TITLE: INTERPROFESSIONAL EDUCATION (IPE) IN CLINICAL PRACTICE FOR PRE-REGISTRATION NURSING STUDENTS - A STRUCTURED LITERATURE REVIEW.

ABSTRACT

Objectives: To explore the experiences of nursing students after clinical IPE activities through a review of contemporary literature then use the context of nursing programmes in Singapore to consider the transferability of the findings.

Design: Structured literature review

Data sources: A search of international qualitative literature no older than five years and published in English was conducted on CINAHL, Embase, Medline and Pubmed.

Review methods: A systematic and structured approach was guided by Cooper's five-step approach to review the literature. The Critical Appraisal Skills Programme qualitative checklist and the Appraisal of Guidelines Research & Evaluation reporting checklist were used to critically appraise literature in this review.

Results: 13 papers were included for qualitative synthesis. The literature most commonly reported that students had a better understanding of professional roles, improved communication and teamwork. In contrast, the most commonly reported negative experience involved some examples of disparity within the team.

Conclusion: Overall findings show that positive student experiences outweigh negative ones. Nursing programmes might be able to reap similar outcomes subject to contextual and cultural differences. However, further research is recommended

before IPE in clinical practice is implemented in current nursing programmes in the local setting.

KEYWORDS

1. Interprofessional Education
2. Nursing students
3. Experience

INTRODUCTION

In many countries, an aging population threatens an increased healthcare demand through the number of elderly patients with comorbidities (Cline, 2015). Therefore, there is an increasing need for health professionals across disciplines to draw on each other's expertise to create effective collaborative care (Annear et al., 2016). There is increasing political and academic interest in the potential of Interprofessional Education (IPE) to improve coordination amongst health professionals through promoting co-responsibility for patients' needs and health outcomes (Silva et al., 2015). IPE is defined as the occurrence 'when students or members of two or more professions learn with, from and about each other' to improve collaboration and the quality of care (WHO, 2010).

The World Health Organisation (WHO) advocates for IPE to prepare current and future health professionals to transit from a 'traditionally fragmented health system' to a 'collaborative practice' workforce where case management may be shared and the expertise of other healthcare professionals are optimised within the team. This strengthens the health system and can result in better care and improved health outcomes (WHO, 2010). Barr et al. (2005) propose that it is ideal for IPE to be introduced at an early stage in one's training to prevent the 'pigeonholing' phenomenon where students develop a stereotype towards different health professions, endangering their ability to work effectively across a multi-professional team (El-Zubeir et al., 2006, Liaw et al., 2014a). In the context of Singapore, the Ministry of Health has been promoting IPE as an instrument to train health professionals for collaborative practice (Muhammad et al., 2013). Many pre-registration nursing programmes in Singapore many have incorporated IPE activities in their curriculum. However, these IPE activities are currently confined within educational institutions, rather than the wider healthcare context (Ministry of Health, 2017).

Following the adoption of simulation training as part of IPE curriculum in undergraduate health profession education in the National University of Singapore (NUS), several studies were conducted to examine its effectiveness. Liaw et al. (2014a) used simulation training in IPE with the aim of tackling stereotypes amongst medical and nursing students. An improvement in perception towards the

other profession after exposure to the programme was reported. Another study by Liaw et al. (2014b) explored the use of simulation training to teach communication techniques amongst medical and nursing students to improve patient safety. Following the programme, an increase in confidence and positive perception towards interprofessional learning was reported.

Simulation is widely used as a mode of IPE delivery to nursing students in a single university in Singapore. However, simulation is only a replication of the clinical setting, without external factors such as distressed patients or the distractions of the ward. Therefore, this paper aims to review IPE conducted during clinical practice in order to authenticate the learning experience of students to mirror future clinical practice.

A review of global literature was undertaken to explore the experiences of students towards interprofessional collaboration when *learning with* students from other health professionals and when *learning from* other health professionals in practice, and with that, consider the transferability of findings using the context of nursing programmes in Singapore. An education outcomes model, the modified Kirkpatrick's model for IPE (Anderson et al., 2016), was used as a lens to discuss the quality of the reported experiences.

METHODS

A structured review of the literature (2011- 2016) guided by Cooper's (1989) five-step process was undertaken to ensure a comprehensive search of literature and systematic analysis of results. Firstly, the problem was formulated, focusing on the experiences of students towards interprofessional collaboration in practice, and with that, use the context of nursing programmes in Singapore to consider the transferability of the findings.

