learning Content
I . Travel	Budget planning	Calculation Calculator Application Account Opening Temperature (°C) Unit	Calculation Calculator Understanding of Interests and Calculation Understanding of Symbols Understanding Temperature Understanding Fine Dust Unit Application of Computers and Smartphones Understanding Tables Understanding Diagrams Scheduling using tables and diagrams Scheduling and Smartphones
	Weather Checking		
	Scheduling using a table	Table Making	
	Ticket Preserving	Calculation PC Application	Calculation Calculator Computer Application
	Basic Unit Diary	Volume and Weight Unit Diary	Volume and Weight Unit Diary Material Composition
	Nutrient Profile Diary	Pie Graph Bar Graph	Pie Graph Nutrient Composition Diary using a Pie Graph Bar Graph Diary Nutrient Comparison using a Bar Graph
	Understanding of Safety Regulations Electricity Use		Safety Cooking Utensil Manual Using the Electronic Product Manual
		Emergency Measure	Minor Wound Treatment Visiting a hospital/Calling an ambulance

Table 3. Travel: Content from 2007 Adult Literacy Curriculum

Subject	Title	Contents	2007 Adult Literacy Curriculum
Korean	Going on a Visit	To go on a visit with friends.	Volume 2 Chapter 13
Mathematics	Calendar	To make and read a yearly or a weekly calendar.	Volume 2 Chapter 17
Mathematics	Watch	To read the time and the digital watch.	Volume 3 Chapter 17
Korean	Sign	To read and write the names of various signs and then name them in accordance with attached pictures.	Volume 3 Chapter 15
Mathematics	Addition and Subtraction	To understand the symbols of 'plus (+)' and 'minus (-)'; To read and write the addition and subtraction of one-digit numbers.	Volume 4 Chapter 18
Korean	Taking a Bus	To understand the types and usage of means of transportsations.	Volume 5 Chapter 10
Korean	Train Trip	To read travel notices and make use of their information.	Volume 5 Chapter 11
Korean	Weather Cast	To read written details on the weather.	Volume 5 Chapter 12
Mathematics	Addition 1	To add one-digit numbers with 'carrying'.	Volume 5 Chapter 26
Korean	Notification	To read and understand various notices.	Volume 5 Chapter 15
Korean	Country	To understand each, Do(province) in Korea.	Volume 5 Chapter 24
Korean	City's Name	To understand the names and locations of Korean main cities.	Volume 5 Chapter 25
Mathematics	Addition 2	To add two-digit numbers to one-digit numbers.	Volume 5 Chapter 27
Mathematics	Addition of two-digit Numbers	To add two-digit numbers with 'carrying'.	Volume 6 Chapter 26
Mathematics	Subtraction 1	To subtract numbers with 'borrowing'.	Volume 6 Chapter 27
Korean	Cellphone Etiquette	Cellphone Etiquette (in public spaces)	Volume 6 Chapter 19
Mathematics	Subtraction 2	To subtract two-digit numbers with 'borrowing'.	Volume 6 Chapter 28
Korean	Advertisement in our daily life	To understand the meaning in advertisements.	Volume 7 Chapter 6
Mathematics	Figure	To distinguish triangles and quadrangles.	Volume 7 Chapter 27
Korean	Today's News	To grasp the content of news written in accordance with five w's and one h.	Volume 7 Chapter 15
Korean	Five W's and One H	To read notices and understand them considering five w's and one h.	Volume 7 Chapter 16
Mathematics	Time and Hour	To read the hourly train timetable and calculate time.	Volume 7 Chapter 26
Mathematics	Multiplication 1	To learn the principle of multiplication and then memorize the multiplication table (two times to five times).	Learning Tree Volume 3 Chapter 28
Mathematics	Multiplication 2	To learn the principle of multiplication and then memorize the multiplication table (six times to nine times).	Volume 7 Chapter 29
Korean	Visiting a Bank	To read and write based on the experience of visiting a bank.	Volume 8 Chapter 4
Mathematics	Length	To understand the concept and unit of length.	Volume 8 Chapter 26
Korean	Environmental Protection	To understand and practice environmental protections.	Volume 8 Chapter 12
Mathematics	Weight	To understand the concept and unit of weight.	Volume 8 Chapter 27
Korean	Public Etiquette	To understand and practice public etiquette.	Volume 8 Chapter 19
Mathematics	Division	To understand the division and then divide one-digit numbers.	Volume 8 Chapter 28
Society	Tour Map	To read and understand tour notices and maps.	Volume 9 Chapter 7
Mathematics	How to Use a Calculator	To solve calculation problems using a calculator.	Volume 9 Chapter 24
Mathematics	Addition of Three-digit Numbers	To add three-digit numbers.	Volume 9 Chapter 25
Mathematics	Subtraction of Three-digit Numbers	To subtract three-digit numbers.	Volume 9 Chapter 26
Mathematics	Multiplication of Two-digit Numbers.	To multiply two-digit numbers.	Volume 10 Chapter 24
Society	Economy and Life	To understand about markets and the economy.	Volume 10 Chapter 19
Society	Climate	To understand the climate of other countries and ours.	Volume 10 Chapter 23
Mathematics	Distance and Speed	To understand the concept of distance and speed and their relationship.	Volume 11 Chapter 25

