Trends in interprofessional education in health care

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Introduction

Over the last few decades interprofessional education in health care gained significant ground as a mechanism to enhance collaborative practice and improved health outcomes for patients. Furthermore it was seen as a way of addressing the global shortage of health care workers by optimising teamwork among the available personnel. The implementation thereof posed several challenges (WHO, 2010). The purpose of this article is to describe current trends in this regard.

Meaning of concepts related to interprofessional education

Educating health care professionals to function within a team emerged as an important aspect of health care over the last few decades. The associated concepts such as multiprofessional, multidisciplinary, interprofessional, interdisciplinary and transdisciplinary education are often used interchangeably in literature and can cause confusion among readers.

This confusion is commonly created by 'conceptual errors' (Pirrie, Hamilton & Wilson, 1999), 'a lack of clarity' (Pirrie et al., 1998) or a 'terminological quagmire' (Leathard, 1994). Anne Pirrie and many known authors in this field of research like Carpenter, Leathard, Hamilton, Hammick, Harden, Rawson and Wilson have over several decades all attempted to clarify this 'conceptual confusion'. The confusion is either related to the prefixes 'inter' and 'multi', or to the adjectives 'disciplinary' and 'professional' according to Leathard (1994). For Carpenter (1995) the prefixes have a purely numerical connotation by defining 'inter' as consisting of only two members and 'multi' more than two members within a team.

Pirrie et al. (1998) and Harden (1998) examined additional aspects in order to clarify these terms and included the influence on the 'territory' or boundaries of team members, the epistemology of the two prefixes and the hierarchies of the professionals within the team.

When describing 'inter' Pirrie et al. (1998) regards it as more than the sum of the individual parts but being interdependent on each other. Interdependency involves team members to cross into another's space or to surrender some aspects of their own professional role. Often it also involves altering professional boundaries or accepting a new identity within the team. Rawson (1994) further adds that there should be a form of reprocity between team members. According to Wilmot (1995) 'inter' demands an integrated approach with a greater degree of maturity and flexibility with regard to their knowledge base.

When describing 'multi' Pirrie et al. (1998) regards it as members working independently but with related roles towards the same goal. Each team member is

responsible for a different part of the patient's treatment with little or no overlapping of professional roles. Clark (1993) describes 'multi' as 'bringing different perspectives together' in one team and Rawson (1994) is of the opinion that 'multi' does not create a 'give and take' situation as described with 'inter'. According to Wilson and Pirrie (2000) 'multi'-related teams work in a holistic manner to achieve the best possible treatment for a specific patient, b[37]do not imply that this is not true with 'inter'-related teams. Hammick et al. (2007) on the other hand are of t[15]opinion that multiprofessional education takes place when members from two or more professions side by side learn for whatever reason, whereas interprofessional education has an interactive component when they learn with, from and about each other.

Whereas the prefixes in the terms 'multiprofessional', 'multidisciplinary' 'interprofessional' and 'interdisciplinary' were discussed by various authors, the adjectives 'disciplinary' and 'professional' have received little attention thus far in literature. The description that comes to mind when the terms disciplinary or professional are mentioned could be that they are unambiguous. Clark (1993) uses disciplinary and professional interchangably. A participant in Clark's (1993) study mentioned that professional could be associated with 'compartmentalising people into stereotypes c[19]boxes'. Pirrie, Hamilton and Wilson (1999) referred to multidisciplinary as the most useful word because it's 'the most ambiguous one' and Gilbert, Yan and Hoffman (2010) described 'professional' as a member that could add skill and knowledge to the well-being of a community. Gilbert et al. (2010) were further of the opinion that professional is an 'all encompassing term'. According to Oandasan and Reeves (2005) disciplinary refers to a 'dedicated body of knowledge' of a subject taught.The term 'interdisciplinary' will for example be used when medical doctors of different specialised fields have a meeting. Oandasan and Reev[12](2005) referred to Neufeldt's work in 1990 where he stated that disciplinary is a 'field of study', but 'professional' a calling requiring specialised knowledge and often long and intensive academic preparation. Oandasan and Reeves (2005) further reasoned that though the word 'professional' is commonly used in healthcare, it could exclude enrolled nursing auxiliaries, massage therapists, and so forth.