Secondly, a search of literature and gathering of information was conducted in the following electronic databases: CINAHL, Embase, Medline and Pubmed. A search for grey literature was also done on government websites. Medical Subject Headings (MeSH) terms, keywords and Boolean operators were used to conduct repeated searches in multiple electronic databases until similar papers resulted in the searches. Key words included 'Interprofessional education; Nursing students; Experience' and its related terms. Due to the nature of the aims of this review, only qualitative literature was included for synthesis to explore the experiences of students in depth (Holloway and Wheeler, 2002). Qualitative literature provides an opportunity to report the subjective experiences of pre-registration nursing students and may cover many different aspects (Polit and Beck, 2004). Therefore, only qualitative literature published in English were reviewed. Some older grey literature were also included as they provided relevant context to the reviewed studies.

As nursing programmes in Singapore will be used as a context to consider the transferability of literature findings, reviewed literature was no older than five years as IPE gained popularity in educational institutions in Singapore since 2011 after an address by the Permanent Secretary for Ministry of Health Singapore in 2010, highlighting the importance of IPE for future health systems (Jacobs et al., 2013).

Thirdly, an evaluation of study quality was done using the Critical Appraisal Skills Programme (CASP) qualitative checklist (CASP, 2017), and the Appraisal of Guidelines Research & Evaluation (AGREE) reporting checklist (Brouwers et al., 2016) was used to appraise the IPE framework and guideline included in this

review. Fourthly, an analysis and interpretation of the data was done. Data extraction from each study was guided by a standardised template from Larrabee (2009) to aid in identifying similarities and differences of the findings. Last but not least, the fifth step involved presentation of the findings.

RESULTS

A total of 1155 records were identified from the four electronic databases. Duplicates were removed, titles and abstracts of records were screened, resulting in 24 full-text articles assessed for eligibility. During full-text article assessment, a total of two seminal papers were identified. Therefore, bringing the total number of full-text articles assessed to 26 (See figure 1). 13 studies were included in this review while 13 studies were excluded with reason (appendix A).

Results gathered comprised of IPE activities in clinical practice encompassing the following:

- Nursing students 'learning with' students from a different health profession;
- 'Learning from' health professionals of a different discipline;
- Programmes that encompass both 'learning from' healthcare professionals and 'learning with' students from a different health profession.

A summary of the included studies can be found in appendix B.

FINDINGS

Review of the included studies found that the student experience could be categorised as being broadly positive or negative.

Overall positive student experiences

1. Better understanding of own professional role and of others

Students had a better understanding of their own professional role when working in interprofessional teams (WHO, 2010, Lait et al., 2011, Hallin and Kiessling, 2016). In addition, Bahnsen et al. (2013) reported that the independence students experienced when working in interprofessional teams helped them understand their own nursing roles better. There was also a consensus that students were able to gain insight to other professions' roles (O'Carroll et al., 2012, Lyons et al., 2013, Brault et al., 2015, Hallin and Kiessling, 2016). This helped to prevent stereotypical views towards other health professions (Wright et al., 2012).

2. Communication

Some students witnessed good communication among interprofessional team members and wished to emulate them in the future (Wright et al., 2012). Students who participated in interprofessional teamwork felt safe communicating with team members (Hallin and Kiessling, 2016). In addition, Brault et al. (2015) reported that having common work spaces with other health professionals positively impacted communication amongst one another.

An improvement in communication across professions was reported (Kelley and Aston, 2011) which ensured everyone was kept in the loop (O'Carroll et al., 2012), resulting in successful participation within teams (Lyons et al., 2013) and better quality of care for patients (Kelley and Aston, 2011). Wright et al. (2012) reported that communication with patients improved as well, resulting in patients being more engaged in their care plan. These findings in relation to effective communication agree with benefits of IPE reported in WHO's (2010) IPE framework.

3. Teamwork

WHO (2010) reported that benefits pertaining to teamwork may be achieved through IPE. Literature findings support this benefit. Students were pleased to discover that interprofessional teams experienced teamwork and not the traditional hierarchical relationships expected in clinical practice (Wright et al., 2012). Instead, they experienced equality amongst interprofessional team members (Lyons et al., 2013), and felt safe to collaborate within the team (Hallin and Kiessling, 2016). In addition, Kelley and Aston (2011) reported that team discussion was helpful in formulating care plans with students from other health professions. The key to such positive interactions were trust and respect within the team (Fougner and Horntvedt, 2011, Meffe et al., 2012, Barr et al., 2016).

