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# Enhancing audiology students' understanding of person-centered care: insights from an multi-national virtual student conference

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**ABSTRACT**

**Objective:** This project sought to investigate the impact of a multi-national peer learning initiative in facilitating a student-led conference on person-centred care (PCC). The primary objective was to assess students' comprehension of PCC elements before and after engaging in the opportunity, with a concurrent evaluation of the efficacy of the opportunity.

**Design:** A mixed-methods study protocol was followed. Following the conference, participants completed a four-part survey including (a) demographics, (b) retrospective pre-post Likert scale, (c) Likert rating of conference experience and (d) five open-ended questions.

**Study sample:** One hundred and four participants (92.4% female) with a mean age of 21 years (0.07 SD) participated in the study.

**Results:** A significant difference in awareness pre-post conference was demonstrated across all topics (WSR, $p < 0.001$) with participants satisfied with the conference. Qualitative analysis revealed three main themes: (a) application of PCC; (b) perspectives of PCC; and () barriers to PCC; with nine sub-themes.

**Conclusion:** The conference was beneficial in enhancing students' awareness of topics and principles of PCC. Innovative pedagogical approaches should be considered in order to enhance healthcare education allowing future clinicians to better meet the dynamic needs of their clients.

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Person-centred care; PCC; audiology; peer learning; student training; clinical education

## Introduction

The emergence of a borderless world resulting from globalisation has brought about significant changes in education, allowing learning to extend beyond the confines of traditional classrooms (Lehtomäki, Moate, and Posti-Ahokas 2016; O'Dowd 2017; Yamada 2021; Zajda 2020). The utilisation of globalised and multi-national learning opportunities equip students with the necessary skills for success in a modern global society (Dill 2013; Lehtomäki, Moate, and Posti-Ahokas 2016). It provides students with engaging experiences that foster an understanding of their own values and attitudes within a broader global context (Bourn 2014). Furthermore, this pedagogical approach enables students to engage with diverse cultures, languages, and ways of thinking through interactions with a varied group of peers (Bourn 2014; Denson and Bowman 2013).

Peer learning has proven to be effective in nurturing communication skills and critical thinking, as it challenges students to articulate their thoughts, explain concepts, and defend their ideas, thereby fostering deeper understanding and effective self-expression (Hilsdon 2014). Peer learning also promotes active engagement and participation, as students become active contributors to the learning process rather than passive recipients of information from teachers. This active involvement enhances students' comprehension and retention of the subject matter (Hautala and Schmidt 2019; Liu and Shirley 2021). By engaging in these learning initiatives, audiology students can gain invaluable opportunities to enhance critical thinking, leadership, problem-solving, and intercultural communication skills within diverse healthcare settings fostering the competences required in providing person-centred care (PCC).

PCC is firmly rooted in the principles of client empowerment and engagement. It emphasises active participation of clients in their own care while considering their unique requirements, preferences, and experiences in the design and delivery of assessment and intervention services (WHO, 2015). With endorsement from the World Health Organization (WHO, 2015), PCC has gained widespread recognition and acceptance in the healthcare field (Choy-Brown 2021). More recently, the International Organisation for Standardisation (ISO) standards (ISO, 2021), focusing on PCC principles, have been established, aiming to

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support healthcare organisations in consistently and effectively providing PCC.

Implementing a PCC approach has demonstrated positive impacts on health outcomes, including enhanced client satisfaction and treatment adherence (de Wit et al. 2019; Dwamena et al. 2012; Manchaiah et al., 2017). Accumulating empirical evidence suggests that the integration of PCC may effectively address the comprehensive needs of individuals, resulting in heightened treatment adherence and an overall increase in satisfaction (Brice and Almond 2022; Meyer et al., 2017; Oosthuizen et al. 2022; Searchfield, Linford, and Durai 2019). Furthermore, the active participation and engagement of individuals in their healthcare, as advocated by the tenets of person-centeredness, align with ethical practice principles, particularly those pertaining to autonomy, fostering a collaborative distribution of power and responsibility between patients and healthcare providers in the decision-making process (Granberg and Skagerstrand 2022; Håkansson Eklund et al. 2019). Educating practitioners, especially the next generation of professional's is crucial in order to foster person-centred attitudes and behaviours.

