

Knowledge, attitudes, perceptions and experiences of healthcare sciences students using the international classification of functioning, disability and health to foster interprofessional collaborative practice

T P Moruwe,  R M Mavhungu,  V R Ndhlovu,  M N Nematikanga, B OT (UL), MPH 
H Pitout, B OT (UP), M Occ Ther (Medunsa) PhD 

Department of Occupational Therapy, School of Health Care Sciences, Sefako Makgatho Health Sciences University, Ga-Rankuwa, South Africa

Corresponding author: V R Ndhlovu (vutivirndhlovu@gmail.com)

Student-author biography

Student authors (VR Ndhlovu, TP Moruwe, and RM Mavhungu) conducted the study in partial fulfillment of Bachelor of Occupational Therapy at Sefako Makgatho Health Sciences University. They are currently completing community services in public hospitals across South Africa.

Background. The International Classification of Functioning, Disability and Health (ICF) provides a common language for students from different professions to discuss health-related conditions. This common language contributes to person-centred care and further facilitates Interprofessional Education and Collaborative Practice (IPECP). However, there is limited knowledge about the use of ICF by healthcare sciences students to foster IPECP.

Objectives. To assess the knowledge, attitudes and perceptions of healthcare sciences students and their experiences in using ICF to foster interprofessional collaborative practice at Sefako Makgatho Health Sciences University.

Methods. A quantitative, descriptive, cross-sectional survey design was used. A non-probability convenience sample size of 90 students completed the questionnaire. A self-administered questionnaire generated in Google Forms was used to collect data over two weeks. Descriptive statistics were used to analyse data in Microsoft Excel.

Results. The majority of the participants (73%) demonstrated good knowledge of ICF, and 72% had positive attitudes towards the ICF and its usage. Only 62% perceived the ICF as useful in collaborative practice, while 63% showed positive experiences when using the ICF form. The challenges experienced prompted suggestions to improve the efficacy of the ICF form.

Conclusion. Good knowledge of the ICF could have positively impacted participants' attitudes and perceptions, further translating into positive experiences when using the ICF to foster interprofessional collaboration. The results highlight the importance of using the ICF as a tool to foster collaborative practice, which is essential for quality patient care.

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Interprofessional Education and Collaborative Practice (IPECP) involves students from various professions learning from and with each other.^[1] IPECP consists of both the interprofessional educational aspects, learning in a lecture setting and a practical collaborative aspect, where students apply the acquired knowledge during clinical rotations. The IPECP programme was informally introduced at Sefako Makgatho Health Sciences University in Gauteng Province, with the intention of incorporating it into the curriculum of all final-year students in the School of Health Care Sciences (SHCS), which includes the departments of Occupational Therapy, Physiotherapy, Speech-Language Pathology and Audiology, Human Nutrition and Dietetics, and Nursing Sciences. The university is now in the process of formally

integrating the use of the International Classification of Functioning, Disability and Health (ICF) within IPECP, into its curriculum.

Professions from various fields often use their jargon during collaboration, resulting in a language barrier that hinders effective interprofessional collaboration. To address this issue, it was essential to implement a tool that would facilitate the use of a common language among the different professions. The ICF was a solution to the problem. The ICF framework defines health using standard operational definitions of functioning and disability. The framework distinguishes among three key components: contextual factors; body functions and structures; and activity-limitations and participation restriction.^[2] The ICF provides a classification of a patient's health, taking into account their environmental

and personal factors based on the principles of person-centred care and the biopsychosocial model.^[3] Fig. 1 outlines the dynamic interaction between the ICF components, as an effect on one component influences all other components.