Table 4. Cooking: Content from 2007 Adult Literacy Curriculum

Subject	Title	Contents	2007 Adult Literacy Curriculum
Korean	A-frame and Stews	To distinguish '丈', '丈' and '丈'.	Volume 4 Chapter 4
Korean	Pickling cabbage	To distinguish homonyms.	Volume 5 Chapter 3
Korean	Selection of Hospital	To understand information on types and treatment processes of hospitals	Volume 5 Chapter 8
Korean	Caution against Fire	To understand the telephone number necessary on emergency.	Volume 5 Chapter 21
Korean	Saving Electricity	Sentence completion and the consumption of electricity.	Volume 6 Chapter 6
Korean	Spacing Class	Understand spacing for reading and writing.	Volume 7 Chapter 1
Korean	New Year's Day in Different Countries	To compare New Year's Days in different countries.	Volume 8 Chapter 8
Mathematics	Weight	To understand concepts and units of weight.	Volume 8 Chapter 27
English	Alphabet Song	To read and write alphabet: Upper and lower cases.	Volume 9 Chapter 4
Science	State of Matter	The State and Change of Matter.	Volume 9 Chapter 19
Science	Nutrients of Food	To understand types of nutrients, nutrient-rich foods and avitaminosis.	Volume 10 Chapter 4
Korean	My Recipe	My Recipe for explanations to others.	Volume 10 Chapter 11
Mathematics	Fraction	To understand the concept of fraction.	Volume 10 Chapter 25
Mathematics	Comparing the size of fractions	To compare the size of fractions.	Volume 10 Chapter 26
Society	Economy and Life	To understand the market and the economy.	Volume 10 Chapter 19
Korean	Caution against Fire	Fire Prevention and Measure.	Volume 10 Chapter 22
Mathematics	Addition and Subtraction of Fraction	To add and subtract fractions.	Volume 10 Chapter 27
Mathematics	Decimal	To understand the concept of decimal.	Volume 11 Chapter 24
Science	Healthy Dietary Life	To understand dietary elements for healthy life.	Volume 11 Chapter 21
Mathematics	Quantity Unit	To read and understand units of quantity.	Volume 12 Chapter 24
Mathematics	Understanding of Percentage (%)	To understand and calculate percentages.	Volume 12 Chapter 25
Mathematics	Graph	To understand and interpret graphs.	Volume 12 Chapter 26

Table 6. The establishment of education objective based on the comprehensive integration in cooking

Classification	Education Objectives
	1. Summary
General Objective	To understand the overview of cooking units.
Detailed Objective	To understand the learning content in cooking unit.
	2. Basic Knowledge
General Objective	To understand basic knowledge of food.
Detailed Objective	To understand the concept of weight and volume. To understand the unit of weight and volume. To understand fractions, decimals and percentages. To understand graph. To understand the concept of matter. To understand nutrients in foods. To understand the composition of healthy dietary life. To understand the safety regulations of home appliances. To understand fire-fighting prevention measures
	3. Application and Problem Solution
General Objective	To enable solutions through problem through activity tasks.
Detailed Objective	To select foods and cooking processes. To make a recipe. To compose the nutrients of food. To understand the emergency measures.