Although PCC is acknowledged as a core component of the curriculum in several health professions, such as medicine, physiotherapy and audiology, students often lack sufficient opportunities to develop their communication skills during their undergraduate training (Alelwani and Ahmed 2014; Sanson-Fisher et al. 2018; Thomson et al. 2014). Historically, the audiology profession has prioritised technical aspects, with the assumption that patient interaction, counselling, and communication skills are acquired through clinical practice (Mahomed-Asmail et al. 2023; Tai, Barr, and Woodward-Kron 2019). To foster a person-centred approach, it is imperative for educational environments to prioritise the development of communication skills and empathetic relationships.

The Ida Institute, founded in 2007, with the purpose of promoting PCC in audiology, utilised an international learning opportunity to engage students across the globe on PCC in October 2022. This initiative brought together over two hundred audiology students from various universities worldwide, providing them with a platform to connect, learn, and engage on the topic of PCC. The objective of the conference was two-fold, to offer a student-led multi-national conference for audiology students, and to increase awareness of PCC concepts in audiology. The aim of this study was to determine student awareness of PCC elements using a pre-post intervention assessment paradigm, and to explore answers to open-ended questions as a program evaluation of this inaugural multi-national student conference.

## Method and materials

The mixed-methods study protocol included an e-survey with retrospective pre-post close-ended questions providing quantitative responses and open-ended questions that provided qualitative responses. Approval was sort from Nova Southeastern University Institutional Review Board (IRB, #2022-447) prior to the conference. The conference was hosted by the Ida Institute and six of their academic partners including (a) Aston University, United Kingdom, (b) Nova Southeastern University, United States, (c) Rush University, United States, (d) University of Cape Town, South Africa, (e) University of Pretoria, South Africa, and (f) University of Southampton, United Kingdom. Faculty members from each university mentored volunteer students in the development of self-selected PCC topics.

### Conference planning

Planning for the conference by faculty (FMA, NN, SH, VW) and IDA institute started six months prior to the conference date. One student (LM) served as the conference committee leader with another (CR) as the facilitator on the day of the conference. Invitations to participate in the conference were distributed via email and on the Ida online platform to Ida Institute's Person Centred Hearing Network's (PCHN) academic partners. Only six of the twelve partners were able to participate in the event. Logistical planning took place through Zoom and included: (a) date and time selection, (b) advertising and promotion of event, (c) selection and testing of the learning platform, (d) scheduling sessions, (e) coordination of presentation materials, (f) audience engagement strategies, (g) survey development, (h) promotion of event and (i) evaluation of the event.

The conference was held on October 11, 2022 from 2 pm – 5 pm UCT. Zoom premium platform was utilised to accommodate the number of students attending and facilitate the use of different types of engagement technology employed during the conference. Across the three hours, six interactive live 20 minute sessions took place. The names of the participating institutions, topics presented, content summaries, and links to recordings of the live sessions are shown in Table 1. Each session was unique as some included animations, interviews and standard presentations of students' experiences and/or what they have learnt regarding the topic. Engagement strategies during the live engagement ranged from polls, a Slido wordcloud that updated in real-time, continuous meeting chat, and a dedicated session at the end to discuss and answer questions.

### Participants

Participants joined the virtual conference either with their peers in a lecture hall or individually at home. They logged into the conference via the online Ida learning platform on the date of the event. As guided by the participating institution, attendance was either compulsory or optional. Two hundred and three students registered prior to the event through the Ida Institute. Only one hundred and five students from six participating institutions provided consent for the use of their responses.

### Survey

A survey was developed by the planning committee using Qualtrics and deployed following the conference (Supplementary content 1). The survey consisted of four sections: (a) demographic data, (b) a retrospective pre-post 5 point Likert scale survey, (c) a 5-point Likert scale on satisfaction of conference experience and (d) five open-ended questions.