The formal integration of the ICF within IPECP into students' curricula across all schools at the university is yet to be recommended. However, integrating the ICF in various professions could enhance students' understanding of the ICF and further promote the use of a common language through the ICF within IPECP.^[5,6] As part of the introductory process, before recommending the formal integration of the ICF into students' curricula, students receive a large class lecture during IPECP week and engage in collaborative case study analysis. The IPECP week thus prepares students for the application of the ICF when engaging with patients, other students and staff during their clinical rotations. The university introduced an ICF form which students were expected to complete and submit at the end of their clinical rotations for one of the patients they treated.

The ICF form combines information on the patient's condition from all professions into a single document. The ICF form, developed by Snyman *et al.*^[5] at Stellenbosch University, comprises four A4 pages. The first page contains a summary of the patient's demographic details, diagnosis, and special investigations. Page 2 includes a list of body functions and systems while page 3 focuses on activity limitations and participation restrictions. Page 4 contains environmental and personal factors as well as a summary of the combined priority plans of all professions and space for details of team members involved in completing the form with their contact details.

Although the IPECP programme focuses on education, its collaborative aspect, which occurs mainly during clinical rotations, has a direct impact on patient care. In previous studies, familiarity with the ICF framework was positively correlated with attitudes and perceptions of members of the interprofessional team.^[7] Limited understanding and negative attitudes toward the use of the ICF framework could hinder patient care quality.^[8] The adoption of the ICF framework as an educational and clinical tool for health professionals has been slow and uneven in health curricula worldwide.^[9]

There is limited scientific evidence on healthcare sciences students' use of the ICF to improve IPECP. However, the ICF was highly useful in the comprehension and conceptualisation of patients' functioning, as it helped to present patients' health profiles during IPECP meetings.^[2] According to Snyman *et al.*,^[5] the ICF was a catalyst for IPECP and provided a systemic means of interprofessional team involvement in catering for the needs of patients beyond their immediate diagnosis. The implementation of IPECP, in which the ICF is embedded, fostered mutual respect among the interprofessional team members, resulting in greater accountability, collaborative leadership and a culture of ongoing learning.

Rhoda *et al.*^[10] revealed differences in students' knowledge of the ICF during clinical rotations. The students who did not understand the ICF framework failed to apply it during clinical rotations within the interprofessional team.^[11] Fernandes *et al.*^[12] noted that students who had received formal lectures on the ICF were more knowledgeable about the ICF framework than those who had not received the lectures.

According to Rhoda *et al.*^[10] some students did not perceive the ICF as a useful clinical tool and lacked interest in learning its application. Students perceived the ICF as a tool that only measured body structures and functions and did not comprehend the importance of activities,

participation and environmental factors. The negative attitude towards the ICF during IPECP led to a misinterpretation of the ICF in patient treatment. More training opportunities could have improved the attitude and perception toward the usefulness of the ICF, and possibly influence the quality of patient care.^[10] The use of the ICF in IPECP improved the students' attitudes and behaviour.^[7]

Some students indicated that the ICF framework allowed joint decision-making in an interprofessional team for the benefit of patients.^[13] Theil^[3] also concluded that the ICF was effective in providing functional descriptions that allowed students to deliver a standardised and personalised health service. The framework has effectively guided students in making appropriate patient referrals to other healthcare professions.^[5]

Some students struggled to integrate the ICF concepts with the knowledge they acquired from their respective professions, while others struggled to translate the ICF components into practice during clinical rotations.^[14] Some students stated that the ICF form was excessively time-consuming and contained unnecessary information.^[5] In light of this, the objectives of the current study were to assess the knowledge, attitudes, and perceptions of healthcare sciences students and their experiences in using the ICF to foster interprofessional collaboration at Sefako Makgatho Health Sciences University.

