

# The knowledge, attitudes and perceptions of healthcare students and professionals regarding the interdisciplinary health worker team at Stellenbosch University and Tygerberg Academic Hospital

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## Abstract

**Objective:** To determine the knowledge, attitudes and perceptions of healthcare students and qualified health professionals regarding the interdisciplinary health worker team.

**Design:** A cross-sectional descriptive study.

**Setting:** Stellenbosch University (Tygerberg Campus) and Tygerberg Academic Hospital, Western Cape.

**Subjects:** The sample ( $n = 529$ ) consisted of first-year students, final-year students and working professionals in the fields of medicine, dietetics, physiotherapy, occupational therapy and speech-language and hearing therapy.

**Outcome measures:** Self-administered, face-validated questionnaire.

**Results:** There was an increase in knowledge in the final-year students when compared to the first-year students of their understanding of each profession. However, this improvement was not apparent when the working professionals' understanding was compared to the final-year students. The results indicated an increase in understanding of the scope of practice of allied health sciences ( $p$ -value = 0.001), and agreement that the patient would always benefit from an interdisciplinary approach. It was found that better patient prognosis was strongly associated with the care provided by an interdisciplinary team. This association increased from first-year students to final-year students ( $p$ -value = 0.019). Doctors were considered to be most valuable in the interdisciplinary team. The allied health sciences received comparable value ratings. The more advanced the years of experience, the less comfortable participants were to assume some of the roles of another discipline. Knowledge of the role of the dietitian increased from first-year students to final-year students ( $p$ -value = 0.001), but it remained the same for the professionals.

**Conclusion:** There was an increase in knowledge and a positive change in the attitudes and perceptions of healthcare students and professionals in accordance with years of experience.

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## Introduction

The complex nature of current patient care requires the integration of two key factors: health professionals who are specialists in their fields, and for such professionals to work together efficiently.<sup>1</sup> Therefore, the establishment of interdisciplinary teams is important and is becoming a growing trend in healthcare settings.<sup>2</sup> Interdisciplinary teamwork is defined as combining or involving the expertise of two or more professions.<sup>3</sup> In health care, this involves team members who are specialised in their respective fields, including medicine, dietetics, physiotherapy, occupational therapy and speech-language and hearing therapy, and who work together to care for patients using a holistic approach.<sup>1</sup>

Rather than having its roots in health science universities, the concept of interdisciplinary teamwork was initiated by working health professionals. Because universities play such a major role in the training of health professionals, there is much support for measures to improve the preparedness of students to work together with other disciplines in the workplace.<sup>1</sup>

This descriptive, cross-sectional study was conducted in order to determine the views of professionals practising in these teams. The aim was to investigate the knowledge that each discipline has of the other professionals' roles in the team, as well as their perceptions and attitudes towards the interdisciplinary team and towards each other's skills. The focus was on whether these views changed over time with increased experience and exposure to interdisciplinary

teamwork. A secondary aim specifically included evaluating perceptions about the dietetic professional's value within the team.

## Method

### Subjects

In this descriptive cross-sectional study, qualitative and quantitative data were collected using a questionnaire.

The study population consisted of the following three groups: first-year students and final-year students at Stellenbosch University, and working professionals at Tygerberg Academic Hospital ( $n = 529$ ). The professions of medicine, dietetics, physiotherapy, occupational therapy and speech-language and hearing therapy were included. Doctors included those starting their second-year internship at Tygerberg Academic Hospital. All qualified professionals were included from the other disciplines, except those in their community service year.

The participants were selected through non-random purposive sampling. Only those who were present on the day of the arranged meeting and who were willing to complete a questionnaire were included. Ethics approval was obtained from Stellenbosch University's Health Research Ethics Committee. Completion of the questionnaires was voluntary and anonymous and included a consent form.

### Exclusion criteria

Stellenbosch University (Tygerberg Campus) does not offer a nursing, dentistry, psychology or social work qualification. Therefore, students and practising professionals in these fields were not included in this study. Only doctors commencing their second-year internship were included in the study, as it was not logistically feasible to include all doctors at the hospital. Foreign students taking part in an exchange programme offered by Stellenbosch University were excluded. First-year students repeating the year were not included, because their knowledge, attitudes and perceptions would not have been a true reflection of those of a first-year student. Individuals who had previously taken part in any other health sciences degree were excluded from the study.

