

The Attitudes of Pre-registration Nursing Students toward the Teamwork and Collaboration in Inter-professional Classroom Learning Context

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Submitted: 26 Feb 2020; Accepted: 10 Mar 2020; Published: 18 Mar 2020

Introduction

Historically, nurse-doctor relationship evolved as a hierarchical healthcare system which promoted stereotypical attitudes towards each other and can be explained by the social identity theory which illustrates inter-group discrimination. Stereotyped attitudes can prevent effective inter-professional collaboration and teamwork that began at undergraduate level [1]. IPE has been developed during recent decades with the initial aim to reduce the flaws of the health care service and enhance the collaboration of health and social care professionals [2].

The first documentation of the importance of IPE integration into the health care curriculum was published by the WHO, encouraging the development of IPE in 1988. The recommendation of IPE development by WHO was not an international agreement, but was based on different national health care policies and the awareness of the improvement of the health care delivery system around the world. Barr et al. (2005) discussed how professional barriers can result in silos, and if such barriers are not removed, delivery of health care will suffer [2].

The IPE concept has been widely discussed and defined by different health care educational institutions in different countries. One of the most reported definitions in the literature is given by the Centre for the Advancement of Inter-professional Education CAIP (2006), which defines IPE as:

Inter-professional education is those occasions when members (or students) of two or more professions learn with, from and about each other to improve collaboration and the quality of care (p.6) [3].

IPE is termed differently based on varying educational views and beliefs. Terms such as inter-disciplinary learning [4] are used, as is multi-professional education, which was defined by Freeth et al. (2005) as the process that occurs when two or more professions learn alongside each other, but with no interactive learning [5].

Moreover, another related phrase is 'inter-professional learning' (IPL), which stands for the spontaneous learning which occurs between students of two or more professions as an effect of IPE or in the workplace [5].

After reviewing and linking the above mentioned discussion of IPE definitions, it can be defined by this study as the learning opportunity which occurs between two or more pre-registration health care students. Specifically, the studies must include nursing students who actively interact with other professional groups in a classroom setting with a view to improving the collaboration and team work competency.

Drawing from the aforementioned definition by CAIPE, several educational institutions have adopted IPE in their curriculum for health care professions and have revealed several outcomes over the past decade. According to Freeth et al. (2002) IPE is divided into six categorical outcomes which act as changing agents for the traditional educational approach affecting the human and non-human elements in the health care system, as well the educational system [6]. These outcomes include; reaction, change of attitudes and perception, acquisition of knowledge and skills, behavioural changes, changes in organisational practice and benefits for patients and clients. Based on this valuable source of knowledge, the focus of this systematic review is only to examine one category of the six outcomes which evaluates the pre-registration nursing students' attitudes toward teamwork and collaboration either before or after undertaking an IPE curriculum in a classroom setting.

There are complex issues and factors facing the educational institutions which provide IPE at pre-registration level for health care students. From the institutional perspective, practical logistics in terms of timetables and accommodation are often of concern, as are the current attitudes of the professional staff who will be involved in delivery of any IPE intervention. Mentoring of such staff as facilitators is crucial [7].

On the other hand, from the students' perspective, negative attitudes of students toward the IPE can create resistance to learning with other health care professions, resulting in conflict with the collaboration principle of IPE programme [8]. The critical evaluation of the effectiveness of IPE on pre-registration nursing students is vital to find evidence which will support and overcome difficulties when this program is implemented in Oman's nursing education system. In addition, motivation to learn interactively is the core concept of

IPE according to CAIPE's (2006) definition and if this is lost, IPE will no longer fulfil the goal of learning [3].

In evidence based practice IPE is reported in the research as formal, informal and mixed type, with the majority being formal IPE programmes. IPE has developed in health care education at pre and post registration levels with, some claim, the majority in post-registration level [6]. Based on the author's background and educational practice as a novice lecturer in pre-registration programmes in Oman, IPE at pre-registration level is selected to assess the nursing students' attitudes toward the teamwork and collaboration at this level of their professional development.

Another essential concept that must be discussed in this systematic review is the attitude which is operationally defined as the way that pre-registration nursing students view the effects of IPE curriculum as positive, negative or neutral; i.e. is their attitude toward the development and retention of inter-professional collaborative teamwork supportive?