Methods

A quantitative, descriptive cross-sectional survey was conducted to assess the knowledge, attitudes and perceptions of healthcare sciences students and their experiences regarding the use of the ICF to foster interprofessional collaborative practice at Sefako Makgatho Health Sciences University. The study design facilitated the collection of data that reflected the knowledge, attitudes, perceptions and experiences of final-year SHCS students when using the ICF.^[15]

Participants and sampling

The study comprised students from the SHCS. A non-probability convenience sample of 90 students completed the questionnaire. They were sampled based on their availability and accessibility.^[15] Inclusion criteria included being a final-year student from the SHCS and being exposed to the ICF during IPECP. The questionnaire was piloted on 15 final-year students of SHCS from the class of 2021 following their previous exposure to the ICF. The purpose was to test if items in the questionnaire were clearly formulated and comprehensive enough, and to assess the online data collection process.

Data collection

Researchers collected data over two weeks through an online self-administered questionnaire. An invitation to participate, with an explanation of the study's purpose, was circulated to final-year students in SHCS via emails and their respective class WhatsApp groups. An informed consent form was signed before accessing the Google Forms survey. The questionnaire consisted of two sections: section A, which captured the demographic characteristics of participants and only required participants' gender and course, thus ensuring anonymity and privacy and section B which had four subsections that captured the knowledge, attitudes, perceptions and experiences of participants based on a Likert scale. Furthermore, the questionnaire included three open-ended questions that focused on the experiences of participants when completing the ICF form. These questions focused on the format's user-friendliness and the content. Ethical approval was obtained

from the Sefako Makgatho University Research Ethics Committee (ref. no. SMUREC/H/230/2022:UG). The obtained data were password protected and only accessible to the researchers, ensuring privacy and confidentiality in compliance with the Protection of Personal Information Act (POPIA).

Data analysis

Data analysis was conducted using Google Forms and Excel (Microsoft Corp., USA). Descriptive statistics were used to summarise the data,^[15] with results presented as percentages and frequencies.

Results

Data were collected from 90 healthcare sciences students. The demographic characteristics of the participants are presented in Table 1.

The participants showed good knowledge of the ICF (Fig. 1), with 73% (n=66) of participants indicating that their knowledge of the ICF was sufficient and enabled collaborative practice, 16% (n=14) remained neutral, while 11% (n=10) had limited knowledge of the ICF form and framework.

Most students had positive attitudes towards the ICF and its usage. (Fig. 2), with 72% (n=65) demonstrating positive attitudes, whereas 15% (n=13) remained neutral and 13% (n=12) had a negative attitude towards the ICF use.

A majority (62%; n=56) of students perceived the ICF to be useful in fostering collaborative practice and believed that the ICF form allowed them to effectively plan treatment during clinical rotations. In contrast, 20% (n=18) of students remained neutral, while 18% (n=16) had a negative perception of the ICF (Fig. 2).

The students showed positive experiences when using the ICF. A majority (63%; n=57) of students reported positive experiences with using the ICF for collaborative practice, while 24% (n=21) remained neutral and 13% (n=12) experienced challenges in using the ICF. The three open-ended questions further revealed that 16 (27%) of the 57 students who reported positive experiences with using the ICF for collaborative practice reported that the ICF form made patients’ information easily accessible to the interprofessional team. Twenty-three percent (n=13) of students stated that the ICF promoted team collaboration. Eleven percent (n=6) of the students indicated that the ICF form allowed the team to provide holistic patient care and 26% (n=15) indicated that the ICF assisted in planning treatment. Thirteen percent (n=7) indicated that because the ICF form required planning treatment together, it facilitated the clarification of

the roles among team members. Among the 12 (13%) students who experienced challenges, 47% (n=6) reported that the use of the ICF form was time consuming, 19% (n=2) stated that the ICF form made it difficult to collaborate with other team members and 34% (n=4) reported that the ICF was complex and contained difficult terminology.

Discussion

In this study, there was a 4:1 ratio of female to male participants. This could be because healthcare professions have historically been female dominated, resulting in fewer men enrolling in the specific professions considered in this study.^[16] The majority of participants were from the occupational therapy programme, followed by those from physiotherapy. The higher response rates may be attributed to the emphasis placed on the ICF by lecturers in the included departments and the encouragement given to students to complete the ICF form at the end of their clinical rotations.