4. Appreciating different perspectives

Most students recognised that different input from other professions resulted in a deeper understanding of patients (Lait et al., 2011, Lyons et al., 2013) through sharing of knowledge (Fougner and Horntvedt, 2011). This allowed to gather different perspectives regarding the same situation (O'Carroll et al., 2012) and recognise diverse expertise within the team (Brault et al., 2015).

5. Confidence

An increase in confidence after being exposed to IPE in clinical practice was reported (Meffe et al., 2012, O'Carroll et al., 2012, Hallin and Kiessling, 2016). This was exhibited through interaction within the interprofessional team (O'Carroll et al., 2012) and an increase in confidence to communicate with other health professionals (Meffe et al., 2012). This led some students to believe they were capable of interprofessional practice in future (Hallin and Kiessling, 2016).

6. Patient-centred focus

Students recognised that effective interprofessional care took place when patient-centred care was the common goal for collaboration (WHO, 2010, Meffe et al., 2012). In addition, positive knowledge exchange took place when patients were the focus in interprofessional collaboration (Fougner and Horntvedt, 2011, Annear et al., 2016).

7. Provider commitment

Commitment from preceptors was much appreciated by students to help seek out interprofessional learning opportunities during clinical practice (Lait et al., 2011). In addition, students felt that their positive learning experience could only be achieved if their clinical supervisors supported their learning (Hallin and Kiessling, 2016).

Overall negative student experiences

Despite the vast amount of positive experiences reported, it seems that student experiences cannot be presumed to be universally positive. Negative experiences fell into 3 categories:

1. Disparity within the team

Bahnsen et al. (2013) reported that students spent most of their time on nursing care in the Interprofessional Clinical Study Unit (ICSU) as students from other professions were not keen to take part in nursing care. Fougner and Horntvedt (2011) and Annear et al. (2016) echo this lack of engagement from team members through segregation of care tagged to different professions. In addition, a perceived disparity of knowledge between different professions caused nursing students to position themselves as subordinate within the interprofessional team (Annear et al., 2016).

2. Unsatisfactory learning experiences

When evaluating their learning experience, some students in unstructured IPE programmes, where students had to independently seek out learning opportunities, felt that more support and clearer information should have been provided (Kelley and Aston, 2011). Additionally, some students also claimed that clinical skills learnt in the training ward were not transferrable to their main wards of a different specialty (Bahnsen et al., 2013).

3. Observations in clinical practice

Observations of negative interprofessional behaviour during shadowing activities resulted in maintenance of personal stereotypical views towards other health professions (Wright et al., 2012). In cases where positive examples of interaction

were observed, some students feared they might not be able to recreate this and perform as well in future interprofessional teams (Fougner and Horntvedt, 2011).

DISCUSSION

A modified Kirkpatrick's model of education outcomes for IPE (Anderson et al., 2016) (Table 1) will be used as a lens to discuss the educational quality of the reported experiences. The model consists of a four-level framework, where the lowest learning outcome (level 1) measures the learner's reactions and the highest (level 4a/b) measures changes in organisational practice and benefit to service users and carers. This model is recommended for assessing effectiveness of educational programmes (Praslova, 2010).

The educational outcomes measured through the experiences of most students reported in this review achieved only level 2 of this model: Appreciating different perspectives and prevention of stereotypes through better understanding of own professional role and of others (level 2a) and; improved communication skills, teamwork and confidence within the interprofessional team (level 2b). Perhaps due to the generally short intervention period, most of the literature was unable to determine a change in behaviour (level 3) as well as to bring change in organisational practice and benefit to patients (level 4). Therefore, the ultimate goal of strengthening the health system and improving health outcomes through IPE may not be ascertained at this juncture unless a change in behaviour and organisational practice may be proven. Further research is recommended to investigate if higher levels of learning outcomes (e.g. behaviour change) may be achieved with prolonged and multiple data collection after exposure to clinical IPE activities.

Some students appeared fixated on technical knowledge and skills (level 2b) during IPE in clinical practice. They were concerned that skills learnt in the interprofessional training ward were not transferrable to their main wards of a different speciality (Bahnsen et al., 2013). However, as WHO defines IPE as learning from other professionals 'to improve collaboration' (WHO, 2010), the problem may be the lack of recognition of the value in developing good communication skills and teamwork in IPE.