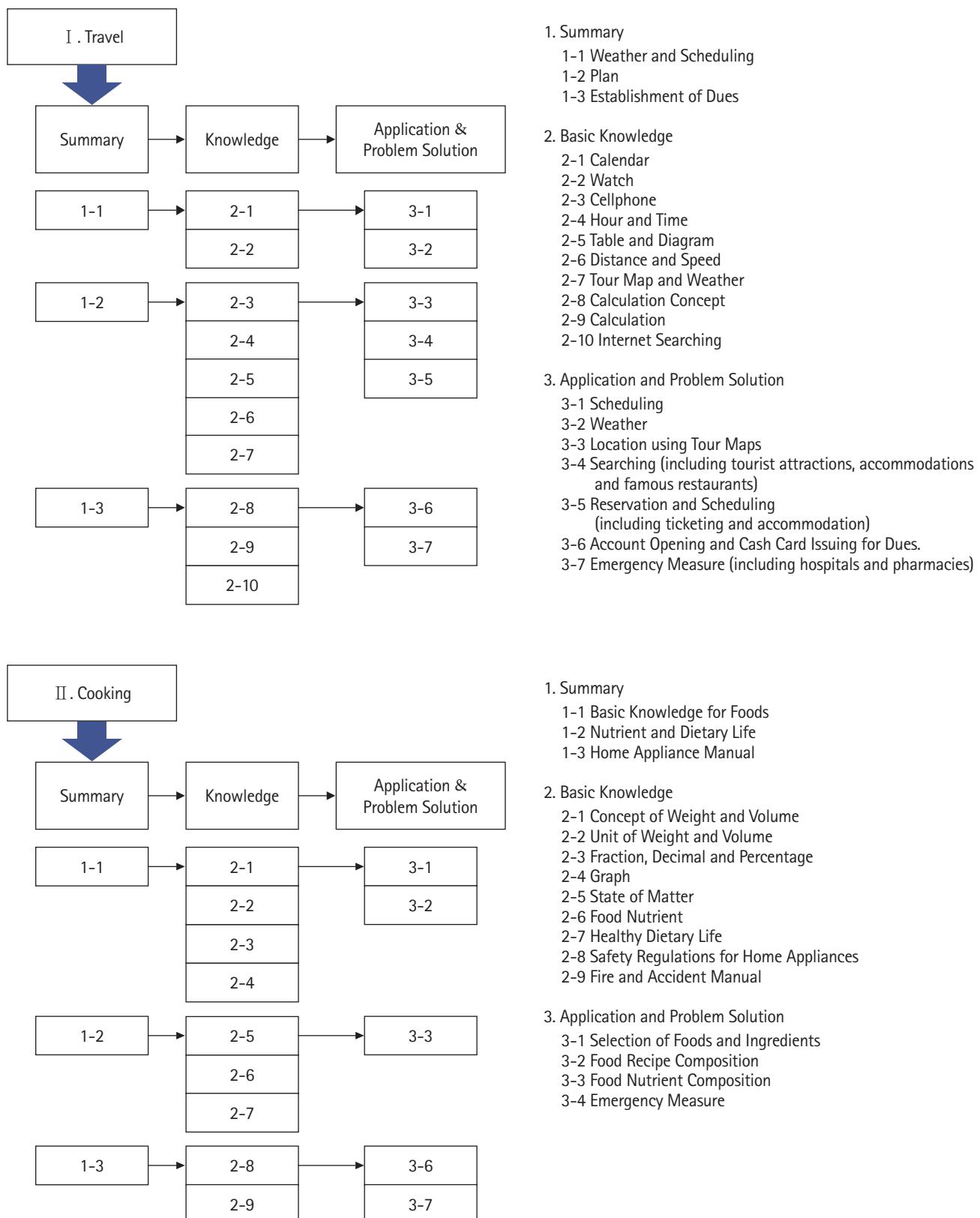
The following flowchart elaborates on how we established the composition of learning content for the travel unit and the establishment of education objective based on the comprehensive integration processes.

The composition of learning content for cooking unit and the establishment of education objective based on the comprehensive integration in [Table 6](#).

2. The Assessment of an Integrated Curriculum centered on Mathematics for Elderly generations

A. The Expert Assessment of Content Validity.

The experts' assessment process was designed to see that the content and level of theme-based integration curriculum were developed with consideration of the learners as follows: According to the opinion of experts, the program provides content which meets the education objectives, to apply in the field study for elderly learners, and thus achieves its development purpose. In particular, they said that it includes those highly accessible concepts underpinning the interests of learners. However, they pointed out that elderly learners spend a lot of time fully understanding in-depth areas of study. Also, there were some opinions expressed that around the question of program design that leads to personal problem solving i.e. self-direction in learning. They

**Figure1.** Integration of learning content

suggested that learners might need the guidance of their instructors during the course e.g. using a computer.