'Transdisciplinary education' implies that education transcends the boundarires of two or more disciplines in order to create a holistic approach. The role clarification of the respective disciplines will therefore fade with an increasing overlap of responsibilities (Choi & Pak, 2006).

The term of choice used in this article is 'interprofessional education', [6]ccepting the definitions as stipulated by CAIPE (2002) and WHO (2010). The *UK Centre for the Advancement of Interprofessional Education (CAIPE)* revised the definition of interprofessional education in 2006 as "those occasions when members (or students) of two or more professions learn with, from and about one another to improve c[14]laboration and the quality of care" (CAIPE, 2002). The WHO (2010:7) has a similar definition for interprofessional education which states that "interprofessional

education occurs when students from two or more professions learn about, from and with each other to enable effective collaboration and improve health outcomes". In the section that follows, a brief look is taken of studies related to interprofessional education.

A brief look at international studies related to interprofessional education

The following section provide a brief look at examples of studies done related to interprofessional education in Australia, Japan, Ohio, Sweden and North Carolina.

At Monash University in Australia a study was done where workshops for undergraduate health care students formed part of their interprofessional education. During the workshops, groups of a minimum of three health care students enrolled at Monash University formed interprofessional teams. The team members could include undergraduate students from paramedics, nursing, midwifery, occupational therapy, physiotherapy and dietetics. The teams watched DVD simulations of three different conditions after which they had to work collaboratively to develop optimal health-care plans for the patients. Six educational components guided these workshops: patient-centred practice, interprofessional learning, communication skills, teamwork and collaboration, conflict management and reflection. Group activities were added for the purpose of learning about each discipline's professional roles and responsibilities. The authors evaluated the interprofessional education workshop immediately after it had been held and after six months of implementation. The findings of the pilot study indicated that the student's perceptions and attitudes towards the interprofessional education workshops were perceived as positive directly after the workshop and also after six months. It was concluded that the results could indicate long term positive effects of such interprofessional education workshops on the perceptions and attitudes of undergraduate students (Williams et al., 2011).

An interprofessional education programme at the University of Gunma in Japan was implemented for the first and third year undergraduate health care students. Different educational approaches were used for the different year groups. The first year health care students were educated about interprofessional teamwork by means of lectures. This involved two classes that included details and values of collaborative practice. The third year students were exposed to a training style approach with interprofessional teams consisted of four students from nursing and two students from speech therapy, one student from occupational therapy and one physiotherapy student. The interprofessional education training programme consisted of 15 consecutive four hour lessons and two days practical fieldwork sessions followed by a debriefing session and group work to prepare patient reports. The educational approach comprised problem-based learning and collaborative group discussions. Tomoko et al. (2012) then conducted a study to determine the changes in attitudes regarding interprofessional education between the first and third year students. The

findings indicated that the first year group's attitudes were inclined to be mainly negative whereas those of the third year students were seen as mainly positive. It was concluded that the students' perceptions may have been influenced by the stage when the interprofessional education and the educational approach were introduced since the third year students experienced a 'meaningful positive change in knowledge and attitude' (Tomoko et al., 2012).

At the University of Columbus in Ohio, a pilot study was conducted to teach students by means of simulation to function within an interprofessional team. The interprofessional teams consisted of one medical student, one nursing student and a family member. They were presented with a standardised scenario wherein trained members played the role of the patient so that the scenario could be closely related to real life. The team had to work together to devise a plan for optimal patient care. The pilot simulation was found to be 'effective and a well-received educational intervention' with the potential to foster a culture of interprofessional teamwork (Wagner, Liston & Miller, 2011).