Some studies that involved working within interprofessional student groups in a training ward (Bahnsen et al., 2013, Hallin and Kiessling, 2016) reported a better understanding of their own professional role and that of others. Arguably, this could be because students involved in these studies were in their final year of training. As such, each student may be able to display his professional identity (developed through their training years) and, in exchange, learn more about other professionals in an interprofessional team. It may be that some IPE activities might be more appropriate for students in their respective years of training. However, as there is insufficient evidence in distinguishing *which* IPE activity might be most suited for students of different years in their training, further research is recommended in this field.

Due to the authenticity of the learning environment, clinical IPE activities immerse students into the realities of clinical practice while working in interprofessional teams. For example, the experience of disparity within the interprofessional team through the lack of engagement from others when performing nursing care (Bahnsen et al., 2013, Annear et al., 2016) may act as an eye-opener to students. This might enable students to develop strategies to voice inequities to team members to improve patient care in future.

This review has reported the benefits of IPE in clinical practice in European, American, Canadian and Australian settings, some of which were multi-centre (Fougner and Horntvedt, 2011, Kelley and Aston, 2011, Lait et al., 2011, O'Carroll et al., 2012, Brault et al., 2015) but what is not yet known is the cultural and contextual factors specific to the local setting that might affect outcomes. The involvement of multiple study sites internationally could possibly tease out contextual and cultural differences that were inconclusive in this review.

Taking the context of Singapore nurse education into consideration where IPE is mostly confined within educational institutions, there are a few considerations that might be useful for similar countries that have not yet considered clinical IPE activities for pre-registration nursing programmes:

Firstly, as it is difficult to identify the particular experiences of nursing students from most of the literature, it is therefore inconclusive whether all

benefits/positive experiences reported by healthcare students (nursing students inclusive) are transferable to nursing programmes. Therefore, further research is recommended to determine the experiences specific to nursing students which may bring benefit to nursing programmes in the local setting.

Secondly, research is required in the local setting to explore contextual and cultural issues such as barriers that healthcare institutions may have towards collaborating with educational institutions to develop such programmes. Should healthcare institutions be unwilling to work in collaboration with education institutions, IPE in clinical practice for pre-registration nursing students is unlikely to be successfully implemented.

LIMITATIONS

A limitation to the conclusions that could be drawn from the reviewed literature was that most studies grouped the experiences of healthcare students together. As the findings lack specificity pertaining to experiences of nursing students, the extent to which conclusions might inform nursing programmes was limited.

As this review had to be completed within a limited timeframe and had to be the unique work of the student to satisfy the requirements of a postgraduate degree, this may have resulted in unintentional bias. To counter this limitation, the author worked under the supervision of a university lecturer who ensured rigour of process throughout. Common with many reviews, the literature search was limited to papers published in English. Future reviews can overcome these limitations if more resources are available so that a full systematic review with a protocol similar to Cochrane (Higgins and Green, 2011) can be achieved.

CONCLUSION

The findings in this review have contributed to knowledge in the education domain, pertaining to IPE in clinical practice in American, Australian, Canadian and European contexts. Students generally had more positive than negative learning experiences. However, as the findings tend not to be reported specifically for nurses, the extent to which these experiences are unique to nursing students requires further research to determine if findings are transferable to nursing programmes in particular.

When considering transferability of the findings, IPE in clinical practice might bring similar benefits and positive learning experiences reported in this review, subject to contextual and cultural differences. It also offers added learning experiences through the immersion in real practice. However, there is insufficient evidence to recommend clinical IPE activities to nursing programmes in Singapore at this juncture. Student experiences mostly fulfilled level 2 of the Kirkpatrick education outcome model (Anderson et al., 2016). As such, only similar learning outcome levels may be expected in the local context.

Even though the implications of this review are limited, it has paved the way for pragmatic recommendations for education and research to clarify ambiguity before IPE in clinical practice may be recommended in countries similar to Singapore where clinical IPE activities for pre-registration nursing students remain a novelty:

- **Explore barriers towards collaboration between healthcare and educational institutions in the local setting**

- **Determine if higher levels of Kirkpatrick education outcomes (Anderson et al., 2016) are achieved with prolonged and multiple data collection after exposure to IPE in the clinical setting**

- **Determine experiences specific to nursing students**

- **Determine *which* clinical IPE activity might be the most effective for nursing students in their respective years of training**

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