### Study tools

Self-administered questionnaires were completed in January 2010 at Stellenbosch University (Tygerberg Campus) and Tygerberg Academic Hospital.

The questionnaire was developed by the researchers according to the objectives of the study and included a section on demographic information, as well as 16 open-ended and closed-ended questions. The closed-ended questions consisted of multiple-choice questions and Likert interval scales. The questionnaire was sent to an internal and external expert to ensure content validity.

A pilot study was performed to assess the face validity of the questionnaire and the clarity of the questions, as well as to streamline all data collection procedures.

### Data analysis

Data were grouped in frequency tables and reported in terms of descriptive statistics, as well as significant differences. The chi-square, Kruskall-Wallis and Bonferroni tests were applied to calculate significant difference. A  $p$ -value  $\leq 0.05$  was used to represent significance. Statistica® Version 9 and Microsoft® Office Excel® 2007 were employed for analysis.

## Results

The demographic information of the study sample is indicated in Table I. In total, 529 people gave informed consent to take part in the study. Of the 529 participants, 311 were first years, 166 were final years and 52 were working professionals. Of these participants, 213 were men and 316 were women. The mean age was 21 years.

### Knowledge, perceptions and attitudes of the healthcare students and health professionals

#### Knowledge regarding the interdisciplinary team

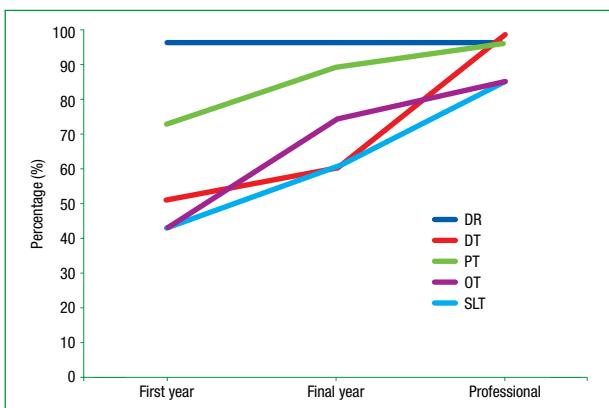
A significant difference was seen in the knowledge participants demonstrated of the definition of an interdisciplinary team according to the years of experience ( $p$ -value  $< 0.001$ ). There was an increase in the number of participants who had a good idea or some idea of what an interdisciplinary team was from the first-year students to the final-year students and working professionals (77% and 96% respectively). When the different disciplines were compared, no differences were found.

The knowledge that participants had regarding the scope of practice of each of the disciplines was evaluated. There was a definite increase in knowledge from first-year students (75%) to final-year students (88%) of their understanding of each profession. A decrease in knowledge was found from final-year students (88%) to working professionals (83%). Participants had the least knowledge of the role of a physiotherapist and a dietitian. The knowledge of the role of all professions, except doctors, increased from the first to the final year of study.

Figure 1 shows each group's knowledge of the different disciplines. The knowledge of the role of a doctor did not change with years of experience. However, there was a significant increase in the knowledge of the scope of practice of all the other disciplines

**Table I: Demographic information of the study sample**

Description	First years	Final years	Professionals
Average age	18	22	31
Women in total	237	32	47
Men in total	74	134	5
Doctors	180	95	8
Dietitians	29	15	14
Physiotherapists	37	18	13
Occupational therapists	41	21	12
Speech-language and hearing therapists	24	17	5
Total	311	166	52



DR: doctor, DT: dietitian, OT: occupational therapist, PT: physiotherapist, SLT: speech-language and hearing therapist

**Figure 1:** The percentage of participants who indicated good knowledge of the roles of the various disciplines

from first-year students to final-year students, through to working professionals ( $p$ -value < 0.001).

#### Perceptions regarding the interdisciplinary team

Data from the final-year students and working professional participants indicated that there were discrepancies as to when training on the interdisciplinary team was introduced. The final-year group reported that training was introduced in their first year of study (43%,  $n = 166$ ). The professionals reported receiving training in their third year of study (33%,  $n = 49$ ).