A significant proportion of participants demonstrated good knowledge of the ICF, sufficient for collaborative practice. A majority majority of participants showed positive attitudes towards the ICF and its usage. The ICF was perceived as useful by most participants in fostering collaborative practice during clinical rotations. A considerable proportion of participants had positive experiences using the ICF for collaborative practice, whereas a small percentage reported challenges in using the ICF.

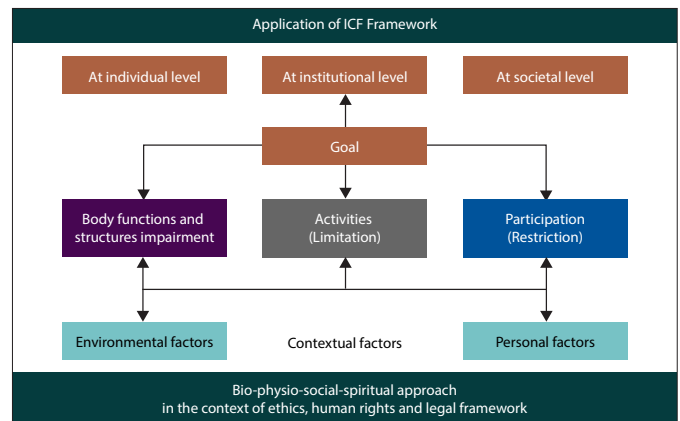


Fig 1. The ICF as interprofessional care and collaboration framework adapted from WHO (2001). Used with permission of Talaat and Ladhani (2014).

Characteristics	n (%)
Gender	
Female	71 (78.9)
Male	18 (20)
Other	1 (1.1)
Profession	
Human Nutrition and Dietetics	8 (8.9)
Nursing Sciences	13 (14.1)
Occupational Therapy	7 (7.8)
Physiotherapy	29 (32.2)
Speech-Language Pathology and Audiology	33 (36.7)

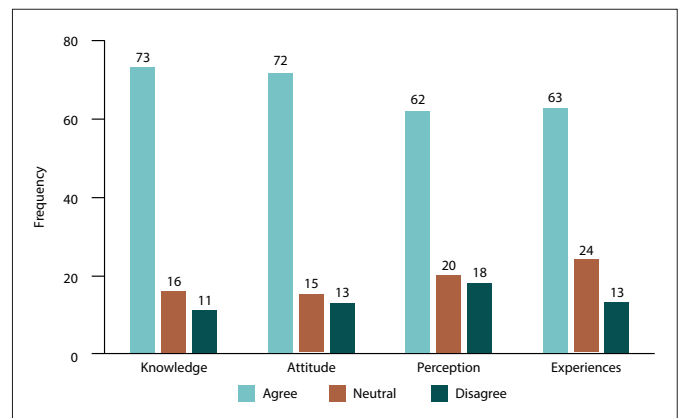


Fig 2. Knowledge, attitudes, perceptions and experiences of using the International Classification of Functioning, Disability and Health.

Knowledge of the ICF

To strengthen students' knowledge of the ICF, a formal integration of the framework into student curricula is required. The current study found that the majority (73%; $n=65$) of participants had good knowledge and understanding of the ICF. A possible reason could be that some participants were introduced to the ICF in their first year, before the IPECP programme. However, all final-year students were introduced to the ICF through a 2-hour lecture, and received a study guide on the ICF. This lecture and study guide were effective in equipping most of the participants with the necessary knowledge of the ICF. These findings are consistent with results reported by Rhoda *et al.*^[10] However, when interpreting these findings, it is important to consider the potential influence of acquiescent responses.