Attempts of interprofessional education have been implemented by the Linköping University in Sweden since 1986. The main aim of the *Linköping Interprofessional Education Model* was to establish a professional identity for undergraduate health care students and to achieve interprofessional competence over a period of time. Medical, nursing, occupational therapy, physiotherapy, biomedical laboratory, medical biology and speech and language undergraduate students were all part of the interprofessional education programme. Problem-based learning in small groups and reflection formed a fundamental part of the interprofessional education programme. The programme was presented as an eight week interprofessional education module with a combination of modules early in the curriculum and practical fieldwork at a student training ward at the end of the programme. The purpose of the training ward was to teach and learn students to function within an interprofessional team during a two-weeks rotation (Wilhemsson et al., 2009). Staffan et al. (2011) evaluated the effect of the two-week rotation on the undergraduate health care students' professional roles and their value in teamwork. The findings indicated improved knowledge of their own professional role, the role of other professions as well as the benefit of teamwork after exposure to interprofessional teamwork at the training ward.

Rossen, Bartlett and Herrick (2008) used two case studies to describe innovative ways in which the University of North Carolina used to engage nursing students in interprofessional collaborative practice other than in hospital settings. The one case study described how interprofessional education for undergraduate nursing students was carried out at a psychiatric unit. Two nursing students were paired for collaboration - one student worked in the morning and the other in the afternoon but with the same patients. The aim of this activity was to gain skills needed for collaboration such as interpersonal communication and negotiation, which they then could use to participate in interprofessional activities with other team members as

well. Strategies to encourage collaboration included time to communicate, plan, evaluate and write down a weekly care plan. Students were also expected to observe interprofessional teamwork from the professionals working in the psychiatric unit. The interprofessional activities were evaluated by the students and the results indicated positive responses, although some also indicated that working collaboratively was not an easy task.

The second setting used by Rossen, Bartlett and Herrick (2008) for interprofessional teamwork was a homeless shelter for alcoholic women and their children. Undergraduate students from nursing, psychology, social work, therapeutic creation, human development and special education worked together in a team to provide services to the mothers and their children. Training strategies to promote interprofessional education included formal educational experiences in which the knowledge and skills of the various disciplines were shared. An awareness of the roles of the different members was also created through discussions. Students had to role play good collaborative practice among team members as well as discuss their assessment and planning for a specific health care user. Professionals as role models to students during collaborative practice was another training strategy used to educate interprofessional teamwork. The students learned about the similarities and differences of the different team members.

A brief view of studies related to interprofessional education in South Africa

Two articles (Dunston et al., 2006; Mayers et al., 2006) were published about the development of a multi-professional education curriculum at the University of Cape Town in 2006. The first article described the reasons why the curriculum was transformed and the second the practicalities of the curriculum design process. A shift from a more traditional multi-professional educational course occurred in order to unite rather than differentiate among the professions. Designing a new curriculum is not always an easy task as it required educators to abandon certain preconceived ideas, take time to plan, reach consensus (which is often accompanied by conflict), communicate and ensure support structures. The teaching methods planned was small group participation and experiential and community project-based learning. The course was designed to focus on the following objectives: development of interpersonal relationships, understanding group dynamics, professionalism, commitment to human rights and endorsement of the primary healthcare philosophy. All the first year undergraduate health professional students in the Faculty of Health Science at the University of Cape Town were included in this course. The basis of the curriculum content was to focus on a commitment to sound professional relationship with colleagues, clients and the public as well as commitment to primary health care.

A recent article from Waggie and Laattoe (2014) described the development of an interprofessional programme at the University of Western Cape in South Africa. The interprofessional programme was designed for all undergraduate students of nursing, physiotherapy, occupational therapy, social work, dietetics, natural medicine, and sport science and recreation. Three exemplars guided the development of this programme. Community based service learning with an underlining pedagogical approach was identified as the first. The purpose of this programme was aimed at in-depth knowledge and skills related to a community setting. The second called the 'interprofessional community-based practice' was where teaching and learning methods included small group discussions, didactic input, video clips, role play and case studies. The purpose was to work within an interprofessional team while recognising the different members' roles and responsibilities. The third exemplar's purpose was communication in interprofessional teamwork by facilitating small group discussions and presentations.