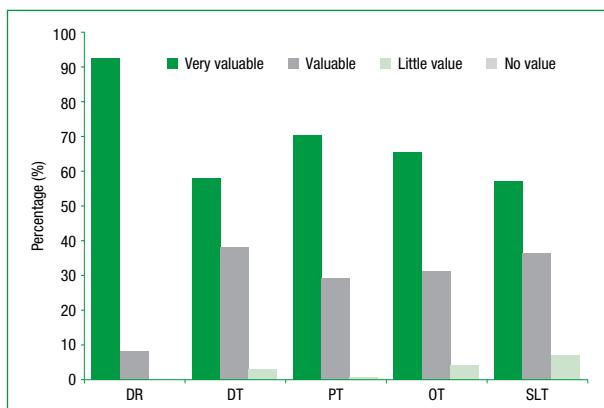
A higher percentage of final-year students, than working professionals, reported receiving training on the roles and responsibilities of each discipline. It was found that 69% ( $n = 115$ ) of final-year students claimed to be educated on the scope of practice of a dietitian, compared to 53% ( $n = 27$ ) of working professionals.

When asked whether working as an interdisciplinary team resulted in better patient prognosis, most participants were in strong agreement (76%,  $n = 400$ ). There was a significant increase in strength of agreement from first-year students to final-year students ( $p$ -value = 0.019). A decrease was found in strong agreement from final-year students to working professionals, although agreement was still greater than that among first-year students.

Virtually none of the participants thought that the interdisciplinary approach would "seldom" or "never" be of benefit to the patient. There was a significant increase in the percentage of students from first year to final year who thought that the patient would always benefit ( $p$ -value < 0.001). In this regard, a significant increase was also found from first-year students to working professionals ( $p$ -value = 0.002).

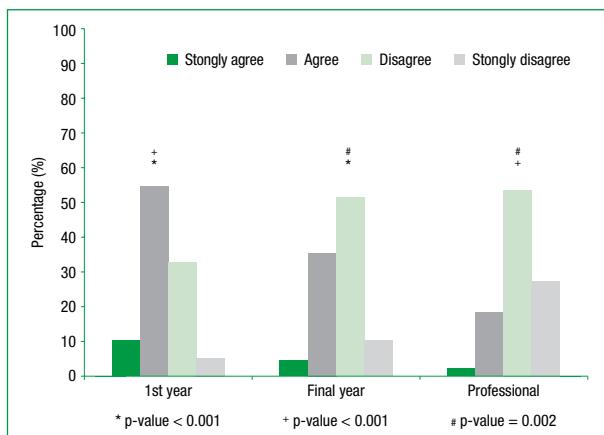
#### Attitude regarding the interdisciplinary team

Figure 2 reflects the attitude of the total study population when asked to rate the value of the various team members within the interdisciplinary team. Doctors were considered to be most valuable, while members of the allied health sciences received lower, yet similar, ratings. Significant differences were observed in the responses of first-year students compared to those of final-



DR: doctor, DT: dietitian, OT: occupational therapist, PT: physiotherapist, SLT: speech-language and hearing therapist

**Figure 2:** Participants' attitudes on the value of other members of the team

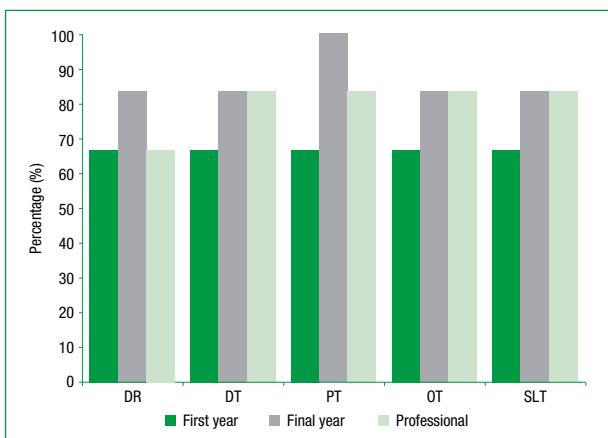


**Figure 3:** Attitudes expressed towards taking over some of the roles of another profession

year students when rating the value of the physiotherapist ( $p$ -value = 0.044), occupational therapist ( $p$ -value = 0.006) and speech-language and hearing therapist ( $p$ -value = 0.010).

There was a decrease in the number of participants who indicated a desire to know more about the scope of practice of all the disciplines from first-year to final-year students, through to working professionals. On average, 71% of first-year students wished to increase their knowledge of the different disciplines. Thereafter, a decrease was found. Only 19% of final-year students showed an interest in knowing more about the role of a doctor. Speech-language and hearing therapy had the highest percentage of professionals who showed a desire to know more about the discipline (59%,  $n = 30$ ). When compared to the other disciplines, dietetics seemed to have the most final-year students who wanted to know more about it (70%,  $n = 117$ ).

