

# Teamwork among first year health sciences students in an interprofessional course: a contact theory perspective.

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## Abstract

**Background:** Promoting teamwork outcomes remains an important mandate for interprofessional education (IPE). While IPE has grown exponentially in contemporary health sciences education, theoretical application within IPE has been identified as an enduring gap in the field over the past few decades. **Purpose:** This paper reports on the theoretical implications of a study which explored first year health sciences students' perceptions and experiences of teamwork within an interprofessional course. Originating in the field of social psychology, contact theory has been cited as a useful framework for curriculum design for IPE. Thus, the purpose of this paper is to contribute to the theoretical evidence base for IPE from the perspective of social psychology. **Method:** Framed

in an exploratory qualitative design, focus group discussion was the primary method of data production. Data were analyzed deductively with reference to contact theory; and inductively using thematic analysis. **Discussion:** The study findings highlighted two of contact theory's conditions for positive intergroup contact: 'equal status' in relation to professional hierarchies; and 'institutional support' in relation to academic politics were both meaningful in the context of this study. **Conclusion:** This study's findings indicate potential for further research of contact theory's optimal conditions in IPE contexts, with the proviso that students' emerging professional identification must be made salient.

**Key words:** teamwork; interprofessional education; contact theory

**Date submitted:** 30-October-2024

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## Introduction

The increased application of theory to interprofessional education (IPE) contexts has been identified as an important means of advancing the interprofessional field.<sup>1</sup> This paper reports on the application of a theory emerging from social psychology, contact theory, in a study of first year health sciences students. The study sought to explore students' perceptions and experiences of teamwork within an interprofessional course at a South African university.

In this study, the concept of teamwork was differentiated from collaborative practice, the latter assumed to be beyond the capacity of first year students. Teamwork, although pervasive in the healthcare and interprofessional literature, is inherently a moving target due to its contextual

Citation: Hendricks A and Waggie F. Teamwork among first year health sciences students in an interprofessional course: a contact theory perspective.. *Educ Health* 2024;37:310-317

**Online access:** [www.educationforhealthjournal.org](http://www.educationforhealthjournal.org)  
DOI: 10.62694/efh.2024.130

Published by The Network: Towards Unity for Health

nature. Teamwork has been associated with the ability to "*inspire confidence resulting in a coordinated collective action.*"<sup>2</sup> Thus, teamwork in this study was seen as involving functional and positive social interaction between different health sciences students. The nature and functioning of teams are context-specific, thus the study of teamworking ought to be conducted at local levels in order to maximize relevance. Hence, teamwork in this study has been positioned as a concept to be operationalized in this particular research context.

A semester-long, 13-week interprofessional course "*Becoming a Health Professional*" (BHP) forms part of the compulsory core curriculum for first year health sciences students registered at a South African university.<sup>3</sup> Small groups of around 12 students from audiology, medical, occupational

therapy, physiotherapy and speech & language pathology programs meet once a week together with a facilitator for experiential learning activities in BHP. The course builds on the content of its preceding introductory counterpart, “*Becoming a Professional*” (BP). The learning outcomes associated with these two courses, include introducing students to the idea of interacting with others and what constitutes effective relational skills at interpersonal and group level. Beginning to value different health professionals’ contributions to a healthcare team is a further learning objective for BP & BHP.<sup>3</sup> These objectives refer to the interactivity of teamworking in healthcare and also point to the differentiated nature of interprofessional healthcare teams.<sup>4</sup> Thus, interprofessional healthcare can be deemed an “*intergroup encounter*”<sup>5</sup> and contact theory is concerned with intergroup encounters between differentiated groups.

Within the domain of social psychology, contact theory originated from the contact hypothesis which postulates that when individuals from different groups have opportunities to come together under certain conditions, positive social outcomes may result; but that conversely, contact could also have the opposite effect of aggravating negative relationships.<sup>6,7</sup> The conditions purported to enhance intergroup relations include equal status of those involved in the contact situation; institutional support for contact to occur between groups; cooperative (non-competing) activities leading to rewarding outcomes; the achievement of common goals and an environment in which friendships can grow [ibid]. These optimal contact conditions are implicit to teamworking; and inherent to IPE courses.<sup>5,8</sup>

Although each of contact theory’s conditions outlined above could have been applicable in the context of BHP, only two were considered in this study: equal status and institutional support.