The University of Limpopo (Medunsa) in South Africa discussed ten key elements when designing and implementing interprofessional learning in clinical simulations, namely facilitators, learners, patient simulators, content, learning resources, settings, faculty development, logistics, learning strategy and evaluation. The facilitators need to support new working relationships and to be open to learning and working together. It was suggested that no more than four professional student groups should be included, as students from multiple disciplines tend to cause interprofessional learning to be challenging. Simulation need to be as close to real life as possible to enhance interprofessional learning. Skills needed to work within a team are essential for the educational content and include communication, leadership and teamwork. The setting as well as the details of the logistics need to be planned carefully and well in advance. The teaching methods should be experimental, relevant and meaningful for each professional group. Debriefing, reflection and constant evaluation have to be included in an interprofessional programme (Treadwell & Havenga, 2013).

In the above examples, it appears that interprofessional education can take on different forms in different settings and following different approaches, but the aim remains focused on improving collaborative practice.

Discussion

The need for interprofessional education in health care

As a result of global changes in the health care needs of an ageing population together with an increase in chronic diseases and accompanying disability, health care provision has to change and with that the education of health care professionals also need to change. Burch (2014) indicates that the focus be shifted from cure to controlling of symptoms, optimising quality of life and coping with longterm conditions

which require increased specialisation of the various health care professions and a higher level of collaboration between them. This in turn calls for better teamwork, which health care professionals should be prepared for as early as possible in their undergraduate training programmes.

The WHO (2010) described interprofessional education as an innovative step to enable collaboration and improve health outcomes according to local needs. These expected outcomes include 'collaborative practice-ready health workers' who work together to achieve local health goals, move away from fragmentation in health care and build stronger health systems, which in turn improve health outcomes. Additional outcomes include patient satisfaction, sharing knowledge of the best practices, and work-force satisfaction and well-being.

Cooper et al. (2001) explained that the effects of interprofessional education are related to changes in knowledge, skills, attitudes and beliefs. Phillippon et al. (2005) concur that the changes as a result of interprofessional education contribute among health professionals more effective work and collaboration in interdisciplinary teams and at the end benefit both the patients and communities.

Health challenges in which interprofessional education and collaborative practice can make a positive contribution include family and community health, HIV/AIDS, tuberculosis and malaria, humanitarian crises and conflicts, health security threatened by epidemics and pandemics, non-communicable diseases, mental health, human resource shortage in health systems and health care services (WHO 2010).

Pumar Mendez et al. (2008) indicate that although the need for interprofessional education is supported by evidence it does not go without obstacles and challenges. Some of the challenges include lack of time, scarce financial resources, varying educational schedules and discipline-specific requirements for registration (Cooper et al. 2001). Hammick et al. (2007) also add stereotyping, unwillingness to cooperate and incompetent educators as obstacles.

Following a study on interprofessional education in 42 countries, the World Health Organisation (2010) provided the following framework for action on interprofessional education and collaborative practice.

WHO: Framework for action on interprofessional education and collaborative practice

According to WHO (2010) there is a global need to strengthen health systems based on the principles of primary health care, but unfortunately there is a shortage of health care human resources. This shortage is a critical barrier to achieving the health related millennium development goals. Interprofessional education and collaborative practice is seen as one of the innovative strategies to address the call

for scaling up on health work-force production to ensure an appropriate supply, mix and distribution of the health work-force (WHO 2010).

It is for this reason that the WHO (2010) provided its framework for action on interprofessional education and collaborative practice in a time of shortage of health workers to counteract the global health work-force crisis. The framework provides ideas for policy makers on how to implement interprofessional education and collaborative practice within their own context in order to attain better health outcomes.