The remaining 27% of participants ($n=24$) who indicated that their knowledge and understanding were insufficient, raised some concerns, highlighting the need for more lectures on the ICF. This supports the findings by Rhoda *et al.*^[10] that revealed the general lack of the ICF knowledge among students as evident in failure to apply the framework. These results may be attributed to participants who had difficulty understanding the components of the ICF during the IPECP programme or did not attend the ICF training. Another possible explanation could be that it was not mandatory for these participants to complete and submit the ICF form after their clinical rotations.

Attitudes towards the ICF

A previous study that reported a correlation between knowledge and attitude towards the ICF informed the present study's assessment of the students' attitudes towards the ICF.^[7] Our results revealed that among the participants who had good knowledge of the ICF, 72% ($n=65$) showed positive attitudes towards the ICF and its usage. This could be because participants observed the value of team collaboration when completing the ICF form. The participants commended the mutual respect and recognition of the roles of other team members. In addition, it can be ascribed to team members believing that the ICF promoted effective communication.^[5] Some participants 13% ($n=12$) showed negative attitudes towards the ICF and its usage. This could have been motivated by the failure to see the relevance of the ICF form. The study by Rhoda *et al.*^[10] also outlined that students did not have an interest in learning how to apply the ICF as a clinical instrument because they found the framework tedious and ineffective. Negative attitudes could be due to insufficient understanding of the ICF form and its use or that the ICF form was not considered user-friendly. The lack of cohesion of the team may also have resulted in negative attitudes towards the ICF.^[12]

Perceptions towards the ICF

The perceptions towards the use of the ICF were satisfactory, with 62% ($n=56$) of the participants indicating its usefulness. These findings are similar to those of Sagahutu,^[7] who reported a positive correlation between knowledge, attitudes and perceptions towards the ICF. Participants with positive perceptions believed that the ICF form was sufficient to plan treatment and facilitated interprofessional collaboration during clinical rotations. Participants also believed that the ICF training needs to be introduced in the first year of study at the university. Only 18% of participants ($n=16$) had negative perceptions towards using the ICF. This might be because participants found the ICF form difficult to

complete, lengthy and in need of updates. Other possible reasons could be superficial knowledge and negative attitudes toward the ICF.

Experiences of using the ICF

A significant proportion (63%) of participants ($n=57$) reported having a positive experience when using the ICF for collaborative practice. Participants stated that the ICF form facilitated holistic patient care, informed the team about interventions done by other professions, and enabled role clarification. Some participants also mentioned that the ICF form was difficult to complete, which could be attributed to superficial knowledge. Some participants (13%; $n=12$) experienced challenges in using the ICF and stated that the ICF form was time-consuming. Others stated that the ICF form made team collaboration difficult owing to the constant need to remind other team members to complete the form. Moreover, participants reported that the ICF was complex and contained difficult terminology. These challenges may have led to some students not taking the ICF form seriously, resulting in incomplete forms. These findings corroborate those of Snyman *et al.*,^[5] which revealed that some students found the ICF time-consuming and containing unnecessary details that were often impractical to implement considering the clinical workload. The reported challenges related to the ICF form helped researchers make recommendations for revision and improvement of the form.

Study limitations

The study used convenience sampling which influenced the sample size. The unequal representation of the professions introduced an element of under-coverage and non-response bias,^[15] which could have skewed the results. We believe that collecting data for a period longer than two weeks and conducting a face-to-face survey, rather than an online survey, could have improved the response rate. We believe that not being present when participants were completing the questionnaire to provide clarity if needed, may have influenced the results. For in-depth information about the challenges students experienced using the ICF, we recommend the use of a qualitative research design. The study was carried out at one institution and cannot be generalised to a larger population.

Conclusion

The study assessed the knowledge, attitudes and perceptions of healthcare sciences students and their experiences of using the ICF to foster IPECP. It was found that good knowledge of the ICF had a positive impact on the attitudes, perceptions and experiences of using the ICF. The challenges experienced were related to the difficult terminology and length of the ICF form. Our findings demonstrate the need to recommend the formal integration of the ICF into students' curricula to further strengthen collaborative practice.

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