(i) *Equal status*: According to contact theory, social groups have varying degrees of relative status and this inequality must somehow be neutralised within a contact situation to see positive effects. Although equal status is a problematic concept, the application of contact theory in health sciences education outlines equal status in terms of the unique and therefore mutually beneficial knowledge and skills of different professions.<sup>9</sup> Carpenter & Dickinson<sup>5</sup> recommend bringing together students who are similar in terms

of years spent at university and level of subject knowledge since status is derived from these. Thus, equal status is hypothetically possible by considering the placement of students in IPE spaces [ibid]. BHP is introduced in the first year of study with the intention of having students at the same level in terms of years of study in their respective health professional degree programs.<sup>3</sup>

(ii) *Institutional support*: Contact theory outlines institutional support as the rules, customs or formal structures in place which help differentiated groups to find common ground.<sup>6</sup> This can be made explicit by giving IPE a prominent place in the curriculum with formal assessment.<sup>5</sup> BHP’s prominence is gained by being part of the compulsory curriculum and a manifestation of the faculty’s curriculum transformation goals.<sup>9</sup> According to Olckers et al.<sup>3</sup> BHP is part of the faculty’s first steps toward producing graduates who are competent to work in teams.

The purpose of this study was to explore first year students’ perspectives of working in teams. Taking account of students’ perspectives can complement the future design and delivery of IPE courses to ensure that students have positive learning experiences. Since student perspectives are idiosyncratic and contextual, the methodology for this study was designed with an interpretivist approach.

### Materials and Methods

This qualitative study sought to explore students’ perceptions and experiences of teamwork within an undergraduate IPE course. The following research questions were explored:

- 1) What are students’ perspectives of what teamwork is?
- 2) Based on their own perceptions of teamwork, what are students’ experiences of teamwork within the BHP course?
- 3) What factors, based on their perceptions and experiences of teamwork did students highlight as facilitators or inhibitors of teamwork?

The study was conducted in fulfilment of the researcher’s MPhil degree in Health Sciences Education approved by the university’s Health Sciences Human Research Ethics Committee (HREC reference number: 429/2019).

Students were invited to participate through a short cartoon video clip with details about the study at the end of their BHP lecture on two afternoons. Since

this invitation occurred at the end of a formal BHP lecture, the researcher emphasized that the study was not linked to BHP, its formal activities, or assessment. An overview of the study methods and sample is represented in Table 1. As depicted, the primary data collection method was focus group discussion (FGD) which were conducted by the researcher. Due to the convenient, self-selection

sampling method two individual interviews and one joint interview was also conducted in instances where there were not enough participants to make up a focus group. Audio recordings of the FGDs were transcribed verbatim. Thereafter, using a deductive approach rooted in contact theory, thematic analysis following the tradition of Braun & Clarke<sup>10</sup> was used in this study.

**Table 1: Overview of data production methods & study sample (n=32)**

Method	Number of instances	Number of participants	Professions represented
Focus group discussion	5	28	Audiology, medicine, occupational therapy, physiotherapy, speech & language pathology
Joint interview	1	2	Medicine, speech therapy
Individual interview	2	2	Occupational therapy, physiotherapy

## Results

The study purpose was to explore students' perceptions of teamwork in a first year interprofessional course. The results of this study revealed that students had a comprehensive perception of what teamwork entails, although their experiences of teamwork within the BHP course varied. Communication, leadership, empathy, respect, equality and participation were words often replicated in the data. The thematic analysis yielded three broad themes: the *purpose* of teamwork; the *persons* involved; and the *process* of teamwork in BHP (Table 2). These broad themes were derived deductively from the data, using the FGD questions as organizing categories. Alongside this thematic analysis the data were also considered against the two contact theory conditions 'equal status' and 'institutional support'.