Based on the results of above expert assessment, we modified units after considering each piece of feedback. This newly developed program was modified again through many preliminary course implementation processes.

B. The Field Study

When the proposed program was applied in actual classes, elderly learners became highly interested unlike the case where they originally learned about subjects centered on mathematics. Also, these learners reported that they could recognize the need for mathematics given their participation in the program; learners expressed opinions that the program was valuable, as it allowed them to use a calculator on complicated mathematical problems. However, some respondents said they were not confident with mathematics i.e. when using a computer or learning the difficult terms for ingredients during the cooking unit.

As a result of field study feedback, we adjusted the difficulty of computer skills learning activities.

C. Application of Curricula for Elderly Learners.

We implemented this program with four elderly generation learners 18 times; dividing them into groups of two, they participated into group learning processes twice a week. We used the K-mmse (Korean version of Mini-Mental State Exam) tool ([Folstein et al., 1975](#); [Lancu & Olmer, 2006](#); [Oh et al., 2010](#)) before and after the course so that we could detect change. Their results were as follows in [Table 7](#).

Table 7. K-mmse test result according to curriculum application

Learner	Pre	Post	Difference
Learner A	25	29	+4
Learner B	23	26	+3
Learner C	17	21	+4
Learner D	21	23	+2

The following are records of conversations of learners during the course; these show how they solved their problems. In the following situation, Learners A and B were paired to interpret the graph during the travel unit; they were expected to identify from the graph, the second preferences for the site where travelers wanted to go. This question is designed to find that they can read and interpret the graph. Learner B understood exactly the situation; he correctly answered the Palace Museum. Learner A tried to convince him that the tourist attraction is the place they want. However, Learner B again explained the situation to Learner A,

but they could not resolve their differences. So, the teacher intervened to help them find the relevant data.

Learner B: Where is the place, where the members want to go most second, in this graph? this is the Palace Museum.

Learner A: No, maybe this is the tourist attraction.

Learner B: The Palace Museum. Sister, look at here. You should see it (pointing at the question). The tourist attraction is here (Pointing at the neighboring bar graph).

Learner B: Um? The place they want to go to. The palace museum.

Learner A: So, they took a bath in the place where they wanted to go most second, and they may hope to go to the tourist attraction.

Learner B: Hey, I already selected the palace (museum) as the second place?

Learner A: I think it is for the tourist attraction? This is the second most visited place...

Teacher: Please consider the height of each bar graph. Can it be counted using this table?

Learner A: (Pointing at the graph by the finger) Here? here? the second most... ah... it is the museum.

In the following case Learners C and D were paired to interpret the graph during the cooking unit. The question was about the ratio of each ingredient (including fat and protein) in the pie graph. Learner D understood the nutrient was carbohydrate, accounting for 68 percent in the pie graph. Learner C understood that protein accounted for 9 percent. The following conversation shows how they discussed the question, encouraging each other.

Learner C: um... others... (read again more carefully for a while) Other fats, protein, water. So, others, fats, protein and water are 2 percent, 3 percent, 9 percent and 18 percent, respectively. Isn't the total 100?

Learner D: Yes, you're right. Haven't you learned pro (the abbreviation of percentage) carbohydrate accounts for 68 percent.

Learner C: Carbohydrate accounts for 68 percent. So, you mean that all should add up. I learnt gram (g) as well.

Learner C: 68%. Write the most ratio here. Read... (read the question carefully) 'Write the most ingredient in this food!' So, we write 'carbohydrate' here.

Learner C: Do I write 68 only?

Learner D: You should write pro (percentage) also. (Alas) I haven't known these until now.

Learner C: It's not too late. I do this thing! (Laugh)

CONCLUSIONS AND RECOMMENDATIONS

This study was designed to develop an integrated curriculum centered on mathematics for elderly generations, using real-life topics based on the experiences of the elderly learners. We analyzed the content of many different subjects in Korean adult literacy curricula to develop an integrated curriculum. Tests for content validity were undertaken by three experts including two onsite specialists and one subject-educationalist. Curricula were modified

immediately using the evaluation of learners. Learners were reported to intuitively understand the mathematical concepts, including their real-life elements used as topics; clearly, motivation enhanced the understanding of mathematical concepts.