Students provided their demographic data which included gender, ethnic group, country and institution of participation. This was followed by a retrospective pre-post survey where participants were asked to rate their level of awareness of the six topics on a Likert scale from 1 to 5 (1 = *Not at all aware* and 5 = *Extremely aware*). Pre-post assessment of attributes in the learning domain are best reported once the student has been exposed to the content and has the opportunity to reflect and realise what new concepts have been introduced (Bhanji et al., 2012; Little et al. 2020; Pratt, McGuigan, and Katzev 2000). For this study, the retrospective pre-post assessment paradigm was used to assess the level of *awareness* of PCC topics, and to reflect and rate their level of awareness for each element prior to and

**Table 1.** Details of sessions.

| Session Topic | Presenting Institution | Summary of Content | Session Recordings* |
|---|---|---|---|
| **Session 1:** Understanding Clients Perspectives of Person Centred Care | University of Pretoria, South Africa | The six elements of PCC were discussed. Video recordings of interviews with three individuals with hearing loss on their value of PCC were played during this session. | https://vimeo.com/781797209?share=copy |
| **Session 2:** The transition from university to placement, and how to begin implementing PCC in the clinic | University of Southampton, United Kingdom | A student's experience of i) transitioning to clinic, ii) common mistakes made during the transition, and iii) practical examples for implementing PCC were provided. | https://vimeo.com/781812125?share=copy |
| **Session 3**: Simulated Patients Online | Aston University, United Kingdom | The effect that COVID-19 and how PCC was implemented in online consultations was discussed. | https://vimeo.com/781762851?share=copy |
| **Session 4:** Removing Barriers to PCC | Rush University, United States of America | The impact of health literacy on PCC with practical examples on how to overcome barriers when implementing PCC within community outreach programs. | https://vimeo.com/781763849?share=copy |
| **Session 5:** Overcoming Barriers to PCC in South Africa | University of Cape Town, South Africa | The cultural barriers within the South African context was discussed. Recommendations on which Ida tools should be used to overcome the barriers were made. | https://vimeo.com/781775246?share=copy |
| **Session 6**: Cultural Humility in the Clinic | Nova Southeastern University, United States of America | The differences between cultural competency ("I'm the expert") and cultural humility ("You're the expert") were highlighted and discussed in the light of PCC. | https://vimeo.com/781776288?share=copy |
| **Session 7:** Engagement with speakers | All participating University hosts engaged with the participants on questions/queries raised | | |

*Permission was obtained from the Ida Institute to share the video links (Ida Institute 2022).

after the conference. The last quantitative section included six questions with a 5-point Likert scale (*1 = Not at all satisfied and 5 = Extremely satisfied*) where students were required to rate their satisfaction with the conference with regards to organisation, timeframe, content, opportunities provided, technical aspects and overall general experience.

Participants then answered five open-ended items that explored their thoughts on the most impactful and challenging PCC concepts presented during the conference, how they will implement PCC principles learned into clinical practice, and whether the conference has changed their perceptions of PCC concepts or practice. The last question related specifically to the conference administration and format.

### *Data analysis*

For the quantitative data, the Statistical Package for Social Sciences (SPSS) version 28 software package was used and demographic data were analysed using descriptive statistics. Whereas the retrospective pre-post Likert scale data were analysed using inferential statistics; a 5% level of significance was used for all inferential statistics. For pre-post comparisons, the nonparametric Wilcoxon-signed rank test (WSR) was used as the Shapiro-Wilk test indicated that the data differed significantly from normality ($p < 0.05$). The WSR is used to test for differences between two related/dependent variables for non-normal data as a nonparametric equivalent to the parametric related-samples *t*-test (Urdan 2022) and a significant difference is indicated for $p < 0.05$.

The qualitative data were analysed thematically following an inductive approach (Braun and Clarke 2006). To improve reliability, the responses to the first four open questions were grouped together and analysed independently by a pair of authors (LM, FMA). The process followed the five stages of thematic analysis (a) familiarisation, or immersion process, (b) coding, (c) searching for themes, (d) codes were grouped into proposed themes. Only after this stage, did the two authors (LM, FMA) meet to agree on *codes* and *proposed themes*, revisiting the full dataset to confirm the likeness of codes within a theme and the distinctiveness of codes classified under different themes, (e) the final stage involved defining and naming the themes.