According to the WHO (2010) the concept of interprofessional education and collaborative practice is relevant for health care workers who promote and preserve health, diagnose and treat diseases, manage health systems and support workers, provide services with discrete / unique areas of competence, and provide conventional or complementary healthcare, whether it is regulated or non-regulated. Such health care professionals possess the knowledge and skills necessary for the physical, mental and social well-being of a community. Collaborative practice occurs when health workers from different professional backgrounds provide clinical and non-clinical comprehensive services by working with patients, their families, carers and communities to deliver the highest quality of care across settings (WHO 2010)

In order for interprofessional education to be successful, important mechanisms need to be in place, including supportive institutional and management practices, identifying and supporting potential champions, and a resolve to change the culture and attitudes of health workers. Furthermore, there should be good communication among participants, a willingness to update information, renew and revise existing curricula and institute appropriate legislation to eliminate barriers to collaborative practice by addressing health and education systems (WHO 2010).

Furthermore, there should be a shared vision and understanding of benefits in introducing a new curriculum, clear learning outcomes, enthusiasm for work being done, and training of staff involved. Health and education systems need to be reviewed in order to create an environment wherein the health care workers can implement collaborative practices (WHO, 2010).

The framework of the WHO (2010) provides strategies and guidelines to organisations for the development and implementation of interprofessional education for healthcare workers from a variety of professions.

Health professions involved in interprofessional education

While conducting a systematic review, Cooper et al. (2001) found the following professions to be involved in interprofessional education: nursing, medicine, social work, pharmacology, dentistry, laboratory science, speech therapy, dietetics, audiology, occupational therapy, physiotherapy, health administration, chiropody and

psychology. Hammick et al. (2007) also followed up with a systematic review on interprofessional education in 2007 and identified the following professions participating most often in interprofessional education: medicine, nursing and midwifery, physiotherapy, pharmacology, occupational therapy, dentistry and social work.

The 'Study Group on Interprofessional Education and Collaborative Practice' of the WHO conducted a study in 2008 to determine the global status of interprofessional education programmes in 42 countries. The respondents (n=396) who responded represented education (50,4%), practice (14,1%), research (11,6%) and administration (10,6%). The learners involved in interprofessional education programmes included nurses / midwives (16%), doctors / physicians (10,2%), physiotherapists (10,1%), social workers (9,3%), occupational therapists (8,9%), pharmacists (7,7%), psychologists (5,9%), nutritionists / dieticians (5,7%), speech pathologists (4,7%), community health workers (4,3%), audiologists (2,2%), physicians' assistants (2,2%) and podiatrists (1,6%). The remaining 6,7% included all other types of health workers involved in interprofessional education programmes (WHO, 2010).

A common theme in these studies was that interprofessional education did not replace profession-specific education, but was seen as contributing to depth of education in which the students from the different professions learn from, with and about each other, and with the learning domains being alligned with generic aspects of health care and collaborative practice (Cooper et al. 2001; Hammick 2007; WHO, 2010).

Learning domains in interprofessional education

Mariano (1989), Clark (1993), Cooper et al. (2001), Hammick et al. (2007) and the WHO (2010) argue that team members first need to establish a discipline-specific foundation of knowledge and skills before they could function optimally within a team. The primary purpose of interprofessional education is to enhance collaborative practice. Burch (2014) agrees that specialised knowledge and skills are crucial in the respective professions, but indicates that the foundation for collaborative practice and teamwork among the professions should be established as early as possible to prevent stereotyping and professional arrogance, and create mutual respect and understanding.

Common themes identified by Cooper et al. (2001) from studies in the 1990s include teamwork, primary health care, problem solving, chronic illness, clinical skills, communication skills, health behaviour, continuous improvement, therapeutics and labour and delivery.

Hammick et al. (2007) included in interprofessional education programmes teamwork, reflection and practice-related content, e.g. primary health care, screening for risk factors, etc.

The WHO (2010) suggested the following as the main learning domains in interprofessional education:

- Teamwork:
  - Being able to be both the team leader and team member
  - Knowing the barriers to teamwork
- Roles and responsibilities:
  - Understanding one's own roles, responsibilities and expertise
  - Understanding those of other types of health workers
- Communication:
  - Expressing one's opinions competently to colleagues
  - Listening to team members
- Learning and critical reflection:
  - Reflecting critically on one's own relationship within a team
- Transferring interprofessional learning to the work setting:
  - Relationship with and recognising the needs of the patient
  - Working collaboratively in the best interest of the patient
  - Engaging with patients, their families, carers and communities as partners in care management
- Ethical practice:
  - Understanding the stereotypical views of other health workers held both by oneself and by others
  - Acknowledging that each health worker's views are equally valid and important

Burch (2014) further argues that the curricula of undergraduate health profession programmes should include interprofessional learning with an emphasis on the central values of professionalism, namely altruism, accountability, excellence, duty, advocacy, service, honour, integrity, respect for others as well as ethical and moral standards, and the acquisition of skills needed to function as part of a multi-professional team.