Many studies have focused on the health care students attitudes towards the roles of other professionals. For instance, Rudland and Mires (2005) medical students viewed nurses as lower in academic ability, competency and status [9]. It is believed that large numbers of health care practitioners have a lack of essential knowledge, skills and training in interprofessional teamwork which could enhance collaborative practice between professionals, yet keep the ordinary role concept of each profession [10].

As a result effective inter-professional teamwork is influenced by the attitudes of healthcare professionals towards other groups [11]. The negative attitudes can raise tensions between health care professionals, which as a result can contribute to work dissatisfaction and ineffective communication, which reduces the quality of patient care [12].

However, inter-professional teamwork training has not until recently been stressed in the health care curriculum, nor have the attitudes of the pre-registration students been studied. Effective inter-professional teamwork can be enhanced by positive stereotyping between health care professionals by promoting collaborative teamwork [13].

The attitudes of health care science students have been examined regarding the roles and competencies for collaboration with other professions. Spence and Weston (1995) reported that nursing students were clearer about the competencies important for doctors than the doctors, who were not clearly aware of the competencies important to nursing [14]. As there is a dearth of literature in the Middle East regarding the effects that inter-professional learning has on students' attitudes towards collaborative team work [4]. A careful literature review is required to examine the real picture and the evidence that supports the effectiveness of IPE on pre-registration nursing students' attitude changes toward the collaborative teamwork.

Teamwork is defined by Kekki (1990) as co-ordination carried out by two or more people with a common goal, mutual respect and trust, good leadership and communications and with acceptance to evaluation [15]. Barr et al. (2005), however, defined it as efficient co-operation between individuals [2]. Teamwork is defined for this dissertation as the co-operation between undergraduate nursing students and other health care students to promote efficient collaboration.

Moreover, collaboration between health care professionals is compulsory to provide effective and efficient patient care which is considered core to effective teamwork [16]. Barr et al. (2005) defines IP collaboration as the improvement of the quality of care and that collaboration is achieved through learning with, from and about each other in the health care team [4]. However, Glen and Reeves (2004) disputes that impartial and exclusive contributions and incorporated, integrative efforts of different health care professionals on interpersonal and organizational levels can improve the IP collaboration [17].

Simultaneously, researchers have evaluated the attitudes towards the collaboration practices and learning domains [7, 18, 19]. The evaluation of attitudes towards the collaboration is carried out because how an individual perceives a specific profession has an impact on the collaborative practice between health care professionals [20]. Nevertheless, collaboration between health care professionals depends on several factors such as sharing common aim, developing mutual respect and trust, building efficient communication, identifying power differences and resolving organisational barriers [21]. Consequently, the health care students must be oriented to the collaborative factors at pre-registration to ensure the success of IPE collaboration practice [22].

Several other issues around the design and implementation of IPE programmes must also be mentioned. These include the assessment within such programmes, how they should be evaluated and finally the support or otherwise of e-learning as an IPE intervention. Assessment and evaluation are, at times, confused by some researchers when assessment refers, in general, to the issue of assessing the students' performance on the IPE programme whilst evaluation is usually about an evaluation instrument which monitors for example, the change in attitudes [13].

In Effective Inter-professional Education: Development, Delivery and Evaluation [5] assessment is dealt with in detail and currently there appears to be more methods of assessment than types of programme delivery and it is beyond the scope of this review to explore this area further.

For evaluation instruments, the most important issue is the psychometric properties i.e. validity and reliability of any instrument used. Various authors have addressed such issues with McFadyen et al. in a series of papers (2005, 2006 and 2007) reporting how to tackle this [23-25].

Analysis of data

Methodological analysis of the eight selected papers for this review showed that two studies [26, 27] have low total samples of 20 and 52 respectively and by extension low nursing students samples of 40% and 20% respectively. It must be noted that large sample sizes reduce bias of research outcome [28]. Nevertheless, the percentage distribution of nursing students in all the eight selected studies justified their inclusion for the review.

Furthermore, moderately large sample sizes in the remaining six studies, with each of the six studies having their total sample well above 100, with between three to six different participating professional groups.