It is evident that ongoing education is essential in seniors and members of the elderly generations if improvements in their quality of life is to be achieved. Therefore, the establishment of appreciation of educational content and processes and instructor expertise on the characteristics of learners is important if educational outcomes can be optimized for learners. Consideration of their varied experiences and levels of cognitive and physical functions will also impact management of social situations. Like all learners, the individual needs of those of elderly generations should be central to curriculum design and the development of learning activities.

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Appraisal of International Guidelines for Cancer Pain Management

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Purpose: Given that healthcare professionals need to use relevant data bases to access and manage information that informs their practice, this paper reports on a review of processes within the development and use of international guidelines for pain management for cancer patients and considers the implications for nurse education and practice.

Methods: An integrative systematic approach to a review of the literature around the development and implementation of guidelines for pain management by nurses.

Results: The literature review reveals that using evidence from research to optimally perform the nursing role in pain management is essential. However, clear statements of the scope of nursing practice within formal guidelines are also necessary; problems about use of Evidence-based Guidelines (EBGs) stem from the lack of detail on the nursing contribution in the development and implementation of guidelines themselves and other factors/barriers impeding the application of guidelines to education and practice.

Conclusion: Nurses need to contribute to guideline development if they are to fully appreciate their role in pain management and consider the contribution to decision-making around learning processes aligned to nursing care. Clear evidence of the manner in which guidelines are developed and updated is necessary if they are to be seen as inclusive of all healthcare professionals.

Keywords: Cancer pain management; Evidence-based guidelines; Nursing

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INTRODUCTION

Given that the National Cancer Control Institute ([NCCI, 2017](#)) reported that cancer was the leading cause of death in Korea with one in every four people diagnosed with cancer, it follows that stimulus material be included in curricula including that within problem or practice-based learning (PBL). Learning activities would also centre on the need for use of the best evidence for practice around the management of pain as a symptom. PBL advocates education that is both informed by and informs contemporary practice; the PBL methodology encourages the healthcare professional students to be information fluent, to use relevant data bases as a source of the best available evidence to inform safe and effective care.

Patients with cancer suffer from the disease and its treatment, and many also suffer with unrelieved and intractable pain ([Byun & Choi, 2013](#)). The relief of cancer pain is recognised as the most significant issue in cancer care and a key area for improvement in order to enhance quality of life among the patients with cancer and their families in both national and international contexts. Nurses are central to the management of pain related to cancer and like other healthcare professionals need to keep abreast of changes in practice based on the best evidence available. The use of evidence-based guidelines (EBGs), as a model of patient care for people with cancer, is considered an essential element in improving care quality through improving patient outcomes ([Bhatnagar & Gupta, 2015; Dy et al., 2008](#)).

Successful dissemination of an EBG requires strategies for use and uptake by all stakeholders

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including nurses. The World Health Organisation (WHO) report suggests that all healthcare professionals need to be given opportunities to be involved in developing an EBG and embedding evidence into professional practice and education (WHO, 2017). For example, dissemination of guidelines to nurses who are involved in pain management requires appropriate educational strategies to translate the guidelines into their practice (Medves et al., 2010; Powell et al., 2017). However, in reality, two studies by Cho (2009) and Yu (2011) investigated nurses' knowledge about and performance with cancer pain management. They reported that it was not clear how nursing practice was influenced by any guidelines. Van den Beuken-van Everdingen et al. (2016) also pointed out in their systematic review that despite the effort to encourage use of guidelines to improve patient outcomes around pain management, there was little evidence showing improvement in the study settings including acute settings. Baatiema et al. (2017) argue that the uptake and adoption of EBGs are often delayed or fail because of a range of barriers across organisational healthcare professional domains, patient care and policies (guidelines). There is some evidence about the barriers, facilitators and interventions that impact on the uptake of evidence from systematic reviews (Wallace, Byrne, & Clarke, 2014). Little is known about what constitutes high quality in guidelines themselves and how this may impact on the uptake of guidelines, although development of guidelines with high quality is one of the fundamental influential factors.

Given that healthcare professionals need to use relevant databases to access and manage information that informs their practice, this paper aims to provide an exemplar of how to conduct a review on EBGs, in this case, cancer pain management guidelines, and discuss the implications for nurse education and practice.