## Discussion

### *Equal status*

According to Carpenter & Dickinson<sup>5</sup> "equal status... may be easier to achieve" with undergraduate students. The students in this study explicitly highlight the importance of equality in teamwork. 'Equality' were perceived as inherent to the assessment practice of BHP. That is, all BHP students regardless of their respective health professions degree programs were assessed according to one rubric. Students thus perceived BHP as levelling the playing fields in terms of being assessed. Scoring marks was something the students in this study valued widely, hence this manifestation of 'equal status' was appreciated as being fair:

*... [the presentation] was gonna contribute 15% towards all our final marks... so... it benefits us all in the same way (FG04).*

*... everybody is gonna get... similar marks in the group... if you're accountable for yourself and for your own marks you're gonna get a good mark, the whole group (FG11).*

Students also described equality in terms of each of the respective professions having something unique to offer in a healthcare team:

*... there's things that I as a doctor cannot do... there's somebody else that can do that. So... it's almost... impossible to assume that one is better than the other when they are completely different ... (FG07).*

*... by the time we have finished studying... we both have... a quality degree... just because you have a different profession doesn't mean you are less equal or less competent in whatever it is you're doing... whichever degree they are, they are very competent in that field... In that way we are equal (FG07).*

*... one of the first things we learnt in BHP is how the world has now redefined health... health used to be about curing... getting rid of... disease... so... now it's about... not just curing, but also prevention, also rehabilitating. So... equality comes in because we need to all recognize that health is not just about curing people. It's about rehabilitating them, improving their lifestyle and improving their function... so we... all need each other... (FG07).*

**Table 2: Themes derived from thematic analysis: students’ perceptions & experiences of teamwork**

<b>Themes</b>	<b>Students Perceptions &amp; Experiences</b>	<b>Data extracts</b>
<b><i>Purpose of Teamwork</i></b>	<p>Students perceived a ‘team’ as having a specific purpose versus a ‘group’ which they perceived a less deliberate in its formation.</p> <p>Purpose was also linked to students’ motivations in relation to meeting the course requirements; and scoring marks for enacting teamwork in team-based assessments.</p>	<p>“... group is... a more generic term... but a team is more defined. They know each other; they know their purpose... they’re working together towards a common goal.” FG07</p> <p>“... group members say ‘ah let’s just do it... it’s for marks anyways. Let’s just do it to get our marks and get it over and done with’...” (FG04)</p>
<b><i>Persons involved in Teamwork</i></b>	<p>Students perceived the persons involved in teamwork as being a diverse mix of individuals each with defined roles, divergent personalities, strengths, weaknesses and unique contributions.</p> <p>Leadership was perceived as an important part of teamwork.</p>	<p>“Everyone’s got their role. Like their... cog in the engine” (FG02)</p> <p>“... when you’re working in a team you have such as resource of skills and experiences... that needs to be brought together.” (H05)</p> <p>“... you need someone to be the leader and you have to respect that person for taking on the leadership role, but you should also respect the someone that’s more artistic...” (FG11)</p>
<b><i>Process of Teamwork</i></b>	<p>The process of teamwork was perceived as working together in a way that everyone contributes and there is trust, relationship building and communication.</p>	<p>“... you have to ... trust the other people. Because ... if you’re not gonna trust anyone, you’re not gonna expect them to do the work.” (FG03)</p> <p>“... listening to each other in a team is really important and it fosters a sense of team spirit and everyone contributing.” (FG05)</p> <p>“... because we communicated so well together, we were able to... get the job done.” (FG04)</p>

These apparently egalitarian perceptions were however not always part of students’ experiences of teamwork in BHP. What students referred to as “*the hierarchy*” was an element of inequality evident in the data. Fostering an inclusive and supportive learning environment where students’ cultural and linguistic backgrounds are valued can help mitigate some of the challenges posed by hierarchy and power dynamics in health professions education, and in the health and social care systems.

**The hierarchy**

Within healthcare, the problem of ‘equal status’ manifests in hierarchical structures, a pecking order of professions.<sup>4</sup> Students in this study were aware of this hierarchy, and some had experienced it in different ways in BHP:

*... the health and rehab students always feel like the med students take over, like overpower within BHP (FG03).*

*... we’re [health & rehabilitation sciences students] always... the minority... sometimes we’ll be the only one in a group full of med students and that’s hard because then they won’t understand that you have a lot of other things to do (FG03).*

*I expected the... medical students to put in a little more... harder work because we’re... supposed to be used to doing hard work, although I expected from the other professions too... but I don’t know if maybe... they wanted to... not feel overpowering... that might... be a reason why the medical students sat back... (FG07).*

The extract above implies that there was an expectation that hierarchical issues would play a role in teamworking, even at first year level. But expectations of hierarchy were not always experienced in BHP:

*I feel like BHP's trying to prepare us for... the hierarchies more outside of the university space, because... right now it's not very apparent... I don't know. I just feel like right now it's quite equal... Outside of BHP I feel like the hierarchy was evident... in old main [building]... there was a project where... they asked about the hierarchy... there'd be like quotes from people... so I expected the hierarchy to come out and play like a major role in the teamwork, but it didn't... (FG11).*

The nature of working relationships between BHP students offers a vista of why “the hierarchy” didn’t “play... a major role in the teamwork”. When working in teams it wasn’t always evident which profession each team member was studying. Students interacted mostly on an interpersonal level where emerging professional identification<sup>1</sup> was not salient:

*... as soon as you get to know a person... you understand okay, their profession doesn't define who they are (FG07).*

*We all respected each other and were able to just... work together... it wasn't evident that this person was studying this, and this person was studying this (FG11).*

*... you couldn't see... hierarchy because of... different professions... it didn't prevail... when we were working together... there was... no divisions (FG11).*

The results are pertinent to the usefulness of contact theory as a theoretical framework in this study context. Contact theory was applied in the data analysis phase of this study because of its potential to understand group dynamics in an IPE context.<sup>5</sup> The implicit assumption was that teams of students from different health professional degree programs would have interacted with their emerging professional identities salient, thus rendering their teamworking as ‘emergent interprofessional’ intergroup encounters. However,

<sup>1</sup> An ‘emerging’ professional identification is acknowledged here since professional identity differentiation can be discerned by health sciences students in the first year of study.

since students seemed to be interacting mostly at an interpersonal level, it highlights the necessity for making students’ different professions apparent during coursework activities in IPE programs.

Furthermore, issues related to culturally and historically entrenched professional hierarchies in the health and social care professions could be explicitly addressed in IPE programs. Acknowledging the unique contribution of each member of a healthcare team can foster respect, shared decision making and trust which ultimately enhances patient care.

Institutional discourse often reinforces hierarchical structures, subtly influencing students to adopt attitudes aligned with these structures. For example, if a healthcare system emphasizes distinctions between medical and allied health professionals, students might internalize these divisions, perceiving “equal status” as aspirational rather than practical. This experience can shape their professional identity, with some students developing a “specialized” perspective, while others in “lesser” fields may feel undervalued, impacting their motivation and professional engagement. Hierarchy influences students’ perceptions of their own and others’ roles, as they encounter implicit biases that privilege some disciplines over others, impacting interprofessional dynamics and shaping professional identity. Acknowledging these dynamics in the BHP course and in clinical practice education could equip students with the resilience and collaborative skills necessary to foster equitable, interprofessional relationships.

Differentiating professions during IPE programs can help clarify each student’s role identity, unique contribution and thus foster collaborative understanding and relationships. Activities to achieve this could include, role play, case-based learning with assigned roles, interprofessional simulation exercises and reflective debriefing sessions.

### **Academic politics**

Different disciplinary narratives and cultures<sup>12</sup> including academic factors add to the complexity of interprofessional relationships between students. One of the factors students highlighted as a barrier to teamworking was the different academic requirements for students in different health professional programs being linked to the maintenance of hierarchical structures. A type of

‘academic politics’ between different health professions degree programs. Put very simply, academic politics can be described as the means by which faculty and academics within universities protect what they value within the academy.<sup>13</sup>

In this paper academic politics is interpreted as the web of interconnected factors involving authority, organizational processes and underlying beliefs at play in the faculty which have a bearing on how students in different degree programs perceive themselves and each other; and which consequently may have a bearing on their interactions. Setting different standards for each of the health professions programs communicates a relative value of these professions:

*... I heard that medics have... a higher pass rate than ours [health and rehabilitation sciences students]. So not only are their... admission requirements higher... they have to work really hard to maintain... being in the degree. So now I think that's where the feelings of 'we work harder than you guys' comes from. Whereas... our content is really... in detail and... we qualify as specialists in our various fields. So... they study longer and broader; but... we study shorter and... in detail so... its' not exactly a fair scale to measure who works more (FG03).*

*... my older friends who are medics... they do make a lot of jokes and a lot of microaggressions towards... health & rehab students and they don't see any fault in it... like it's just ingrained... I think... when your environment entertains that... mentality and... way of talking then... you're encouraged to keep going (FG07).*