Whereas, six studies [26, 27, 29-32] all have well-defined sample distributions with the nursing students' share of the sample at about 40% in three studies [26, 29, 31], 10% in two studies [30, 32] and 20% in Bradley et al. (2009). However, in Curran et al. (2010), undefined nursing samples reported due to longitudinal design [33]. In the three quasi-experimental studies, randomisation, blinding procedure and contamination protection was maintained in only [27]. The absence of randomisation increased the selection bias, lack of blinding participants to the intervention and the absence of contamination between control and experimental group increased the chance of false effects of the intervention being found [28].

Although ethical approval was only clearly stated in four studies [27, 32-34]. The lack of ethical approval in research involving human participants is considered as misconduct, in particular if control and experimental groups are included or in case of control before and after design [35].

Ultimately, the use of a self-report questionnaire in all the studies decreases the validity of findings due the influence of feelings which is directly linked to attitudes towards the IPE teamwork and collaboration, which can introduce bias to the results [35].

Main findings

The findings of this systematic review showed that nursing students had positive attitudes towards enhancing relationships with other professionals as this improves working relationships post registration [26, 29, 30]. According to Hewstone and Brown (1986), negative attitudes about different group members can be changed through positive contact [36]. As a result, the positive attitude development of learners can be maintained if they are given adequate opportunities to express themselves openly in a safe environment with sufficient time given for reflection [37]. Furthermore, Carpenter and Hewstone (1996) pointed out that an effective learning environment was maintained by using contact hypothesis which can lead to improve attitudes of inter-professional group learners [36].

RIPLS was the most common measurement tool, used in five of the studies of which four were from the UK. In the study by Reid et al. (2006), RIPLS is recommended to assess the readiness of undergraduate students to engage interactively in inter-professional learning [19]. However, Thannhauser et al. (2010) indicated that the stability of the original three subscales of RIPLS had been tested by McFadyen et al. (2005, 2006) and psychometric properties had been developed to increase the validity and reliability of the measurement tool hence the adapted version [34] should be considered first [16, 23, 24].

Given that IPE is a new movement in health care education, careful appraisal of students' readiness to learn in this approach is required [4]. Instruments for evaluating teamwork and collaboration such as RIPLS, as widely reported in the literature, still need robust research to assess their validity in order to enhance the reliability of their findings [5].

Discussion

The findings of this IPE systematic review of eight eligible studies showed that conducting IPE in the classroom was effective in changing attitudes of pre-registration students since positive attitudes were reported towards teamwork and collaboration in relation to improved teamwork knowledge (27%), developed teamwork

skills (53%) and enhanced relationships with other professionals (20%). Therefore, IPE's primary aim of developing collaborative practitioners is achieved when the students have the knowledge, skills and attitudes of teamwork and collaboration.

The early years

The findings of the Horsburgh et al. (2001) and Morison et al. (2004) studies showed positive attitudes about IPE in improving knowledge and enhancing skills of teamwork and collaboration of pre-registration nursing students [26, 29]. Furthermore, these two studies revealed that as well as teamwork and collaboration, good communication, willingness to work together, mutual trust and respect to others are important. This finding agrees with D'Amour et al. (2004) who stressed these issues as key determinants of collaborative practice [38]. As supporting evidence, Barr (1998) also outlined that knowledge such as how to be an effective team member and understanding one's own limitations were essential [39]. He also indicated that the skills acquired to resolve conflicts, the approach to work with other health care professions, and the respect and willingness to work positively with others as essential. The researcher found in this systematic review that introducing IPE into the curriculum will enhance nursing students' teamwork competency skills such as communication. This is widely discussed by other studies such as [26, 40, 41]. This is because effective communication is essential in inter-professional working relationships to develop the quality of collaborative patient care [41, 42].

The results of Horsburgh et al. (2001) and Cooper et al. (2005) showed that first year nursing students had positive attitudes towards teamwork and collaboration [29, 30]. This is congruent to the findings of Pollard et al. (2005) who concluded that pre-registration health care students in their second year had positive attitudes towards teamwork in entry level [40]. This study is important to consider since it used the same measurement tool (RIPLS) as both above studies hence strengthening the results. This positive attitude in junior students can be explained by the cognitive map formation regarding teamwork and collaboration for early stage health care professionals which can be shaped by the IPE curriculum [43].