The majority of the total study population (91%,  $n = 469$ ) reported being willing to work in an interdisciplinary team, while a few indicated that they would, if necessary (8%,  $n = 40$ ). Hardly any participants preferred working alone (0.8%,  $n = 4$ ). A positive attitude towards working in a team was reported by first-year students (87%,  $n = 295$ ), final-year students (96%,  $n = 166$ ) and working professionals (98%,  $n = 52$ ). There was a significant difference in the



DR: doctor; DT: dietitian; OT: occupational therapist; PT: physiotherapist; SLT: speech-language and hearing therapist

**Figure 4:** Knowledge of the scope of practice of a dietitian

attitudes towards teamwork across the different years of experience ( $p$ -value = 0.006). The increase was noted from first-year students to final-year students.

Participants were asked to indicate how comfortable they would be in taking over some of the roles of another discipline. Of the working professionals, significantly more participants strongly disagreed that they would be comfortable with such role overlap (27%), compared to the first-year students (5%), as indicated in Figure 3.

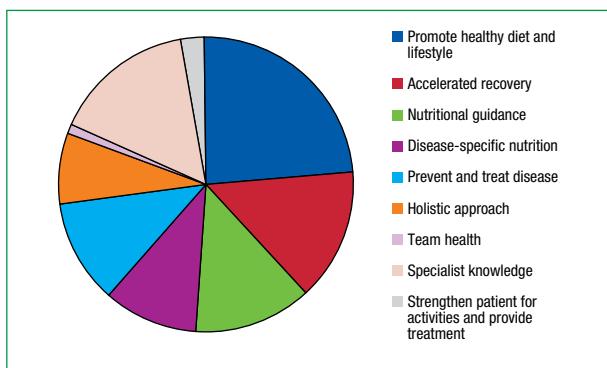
#### Knowledge and perceptions regarding the role of a dietitian in the interdisciplinary team

There seemed to be uniformity across the disciplines on knowledge of the role that a dietitian plays (Figure 4). There was a significant difference in knowledge in accordance with the years of experience of participants ( $p$ -value < 0.001). Knowledge increased from first-year students to final-year students, and then remained constant when compared to that of working professionals. Interestingly, understanding seemed to lessen from final-year medical students to working doctors (83% and 67% respectively). \*

Participants were asked about the benefits, if any, of having a dietitian on an interdisciplinary team. Figure 5 illustrates the types of response that were obtained, as well as the percentage of total responses that were contributed by each. The most common benefit perceived by respondents was a contribution to overall patient well-being and a healthy, balanced lifestyle through the promotion of optimal nutrition (24%). Secondly, the dietitian was acknowledged to have specialist knowledge and nutritional expertise that was lacking in other disciplines (15%). Acceleration of the recovery and healing process in patients through optimal nutrition was the third most common listed benefit (14%).

#### Discussion

In a report on an analysis of the concept of teamwork, Xyrichis and Ream proposed a definition for teamwork in the context of the healthcare setting. This definition included the involvement of working professionals from different disciplines who understood each other's roles, communicated openly and shared mutual goals.<sup>4</sup>



**Figure 5:** Perceived benefits of having a dietitian in the team

The definition used in the present study as a standard by which participant responses were evaluated encompassed all of these aspects. It was found that although some participants had a good understanding of what it meant to work in an interdisciplinary team, a large proportion only had some idea of what was involved, and some, mostly first-year students, had no idea of what the concept entailed. Xyrichis and Ream have reported that a universal understanding of teamwork is essential to ensure effective implementation of the interdisciplinary approach.<sup>4</sup> According to the Health Professions Council of South Africa, the scope of practice of the dietitian includes providing nutritional advice, promoting an optimal diet, ensuring disease-specific patient nutrition, as well as contributing to the prevention and treatment of various diseases.<sup>5</sup> These roles were identified by participants as the benefits of having a dietitian in the interdisciplinary team. Most of the participants displayed suboptimal knowledge of the scope of practice of the dietitian. Although this knowledge improved from the first-year students to the final-year students, it did not increase further in the working professionals, and decreased to the level of first-year students in the medical profession. The students' perceived understanding of the scope of practice correlated with the level of knowledge that was shown. However, the working professionals tended to think that they had a better understanding than that reflected by their knowledge.