Lessons learnt in interprofessional education

Important lessons learnt from the various studies are associated with teaching, learning and assessment approaches, content, infrastructure and utilisation of resources, and staff involvement.

Successful interprofessional education programmes in general centre around the principles of adult learning (Cooper et al., 2001; WHO, 2010; Hammick et al., 2007).

For effective learning to be achieved interprofessional teamwork is then essential in a context that reflects the students' current or future practice (Hammick et al., 2007).

Teaching, learning and assessment should also be authentic and should therefore take place in a meaningful and relevant context that either is or reflects real world practices and includes active participation, experiential learning, debriefing and reflection (Treadwell & Havenga 2013; WHO 2010; Hammick et al. 2007).

Cooper et al. (2001) identified problem based learning, small group teaching, case studies and experiential work as approaches that contribute to the success of interprofessional education. Cameron, Rutherford and Mountain (2012) stated that interprofessional education should be imbedded in work-based learning in order to promote collaborative practice. Treadwell and Havenga (2013) added the inclusion of a range of assessment methods, including student surveys, as contributing to efficient interprofessional education.

Bridges et al. (2011) emphasised the importance of appropriate curricular mapping to make interprofessional education relevant. Cooper et al. (2001) and Burch (2014) indicated that early learning experiences were most beneficial to develop healthy attitudes toward interprofessional teamwork before stereotyping is strongly formed. Mayers et al. (2006) discussed the importance of finding a common vision and planning structure, agreement on the principles to guide course design and acknowledgement of the strengths and roles of the team members.

The content of the programme should be based on shared objectives (WHO, 2010; Treadwell & Havenga, 2013) and the stakeholders should 'buy into' the concept (Mayers, etc. 2006). Common themes leading to successful experiences of interprofessional education include role clarification of own and other health-care professions in the health-care team (Bridges et al., 2011; Treadwell & Havenga, 2013) and skills required for teamwork such as communication, leadership, conflict management, prioritising and decision making (Treadwell & Havenga 2013; Hammick et al., 2007; Cameron et al., 2012).

Interventions related to interprofessional education require detailed and committed team planning and increased resources (Cooper et al., 2001; Treadwell & Havenga, 2013). Resources that are critical for a successful interprofessional education programme include adequate physical space, technology, administrative support, and interprofessional programmatic infrastructure. Furthermore there should be a commitment from faculties, departments and staff, diverse calendar agreements and community relationships (Bridges et al., 2011; Treadwell & Havenga, 2013; WHO, 2010).

Staff development in the facilitation of interprofessional education is essential for its effectiveness (Hammick et al., 2007). They need to understand the principles of interprofessional education and the multiple factors that influence learning (Hammick et al., 2007). Bridges et al. (2011) emphasised the importance of mentor and faculty

training. Treadwell and Havenga (2013) stated that committed facilitators who encourage collegial learning, change thinking and support new working relationships are needed for successful interprofessional education programmes (Treadwell & Havenga 2013).

It is clear from the above that best practices in interprofessional education are multi-faceted and complicated, but are important in order to promote collaborative practice in health care.

Conclusion

Interprofessional education is frequently used as a mechanism for enhancing the development of practice and quality improvement of services in health care (Hammick et al., 2007). In spite of several challenges, various authors support interprofessional education as important for establishing a culture of collaboration and teamwork among different health care professions (Cameron et al., 2012; WHO, 2010; Cooper et al., 2001). Collaboration and teamwork in turn contribute to better health care workers and better health outcomes, and that is really the ultimate purpose of interprofessional education.

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