The long term

In contrast to entry-level studies, two studies carried out by Curran et al. (2010) and McFadyen et al. (2010) employed longitudinal quasi-experimental studies across levels 1 to 4 [33, 34]. They pointed out there was little overall change in students' attitudes towards inter-professional teamwork or IPE as a result of the introduction of the IPE curriculum evaluated in the study. The findings also, however, indicate that nursing students showed positive attitudes towards both inter-professional teamwork and IPE over the duration of the curriculum project but with no longitudinal effect of the intervention. This result is supported by the Pollard et al. (2006) longitudinal 3 year study which reported that pre-registration health care students showed no significant change in their attitudes about teamwork and communication skills from entry level to qualification [44].

Learning

Morison et al (2004), Curran et al. (2005), Goelen et al. (2006) and Bradley et al. (2009) all showed that nursing students have a strong inclination towards learning with other students and believed this will help them to become more effective members of healthcare teams [26, 27, 31, 32]. Medical students' views were, however,

indifferent as they considered that shared learning with other health care students will have no impact on their ability to understand clinical problems and are more socially incompatible with other students. This may be based on social constructivist theory which highlights the importance of learning about culturally shared ways of understanding [43]. These findings confirmed those of Parsell and Bligh (1999) who reported that nursing students tended to be more open to 'team-based approaches' to learning [18].

In relation to the positive attitudes of the students to teamwork and collaboration, it can be argued that this is partially due to the role of informal learning which takes place after the formal education interaction in the classroom was completed [45]. Informal learning can create collaborative learners [46-48] and it can enhance the socialization process between undergraduate healthcare professions which continue the learning process outside the classroom as well the active interaction [49, 50]. Pryce and Reeves (1997) found that medical, nursing and dental students continued their active learning while socializing together, for example, in the cafeteria thus they shared informal learning experiences [51].

The findings of this systematic review showed that in 33% of the studies a single IPE learning method was employed and in 67% a combination of IPE learning methods were used [26, 29]. The active learning principle of IPE was achieved through engaging the students in different learning approaches such as problem-based learning and small group seminars and this had previously been reported in three studies [52-54]. Active engagement in small group interaction enhances the students' learning experience of inter-professional teamwork to share tasks and learn from each other thus enabling the student to become a self-directed (principle of adult learning) practitioner in the future [43]. Dahlgren (2009) argued that successful IPE can be achieved when using student-centred approaches such as problem-based learning [55].

In contrast, the study by McFadyen et al. (2010) showed reduced positive attitudes of nursing students towards the teamwork knowledge and skills in the inter-professional group [34]. The nursing students were, however, the only group where a problem-based learning approach was used for all learning elsewhere in their programme.

Timing and duration

In the studies by Cooper et al. (2005) and Bradley et al. (2009) it was concluded that nursing students had positive attitudes towards teamwork post-course according to the RIPLS score for teamwork and collaboration, but this was not sustained after 3-4 months in Bradley et al. (2009) [27, 30]. The findings of both studies were presented for the whole group of junior students from years 1 or 2 in each study which indicates perhaps that the positive effect means eagerness to work together and reduce professional doctrine. Pollard et al. (2005) pointed out that early IPE intervention can create positive effects in pre-registration but this can decline quickly [40]. Also, research participants tend to overestimate their responses to measures that are new to them or they have little experience of, such as, the teamwork and collaboration issues in IPE [56]. The rationale for the decline post 3-4 months can be argued is due to the short-time intervention of IPE in the study by Bradley et al. (2009) because it was conducted only for 1 day [27]. Freeth et al. (2005) argued that pre-qualifying learners can sustain motivation to IPE interventions when high perceived status was acquired from

the learning experience and this results in stimulating the learner's motivation to participate in shared learning [5].