These sentiments expressed by students suggest that the academic politics within this study context had implications for students' perceptions of the position of their own and other's professional programs and by extension, had implications for interactions between them. Academics' core values are shaped by each discipline's identity, institutional goals, and specific educational priorities. Academics protect what they value through various means including, curriculum development, adherence to accreditation standards, steering research directions, faculty recruitment, and strategic resource allocation. For example, physiotherapy faculty may prioritize clinical practice hours, seeing hands-on experience as essential, while occupational therapy might emphasize community-based learning. Academic

requirements are traditionally determined at an institutional level, highlighting the role of universities in subtly affecting relationships between students.

### **Institutional support**

By bringing diverse student groups together for shared learning, universities have been identified as favorable settings for the manifestation of contact theory's optimal conditions.<sup>14</sup> In this study, students made explicit links to institutional support. Within academic politics, the BHP course appears to be a pedagogical tool for promoting progressive, transformative relationships between diverse health sciences students:

*... BHP has made a lot of effort to sort of... promote equality of... all the professions... one time we were having a BHP lecture and the medics had just had a lecture before in that same venue. And then one of the [BHP] lecturers said 'no medics, go and split. Some of you will sit in this lecture hall, some of you sit in there' because they didn't want all the medics to sit in one place... otherwise it would look as if... we're trying to isolate ourselves from the other[s] (FG07).*

BHP facilitators represent the institution as educators; and in this capacity they were influential in shaping interactions between students. Students perceived facilitators as leaders in the BHP space, indicating their level of institutional authority over students. The role of the facilitator in relationship building was explicitly mentioned by students:

*... [our] facilitator... has built an environment where everyone can share. And he actually gives you time to... say your opinion. He allows you to do all those kinds of things which is... important for teambuilding (FG02).*

*...in BHP because we meet in these groups... we get to know each other, and we have a facilitator that guides us which makes it [teamwork] easier. Whereas in [the other course] we just have a lecturer that comes, talks and then it's over... you don't get that one-on-one time... so it makes it harder (FG03).*

The compulsory weekly facilitated group time in BHP is the sanction of institutional support which hypothetically promotes contact, interaction and eventually teamwork. In their recommendations based on implementing a compulsory, semester long, team-based IPE course for first year students,

Peeters et al. stated that institutional support, was “a very strong element” for success.<sup>15</sup> Although it would be useful to apply contact theory into real-world practice settings, universities are environments which allow for the manipulation of contact conditions, making it less unpredictable. Thus, contact theory should be implemented at the source; that is, in the formal programs where students acquire their training as health professionals.

### Conclusion

The aim of this study was to understand what students’ perspectives of teamwork were in the context of a first year IPE course. Within IPE, the inclination of clinical educators to avoid exploring theoretical frameworks “that had seemingly little practical relevance” is now being replaced by a more eager interest in theory and its application.<sup>16</sup> Contact theory has been identified as a pragmatic framework to design curricular activities in ways that could get optimal contact going between students from different professions.<sup>5</sup> This study’s findings indicate potential for further research of the usefulness of contact theory’s optimal conditions in IPE contexts, with the proviso that students’ emerging professional identification must be made salient. ‘Institutional support’ continues to be recognized as an important factor in the success of IPE<sup>14,17</sup> and for an institution steeped in a profound transformation journey, this condition ought to be considered in equal depth.

### Limitations

BHP brings diverse students together from different socio-economic backgrounds, and this reality certainly cannot be ignored. Notwithstanding, this study was located within IPE, thus the findings in relation to ‘equal status’ were considered in terms of inter-professionality only. “[E]qual status does not necessarily mean that the members come into the group with equal status; rather each member’s knowledge, skills and opinions are regarded as equally important to all others.”<sup>18</sup> Thus, mutual respect and value for the unique contribution of each professional in a healthcare team is central to interprofessional teamwork. Linked to this idea is the possible limitation that students from different professions could have been less forthcoming in sharing their perceptions of other professions during the FGDs. The complexity of the notion of academic politics points to an ontological limitation of the study. Using a more substantive theoretical framing would have facilitated a more nuanced understanding of the underlying richness of the data produced in this IPE context.

### Conflict of interests:

None

### Data statement:

Study data is not available. Participants were assured that data will not be shared.

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