METHODS

The search for 'Guidelines' was conducted first through the reference list of the report of Green et al. (2010), then a more extensive online search for the cancer pain management guidelines followed. Only four guidelines were cancer pain management focused in the review by Green et al. (2010). The American Pain Society [APS]'s 'Guideline for the management of cancer pain in adults and children' was not available in the full version, because these guidelines were no longer viewed as guidance for current medical practice, and are archived (APS, 2004). Three guidelines; The 'Cancer pain management manual' (Canadian Association of Nurses in Oncology [CANO], 2004), the 'Guidelines for the management of cancer-related pain in adults' of the Cancer Care Nova Scotia (CCNS) (Cancer Care Nova Scotia, 2005), and the 'Control of pain in patients with cancer: a national clinical guide-

line' (Scottish Intercollegiate Guidelines Network [SIGN], 2008) were selected for review. The 'NCCN Clinical Practice Guidelines in Oncology: Adult Cancer Pain' (NCCN, 2017), 'Best Practice Statement: The management of pain in patients with cancer' (NHS Quality Improvement Scotland, 2009) and 'Cancer Pain Management in Adults' (AACPMGWP, 2016) were also selected and reviewed.

Cancer Care Ontario's Cancer-related Pain Management Guideline Panel conducted a systematic review of pain management guidelines using the Appraisal of Guideline Research and Evaluation I (AGREE I); eight guidelines of a set of twenty-five were finally evaluated (Green et al., 2010). They developed an evidence-base and achieved consensus on recommendations for practice. Green et al. (2010) recommended 11 elements for inclusion in cancer pain management guidelines - "assessment of pain; assessors of pain; time and frequency of assessment; components of pain assessment; assessment of pain in special populations; plan of care; pharmacologic intervention; non-pharmacologic intervention; documentation; education; and outcome measurement of cancer pain management". They emphasised patient and family centred care, customised care and an interdisciplinary team approach to provide optimal cancer pain management. Those recommended elements are also reflective of others that the internationally recognised EBGs should include such as an inter-professional and collaborative approach, person centred care (PCC), use of evidence-based assessment tools, trusting patients' self-reports of pain, and the use of pharmacological and non-pharmacological interventions. The review of further international guidelines for cancer pain management were guided by those recommendations (See Table 1).

The AGREE II criteria (Brouwers et al., 2010) were used as this was the most recent version available focussing on the quality of guidelines. The researcher endeavoured to find relevant information about each guideline development process prior to undertaking the appraisal as not every guideline report included a description of how the guideline was developed; it was often difficult to obtain a sufficient level of information to retrieve the entire process. There were times when the researcher had to skip certain items or rate the item as 1 (lower possible quality) and consider it as absence of information as instructed by the user's manual. It required at least two reviewers to individually assess and come to a consensus about decisions for recommending each guideline. Therefore, two authors were involved in appraising the quality of guidelines. Decisions on the scores for each domain for each individual guideline is presented in Table 2.

RESULTS

Based on recommendations of Green et al. (2010), selected guidelines have been reviewed for appropriate content (Table 1). No single international guideline had all 11 recommended elements of content and most guidelines did not have outcome measurements.

The quality as EBGs was also reviewed using AGREE II (Brouwers et al., 2010) domains: Scope and purpose; stakeholder involvement; rigour of development; clarity of presentation; applicability; and editorial independence (Table 2). There were domains with a low score, and because of the presence of a 'Not Applicable' option, the item was rated as 1. Despite the low rating for some domains, the reviewed guidelines were considered as 'strongly recommended', because there was no set of minimum domain scores or patterns of scores to differentiate between high and poor quality guidelines. In this situation, the AGREE II Consortium suggested that decisions made by the user needed consideration of the context, when the AGREE II was used (Table 3).