**Table 2.** Demographic data of participating students.

| Demographics | n (%) |
|---|---|
| **Gender** | |
| Male | 6 (5.8) |
| Female | 97 (93.3) |
| Other | 1 (1.0) |
| **Country of participation** | |
| South Africa | 18 (17.3) |
| United Kingdom | 8 (7.7) |
| United States of America | 77 (74.0) |
| South America | 1 (1.0) |
| Europe | 1 (1.0) |
| **Ethnic Group** | |
| Caucasian related groups | 71 (68.3) |
| Hispanic related groups | 16 (15.4) |
| Asian related groups | 10 (9.6) |
| Mixed or more than one ethnicity related groups | 3 (2.9) |
| African related groups | 2 (1.9) |
| Black related groups | 2 (1.9) |

*Note.* Participants self-identified their ethnic group; ethnicities were grouped together by dominant ethnicity identifiers.

## Results

A total of 104 participants were included in the analysis as one participant did not answer all of the components of the retrospective pre-post-survey. The included participants had a mean age of 21.5 years (0.07 SD) with 93.3% being female. Students were asked to self-identify ethnicity (Table 2) with the majority (68.3%) indicating they identified with Caucasian-related groups. Most of the participating students (83.7%) were from Global North regions.

**Table 3.** Retrospective pre-post scores with level of significance (WSR, $p < 0.001$).

| | Pre | | Post | | | |
|---|---|---|---|---|---|---|
| Topics | Median (IQR) | Mean (SD) | Median (IQR) | Mean (SD) | WSR Test | p-value |
| Client perspectives of PCC | 4.00 (2.00) | 3.86 (0.97) | 5.00 (1.00) | 4.52 (0.64) | −5.79 | <0.001 |
| Motivation tools addressing cultural barriers | 3.00 (1.00) | 3.35 (1.07) | 4.00 (1.00) | 4.25 (0.69) | −7.06 | <0.001 |
| Cultural humility in the audiology clinic | 4.00 (1.00) | 3.51 (1.03) | 5.00 (2.00) | 4.35 (0.67) | −6.96 | <0.001 |
| Resources for implementation of PCC | 4.00 (1.00) | 3.55 (.108) | 5.00 (1.00) | 4.44 (0.68) | −6.42 | <0.001 |
| PCC in telehealth appointments | 3.00 (2.00) | 3.18 (1.13) | 4.00 (1.00) | 4.34 (0.72) | −7.24 | <0.001 |
| Role of health literacy in the community | 3.00 (1.00) | 3.44 (1.07) | 5.00 (1.00) | 4.44 (0.75) | −7.03 | <0.001 |

*Note.* IQR = Interquartile Range; SD = standard deviation; WSR = Wilcoxon Signed Rank


**Figure 1.** Main themes and sub-themes that emerged from three open-ended questions.

### Retrospective pre-post likert scale

Across each of the six topics, an improvement in knowledge was noted between the pre-post ratings, with the rating median increasing by one for five of the six topics. Pre-post median scores improved by two for the *role of health literacy in the community* topic (Table 3). Additionally, a significant difference (WSR, $p < 0.001$) was obtained across all topics for the pre-post-ratings (Table 3).

### Open-ended responses

A total of 104 consenting participants responded to the optional open-ended question and were included in the thematic analysis. Participants' responses to each question were overarching and global in nature as such, the student responses across questions were pooled. Three main themes emerged: (a) application of PCC; (b) perspectives of PCC; and (c) barriers to PCC; with nine sub-themes (Figure 1). Examples of student responses aligning with the three main themes are included in Supplementary digital content 2.

The conference provided participants with the opportunity to observe *application of PCC* in practice, as opposed to theoretical knowledge only. The importance of prioritising PCC in clinics was a key finding and the application of active listening was identified as supporting the implementation of PCC as can be seen from the example student quotes:

> "It opened my eyes way more. I feel as though PCC can be implemented significantly through audiology."

> "Showing empathy and understanding of patients situation, thinking of most efficient solution to support them."

Participants also indicated that their *perspective towards PCC* had improved, with many mentioning that they have a better understanding of the approach and have gained an improved self-awareness of their role in PCC. For example, one participant indicated how she felt:

> "It takes a lot of self-awareness and reflection to ensure that you are treating each of your patients with respect and unbiased care."