The findings of McFadyen et al. (2010) reported that pre-registration nursing students initially produced positive attitudes towards teamwork knowledge and skills in inter-professional group to uni-professional but these effects weakened longitudinally over four years [34]. The slower improvement in nursing student attitudes was tentatively linked to their much higher clinical placement days during the study. Thomas (1995) argued that a learner's motivation can be maintained when there is conformity between the educational programmes and the reality because IPE interventions such as clinical placement and simulated practice can take place even when classroom IPE is carried out [57]. Decline in attitudes has been reported elsewhere [44] and may reflect un-realistic expectations. However, both Curran et al. (2010) and McFadyen et al. (2010) adopted adult learning theory which encourages the student-centred approach but still the longitudinal positive effects of IPE on teamwork cannot be sustained for a longer time [45]. In comparison, Curran et al. (2010) concluded that overall there was no significant longitudinal effect on attitudes towards inter-professional teamwork in pre-registration healthcare students [33]. It is argued that an inter-professional cohort group can vary in perceived learning experiences of the positive effects of IPE on enhancing teamwork. This attitude depends on the quantity and quality of IPE events where learners actively learn with and from other health care professionals [5]. In addition, Coster et al. (2008) suggested that students who had negative attitudes at entry level before undertaking inter-professional learning gained the least from the IPE intervention especially if unrewarding experiences of IPE were present [58].

Influencing factors

The findings from this systematic review indicate that significant differences exist in the attitudes of nursing students which raises the importance of which other factors may influence these attitudes. Factors such as the characteristics of participating students in an IPE intervention such as gender and previous teamwork experience are important to consider in teamwork and collaboration [59].

Gender

Regarding gender, in all eight studies female participants were the dominant group and the findings showed that female students had positive attitudes towards inter-professional teamwork and collaboration. However, the Goelen et al. (2006) study showed that the only significant improvements shown overall, were for male students in the intervention group [32]. Wilhelmsson et al. (2011) also argues that undergraduate nursing students in general showed more positive attitudes towards teamwork and collaboration and that female students were more positive than male students [60]. Reynolds (2003) indicated that female students more than male students had significant positive opinions about inter-professional problem-based learning [61].

Previous team experience and environment

Conversely, there was no significant influence regards previous teamwork experience on teamwork and collaboration as found by Cooper et al. (2005) and Bradley et al. (2009) [27, 30]. However, Pollard et al. (2004) argued that undergraduate students with previous teamwork experience had relatively more negative opinions on teamwork and collaboration [59]. This finding can be questioned because effective IPE has to provide a high quality

of active interaction which can be achieved through providing opportunities to pay attention, argue, reflect, speak and exchange the knowledge and experience with other health care students [45]. The adult learning [62] principles in IPE require a non-threatening learning environment in order to have an effective inter-professional learning experience. Such positive learning environments can be created with the use of the 'contact hypothesis' approach [63] that allows students to have interactions with different groups and which can as a result increase the interactions between different groups and enhance teamwork experience and collaboration.

Programme level

The significance of the level of nursing education can be seen by comparing the findings of two studies in this systematic review, Curran et al. (2005) and Goelen et al. (2006), both of which studied only third year (senior) nursing students who undertook the IPE curriculum based on problem-based cases and standardised patients [31, 32]. They, however, reported opposite findings. The study by Curran et al. (2005) showed that nursing students' attitudes towards teamwork improved over time, possibly suggesting that continuous exposure may have greatest impact [31]. This is supported by Curran et al. (2008) who found that senior pre-registration health care students reported significantly more positive attitudes towards the inter-professional healthcare team than junior students [64].

In contrast, in Goelen et al. (2006) the inter-professional intervention did not improve the attitudes of third year undergraduate students (intervention group) towards inter-professional teamwork [32]. This finding is supported by Pollard et al. (2004) who showed that mature students gave more negative opinions about inter-professional interaction [59]. It can be argued that such negative opinions exist because undergraduate students become less positive about IPE after new learning experiences - particularly school leavers due to the transition between school and university [65]. Hence, creating the relevant learning experience to the learner is a crucial element of Knowles's (1980) theory of adult learning [62]. Students' attitudes to IPE can reflect a direct relationship between the learning experience and the current changes in practice [18, 66]. The perceived status of IPE is directly linked to the relevance of the learning experience and sometimes students feel that inter-professional learning is not essential for their specific profession learning experience [67, 68]. The possible negative impacts of clinical placement time where perhaps clinical mentors are not as positive towards IPE has also been considered [34] as having an impact upon student attitudes.

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