Clear statements of the scope and the purposes of the guidelines are essential. They include the overall aim, which informs the goal of nursing care; specific health topics, pain management for the patients with cancer; and the target population for whom the guidelines are to be used. This should prompt the nurses to consider the

Table 1. Review list of guidelines for cancer pain management

	AGREE Score	CANO (2004)	CCNS (2005)	SIGN (2008)	NCCN (2017)	NHS (2009)	AACPMGWP (2016)
Recommendations	Strongly recommended	Strongly recommended	Strongly recommended	Strongly recommended	Strongly recommended	Strongly recommended	Strongly recommended
	Assessment of pain	Yes	Yes	Yes	Yes	Yes	Yes
	Assessors of pain	Yes	Yes	Yes	Yes	Yes	Yes
	Timing/ frequency of assessment	No	Yes	Yes	Yes	No	Yes
	Components of pain assessment	Yes	Yes	Yes	Yes	Yes	Yes
	Assessment of pain in special populations	Yes	Yes	Yes	No	No	Yes
	Plan of care	Yes	Yes	No	Yes	No	No
	Pharmacological intervention	Yes	Yes	Yes	Yes	Yes	Yes
	Non-pharmacological intervention	Yes	Yes	Yes	Yes	Yes	Yes
	Documentation	Yes	Yes	No	No	No	Yes
	Education	No	Yes	Yes	Yes	Yes	Yes
	Outcome measures	No	No	No	Yes	No	No

CANO, Canadian Association of Nursing Oncology; CCNS, Cancer Care Nova Scotia; SIGN, Scottish Intercollegiate Guidelines Network; NCCN, National Comprehensive Cancer Network ; NHS, National Health Service Quality Improvement Scotland; CGW, Cancer Guidelines Wiki

Table 2. Appraisal for cancer pain management related guidelines using AGREE II

Guideline	Scope & Purpose	Stakeholder Involvement	Rigour of Development	Clarity of Presentation	Domains (%)		Overall
					Applicability	Editorial Independence	
CANO (2004)	81	61.9	39.3	90.5	39.3	21.4	Strongly recommended
CCNS (2005)	100	76.2	66.1	85.7	50	78.6	Strongly recommended
SIGN (2008)	100	90.5	91.1	95.2	75	14.3	Strongly recommended
NCCN (2017)	85.7	57.1	67.9	71.4	28.6	35.7	Strongly recommended
NHSQIS (2009)	81	66.7	35.7	85.7	46.4	14.3	Strongly recommended
ACPMGWP (2016)	81	76.2	71.4	90.5	57.1	92.9	Strongly recommended

special circumstances of this particular group of patients (Brouwers et al., 2010). The reviewed international guidelines for managing cancer pain clearly presented their scope and purposes.

The CCNS guidelines (Cancer Care Nova Scotia, 2005) noted that guidelines should be able to support all healthcare profes-

als, including nurses working in a variety of settings with their decision making; they should contain a certain level of recommended evidence-based information about a range of issues in cancer pain management.

There should also be evidence of how the set of guidelines was

Table 3. Key items of AGREE II and their application on appraisal of guidelines

	Key items	CANO (2004)	CCNS (2005)	SIGN (2008)	NCCN (2017)	ACPMGWP (2016)	NHSQIS (2009)
Domain I Scope & Purpose (21/3)	1. The overall objective(s) of the guideline is (are) specifically described. 2. The health question(s) covered by the guideline is (are) specifically described. 3. The population (patients, public, ect.) to whom the guideline is meant to apply is specifically described.	5 6 6 (81)	7 7 7 (100)	7 7 (100)	6 6 (85.7)	6 6 (81)	6 6 (81)
Domain II Stakeholder Involvement (21/3)	4. The guideline development group includes individuals from all relevant professional groups. 5. The views and preferences of the target population (patients, public, ect.) have been sought. 6. The target users of the guideline are clearly defined.	4 2 7 (61.9)	4 5 7 (76.2)	7 7 (90.5)	5 6 (57.1)	5 6 (76.2)	4 4 (66.7)
Domain III Rigour of Development (56/8)	7. Systematic methods were used to search for evidence. 8. The criteria for selecting the evidence are clearly described. 9. The strengths and limitations of the body of evidence are clearly described. 10. The methods for formulating the recommendations are clearly described. 11. The health benefits, side effects and risks have been considered in formulating the recommendations. 12. There is an explicit link between the recommendations and the supporting evidence. 13. The guideline had been externally reviewed by experts prior to its publication. 14. A procedure for updating the guideline is provided.	4 2 2 2 5 5 1 1 (39.3)	4 2 2 5 6 5 2 6 (66.1)	6 6 7 7 5 6 1 7 (91.1)	6 5 4 4 5 6 1 6 (67.9)	5 6 5 5 6 6 6 4 (71.4)	2 1 1 1 5 6 4 2 (35.7)
Domain IV Clarity of Presentation (21/3)	15. The recommendations are specific and unambiguous. 16. The different options for management of the condition or health issue are clearly presented. 17. Key recommendations are easily identifiable.	6 7 6 (90.5)	7 5 6 (85.7)	7 7 6 (95.2)	5 5 5 (71.4)	6 7 6 (90.5)	6 6 6 (85.7)
Domain V Applicability (28/4)	18. The guideline describes facilitators and barriers to its application. 19. The guideline provides advice and/or tools on how the recommendations can be put into practice. 20. The potential resource implications of applying the recommendations have been considered. 21. The guideline presents monitoring and/or auditing criteria.	1 7 2 1 (39.3)	2 5 2 5 (50)	5 7 2 7 (75)	1 4 2 1 (28.6)	4 6 4 2 (57.1)	4 6 1 6 (46.4)
Domain VI Editorial Independence (14/2)	22. The views of the funding body have not influenced the content of the guideline. 23. Competing interest of guideline development group members have been recorded and addressed.	1 2 (21.4)	5 6 (78.6)	1 1 (14.3)	4 1 (35.7)	6 7 (92.9)	1 1 (14.3)