Participants indicated that although PCC is important, the conference sessions made them aware of the *barriers towards PCC* that ranged between differences in culture to applying PCC in telehealth. This included the context of the appointment, in terms of cultural sensitivity and mode of delivery (online or in person). An example of this can be noted from the following response:

> "I find cultural competency and the audiologist's role challenging because developing cultural competence is an ongoing process."

Time was also highlighted as a potential barrier to ensuring effective PCC takes place, for example, one participant indicated:

> "Incorporating PCC in an appointment in a timely manner without sounding scripted."

### Conference satisfaction

In terms of participant satisfaction with the conference experience, participants were moderately to extremely satisfied with the conference organisation (98.1%, 102/104), content (96.2%, 100/104), participation opportunities (93.3%, 97/104), technical aspects

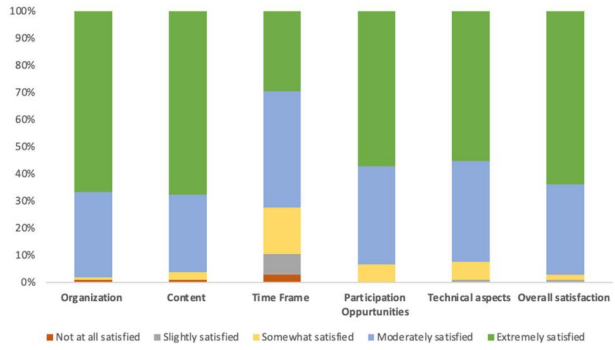


**Figure 2.** Rating satisfaction of conference experience.

(92.3%, 96/104) and overall experience (97.1%, 101/104) (Figure 2). Only one student was not satisfied with organisation and content, with 2.9% finding the time frame unsatisfactory. A number of students indicated in the open-ended question relating to the conference experience that the conference was 'too long'. However, more than half of the participants (53.8%, 56/104) did not complete this question or indicated that they were satisfied or had nothing to add, while a few mentioned that they would have appreciated "receiving handouts beforehand" or a larger variety of presenters "from across other countries".

## Discussion

For higher education institutions, technology-mediated education has become an integral part of teaching and learning as it enables the real-time delivery of learning content and services irrespective of geographical location (Okoye et al. 2021; Vahed 2022). The COVID-19 pandemic further accelerated this shift in technology adoption as educational institutions swiftly transitioned to remote learning environments to ensure educational continuity (Ali 2020). To the knowledge of the authors, this was the first multi-national audiology student-led conference that fostered students' ability to prepare and present material to an international audience on the topic of PCC. The importance of addressing PCC elements within audiology educational programs was highlighted in the student presentations. The novel student presentations included following a PCC approach in telehealth appointments, considerations of cultural barriers and health literacy as well as the application and use of available resources and support. Attending participants resonated with the key elements of PCC which included active listening, empathy, and cultural humility, amongst others.

The conference was successfully led by students providing them with the opportunity to manage the online event, create appropriate content and deliver it to participating students which encouraged peer learning and engagement. The attending students also participated in polls, a real time Slido, meeting chat and a dedicated session at the end to discuss and answer questions. Students were moderate-to-extremely satisfied (93.3%) with the interaction opportunities and reportedly enjoyed this form of engagement and peer learning. Feedback from participants highlighted the effectiveness of presenters in maintaining audience engagement through interactive elements. However, it is worth considering the suggestion from some attendees for a broader variety of presenters from different countries, this would require accomodations to be made to support the different time zones but it would enrich future conferences of a similar nature. Research suggests that such interactive engagement, led by students, not only mitigates potential boredom and isolation but also fosters a sense of connectedness and community within the learning environment (Martin and Bolliger 2018).