In general, it was found that there was an increase in knowledge of the roles of the various disciplines from first-year students to final-year students, but there was a decline in knowledge in working professionals. The lower level of knowledge that was evident in the first-year students can be attributed to the fact that they have not yet been exposed to the scopes of practice of their future colleagues.<sup>6</sup> Participants had the least knowledge of the role of the physiotherapist, although they considered their understanding of the scope of practice of the physiotherapist to be very high. It was interesting to find that the participants had the best knowledge of the role of the speech-language and hearing therapist, although the perceived understanding that was expressed did not correlate with actual understanding. This was viewed as the discipline with the lowest level of understanding. The reasons behind these discrepancies were unclear. Most participants had a good understanding of the role of the doctor, and interestingly enough, the first-year students tended to have a better understanding than the other groups. In the researchers' opinion, this could be attributed to the possibility that in practice, doctors fulfil roles that may be perceived to be within

other health professionals' scope of practice. It was observed that with increased experience, there was a decrease in the desire to learn more about the scope of practice of the various disciplines. This could be linked to a perception of a better understanding of the professions with increased experience.

In the current study, the participants believed that the doctor was the most valuable member of the interdisciplinary team, whereas members of the allied health professions were not rated as highly. Various studies have documented that the physician plays a dominant role.<sup>7,8</sup> In this study, the doctor was often viewed as the leader of the team. This may contribute to a tendency to ascribe a higher value to the profession.

In a survey by Leipzig et al, it was found that the students of the three different disciplines included in the study agreed that working as an interdisciplinary team would have benefits for the patient.<sup>9</sup> It was proposed by Xyrichis and Ream that teamwork resulted in higher quality of patient care, as well as better patient prognosis.<sup>4</sup> These findings were echoed in the results of the present study, wherein most participants strongly agreed that the team approach would be of benefit to the patient and would result in better patient prognosis.

In the present study, it was observed that final-year students and working professionals were less comfortable with taking over some of the roles of another discipline than the first-year students. It could be that as healthcare students and professionals become more specialised in their own fields, they become less at ease with taking on responsibilities for which they are not necessarily qualified.

According to the literature, there is no consensus as to when the concept of interdisciplinary teamwork, as well as the introduction of the roles of the different team members, should be incorporated into the education of healthcare professionals.<sup>1</sup> In the current study, it was found that there was no consensus among final-year students and working professionals as to when the concept of an interdisciplinary approach, as well as the roles of the various disciplines, were introduced. However, most indicated that they had been introduced at some stage. Not all the working professionals received their tertiary education at Stellenbosch University. This could account for the discrepancies relating to when the concept of the interdisciplinary team was introduced and the amount of exposure received with regard to working in an interdisciplinary team in the undergraduate setting. From the survey of Leipzig et al, it was seen that participants demonstrated a positive attitude towards teamwork.<sup>9</sup> In the current study, the majority of participants across the different disciplines, as well as years of experience, also expressed a positive attitude and willingness to work as a team.

### Conclusion and recommendations

It can be concluded that there was an increase in the knowledge and a positive change in the attitudes and perceptions of healthcare

students and professionals on the interdisciplinary team in accordance with years of experience. A positive attitude towards teamwork was expressed. This creates a favourable platform for interventions that are aimed at improving interdisciplinary collaboration.

A limitation of the study was the ratio of students to working professionals. The large number of first-year students accepted at Stellenbosch University had decreased by the final year, and the number of personnel at Tygerberg Hospital was limited. Only a small sample of qualified doctors was included. A larger sample could have been more representative. Also, working professionals had received their education from different tertiary institutions.

Deliberate efforts should be made to introduce students to the concept of interdisciplinary teams, as well as the roles of the different disciplines from the initiation of study. Ongoing training should be provided for working healthcare professionals in this regard, especially as in this study it was found that they did not have the expected level of knowledge, particularly on the role of the dietitian, although they thought that they did.

Future research could take a prospective approach and observations made on how knowledge, attitudes and perceptions change over time (from the beginning of study). Research that investigates the implementation of interdisciplinary teamwork in healthcare institutions could also be of interest. The results of the current study might be used as a platform for the development of specific interventions to improve interdisciplinary health care.

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