developed and updated, but some of the guidelines did not have sufficient information on 'Rigour of development'. This domain was to provide explanations including how each recommendation in the guidelines was made based on evidence.

DISCUSSION AND CONCLUSIONS

Meaningful evidence should inform nurse education and practice around pain management. Any educative health professional initiative around pain management needs to reflect contemporary contexts, be reliant on 'showcasing' professional behaviour in response to stimulus material that is based on the best available evidence. Professional nurses also need to critique the worthiness and suitability of guidelines advocated for use in their daily practice. Nurses are able to provide patient-centred narratives on their experiences with pain. These are well suited for use within guideline development and testing, and as stimulus material in problem/practice or enquiry-based learning programs. In order to achieve quality management of cancer pain, nurses must play a pivotal role as a part of an interdisciplinary team Dowding et al. (2016), show how nurses make critical nursing decisions at every step of their practice. If researchers and policy makers are to value the nursing contribution, nurses managing pain among the patients with cancer must be less task-solving oriented, less passive and medically dependent.

There could be several influential factors that underpin the nursing contribution in the development of guidelines to inform the current place of nursing practice in managing cancer pain. These include historical, social and cultural images of nurses; legal boundaries of nurses' scope of practice; and the absence of a nursing framework for management of the particular symptom. Those factors are contributors to the conscious and unconscious undervaluing of nursing not only among medical officers and patient/families, but also among nurses themselves (Kim, 2019). This negative profile of the profession is undermining positive perceptions of what nurses do in caring for those patients with cancer especially around policy and practices in pain management (Kim, 2019).

Practice or problem-based learning (PBL) underpins a student-centred pedagogy to enhance their ability to make critical decisions (Ahn & Kang, 2017), when they face complex clinical situations including cancer pain management. As Yew and Goh (2016) state learners including nurses involved with PBL are considered as active knowledge seekers and co-creators who use their experiences and knowledge to organise the solutions to solve the problems such as cancer pain management. It is essential to identify the best evidence to help solving problems and use the evidence to inform their own nursing practice.

Use of EBGs in nursing practice is considered as an effective way of making critical nursing decisions based on evidence. Therefore, the need for evidence-based nursing practice using EBGs has increased significantly (Choi et al., 2014) and is now considered as nurses' ethical responsibility (Oncology Nursing Society, 2017). This indicates that developing guidelines in a systematic way, based on evidence from the nursing literature is a fundamental step of establishing EBGs in nursing practice for cancer pain management.

In this review, the authors used the outcomes of the integrated systematic review on same issues as the criteria for reviewing content of further guidelines, along with the use of a tool to review the quality of the guidelines. This process could ensure that the further development and/or updating of EBGs for pain management for cancer patients leads to revisions that are reliable and strong, and inclusive of meaningful nursing interventions.

The review of the guidelines suggested that there was a need for greater contribution from nurses in their development. It follows that South Korean nurses need to be more involved in considering amplification of their important role in pain management. Curriculum models using PBL provide a useful platform for showcasing stimulus material that focusses on the nursing role in pain management.

NOTES

Research Ethics

This review was a part of doctoral studies (Ethics approval No. H-2012-0071) undertaken by Miran Kim.

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General

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