Program assessment is a critical aspect of evaluating the effectiveness of educational initiatives, particularly when measuring awareness of concepts. Pedagogical approaches in the science of teaching and learning have been developed that recognise the value of retrospective pre-post assessment relative to self-reported changes in knowledge, awareness, skills, confidence, attitudes or behaviours (Bhanji et al., 2012; Bremner et al., 2022). While pre-post research designs are an effective way to measure absolute values or performance such as weight or speed; when it comes to self-reported changes regarding awareness or knowledge, one simply does not know what one does not know, until they know it (Little et al. 2020). Using a retrospective pre-post assessment with open-ended questions provided a comprehensive approach to measure the awareness and use of PCC elements in clinical practice. Although pre-conference medians were high across the topics, the conference demonstrated significant improvements in PCC awareness. Results indicate that while students may already have a grasp of concepts, a multi-national student-led conference proves to be an effective peer-learning strategy. This strategy served to enhance their knowledge and skills and to bolster efforts to improve overall care to clients. Improved pre-post ratings were supported by student responses to the open-ended questions. Students also acknowledged awareness of their own behaviours to provide care that is grounded in PCC principles.

The notion of cultural humility as opposed to competency emerged as a noteworthy facet. Participating students exhibited enhanced comprehension, as evidenced by a median increase ranging between one and two in pre-post-rating scores. It is noteworthy that this heightened understanding was observed universally among students from both the global North and South, underscoring the idea that cultural differences extends beyond specific low-to-middle-income countries characterised by cultural diversity. Students valued the lived experience presentations of interviewees regarding their perspectives on cultural humility in the clinic, and persons with hearing loss shared their perspectives on PCC. An understanding of the importance of cultural and health literacy differences can help foster better communication, help clinicians deeply understand the context of their clients, help promote relationships of mutual respect, and allow mutual healthcare goals to be reached (Mosher et al. 2017). Furthermore, with the notable evolution of mode of care, PCC in telehealth is becoming increasingly important (Ferrari and Bundesen 2017). Participating students were intrigued by the topic and valued the recommendations on how to incorporate elements of PCC into telehealth consultations. A clear take-home message that gleaned from the program assessment was the willingness to embrace PCC elements and the consideration of cultural values, health literacy and variances for clinical application of PCC.

The evolving role of public health and holistic client well-being, as advocated for and documented in the literature, assumes paramount importance in the education of audiology students (Saunders et al. 2021; WHO 2022). Previous studies in the field of audiology have shown that despite person-centred communication skills being highlighted in audiology education, these skills are not consistently observed throughout clinical encounters (Muñoz et al. 2019; Tai, Barr, and Woodward-Kron 2019). By aligning learning opportunities with PCC principles such as empathy, communication, and shared decision-making; the utilisation of innovative pediological approaches could

further facilitate the cultivation of future healthcare providers who can seamlessly blend clinical expertise with a clients unique preferences and values. One such example of an alternative approach is the Community of Inquiry (CoI) Framework which emphasises the importance of cognitive presence, social presence, and teaching presence. In the context of PCC, the CoI Framework can elevate how effectively learners engage in collaborative discussions, critical thinking and reflective practices, all essential elements of PCC (Dongwe and Zulu 2022; Fiock 2020).

The conference was valued as a method of fostering collaboration and knowledge sharing among students and educators with students being generally satisfied with the content, format and approaches used. However, the timing and length of the session was problematic. This was as a result of accommodating the various time zones and providing the various participating institutions with sufficient time to present while also giving attending students opportunities to engage. Additional limitations and challenges included resource constraints, sustainability, logistics, consideration of technology infrastructure, content quality and accessibility, and funding. To address these limitations, it is crucial for future student-led multi-national initiatives in higher education to carefully plan and strategize these types of learning opportunities, seek partnerships and funding opportunities, leverage technology for inclusivity, and focus on long-term sustainability and impact beyond the event itself.

## Conclusion

The multi-national audiology student-led conference effectively showcased the power of peer-led learning in advancing students' understanding and skills related to PCC. The students not only successfully organised and managed the online event but also crafted engaging content that fostered a vibrant sense of community, promoting peer learning. The presentations underscored the significance of addressing cultural humility, health literacy, and the evolving role of audiology in comprehensive client well-being. The program assessment demonstrated significant advancements in PCC awareness among the participating students. Despite facing challenges the event emphasised the importance of fostering partnerships and maintaining a long-term focus on sustainability for international learning initiatives in higher education.

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