



Could Health Scientists Help Advance Interprofessional Collaboration? A Qualitative Study on Students' Views and Perspectives on Collaborative Practice

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Abstract

Background: Interprofessional collaboration (IPC) is a key strategy for improving health and social care. Health scientists, an emerging professional group with a system perspective on health care, could help advance collaborative practice. The aim of this study was to describe the experiences of first-year health sciences students with a newly introduced course on interprofessional and interdisciplinary collaboration, and to explore their views and perspectives on collaborative practice. **Methods:** The course was implemented at the University of Lucerne, Switzerland, in Spring 2022, and covered the current evidence and challenges of IPC, tasks and competencies of various health professionals, and real-world interprofessional projects. We conducted seven individual interviews and one focus group discussion with health sciences students who attended the course. To analyze the data, a hybrid approach of thematic analysis was applied. **Results:** The analysis resulted in three main themes: (1) key lessons from the course, (2) health sciences as a professional field, and (3) the role of health scientists in interprofessional teams. Students were open-minded and considered collaborative practice a highly relevant topic. They emphasized the multifaceted course program, the variety of different professional perspectives, and the practical experiences of the interprofessional faculty. The interviewees described health sciences as a broad and flexible field with a holistic approach that could potentially complement the expertise of specialists, and envisioned their role in facilitating the collaboration between different health professions as well as across health care sectors. **Conclusions:** Our results provide first insights into the potential roles and tasks of health scientists in interprofessional teams from the student perspective. Their broad and interdisciplinary perspective could help facilitate IPC at the individual, institutional and system levels, thereby potentially improving health care.

Keywords: Health sciences; Health scientists; Interprofessional education; Interprofessional collaboration; Collaborative practice; Qualitative research

Introduction

Interprofessional collaboration (IPC) has been identified as a key strategy that can improve health and social care delivery through effective teamwork, better skill-mix, and a more holistic, patient-centered approach [1,2]. IPC or collaborative practice “occurs when multiple health workers from different professional backgrounds provide comprehensive services by working together with patients, families, carers and communities to deliver the highest quality of care across settings” [3]. These services include both clinical tasks (i.e., direct patient care) and non-clinical task areas such as management and administration. One group of professionals that could provide non-clinical yet health-related services are health scientists. Health sciences is an emerging, interdisciplinary field in German-speaking countries that comprehensively looks at the determinants of individual and population health, courses of disease as well as the structures and processes of health systems and health care delivery [4,5].

Due to the increasing complexity of health care systems, the gap between clinical health professionals and other health care workers such as administrators or managers is widening, which could potentially harm patients, for instance through

poor communication and collaboration [6,7]. To reduce this gap and to improve care quality, establishing a shared vision, a better understanding of each other's roles, more opportunities to collaborate, and professional autonomy could help [8]. However, implementing suitable measures to facilitate IPC remains challenging due to existing structures and professional cultures [9]. Health scientists, as an emerging community of professionals with a broad view on health systems and care delivery, might be able to contribute to organizational and cultural changes that promote and advance collaborative practice.

Therefore, the University of Lucerne, Switzerland, developed and implemented a course on IPC for health sciences students. The goal of the course was for students to acknowledge the evidence, importance and challenges of IPC, to understand the roles, tasks and competencies of different health professionals, and to analyze and evaluate real-world interprofessional projects. In the lessons, relevant terminology and frameworks, different professional groups (exemplarily medicine, nursing, physiotherapy and social work), political, legal and financial issues of collaborative practice, and aspects of interdisciplinary research were covered. As a final

assessment, small groups of students had to choose a project from the national register of “good practice examples of interprofessional education and collaboration” [10], evaluate it based on pre-defined quality criteria [16], and present their findings at the end of the course. The course was taught by an interprofessional faculty, and a variety of modern, student-centered teaching methods such as flipped-classroom [11], case and panel discussions as well as online voting tools were used to engage the students in (inter-)active learning.

International literature has shown that students of medicine, nursing, pharmacy and social work generally exhibit positive attitudes towards collaborative practice [12], whereas faculty members can be facilitators or barriers, depending on their previous experience and profession [13]. Recommendations for the design, implementation, evaluation and reporting of interprofessional educational models have been described, for example, the use of theoretical frameworks and clearly stated objectives [14]. Participants of courses on IPC reported greater knowledge regarding professional relationships, a positive impact on their interprofessional development and a better understanding of problem-solving in health care teams [15,16]. A recent study concluded that graduates of such programs can have not only a positive impact on collaborative practice, which is recognized as a strength by future employers, but they also view a team culture promoting IPC as an important factor in a workplace [17].

The aim of this study was to describe the experiences of first-year health sciences students with a newly introduced course on IPC, and to explore their views and perspectives on collaborative practice.

Methods

This is an exploratory, qualitative study using a hybrid approach of thematic analysis [18]. We conducted individual and group interviews with health sciences students, and followed the “Standards for Reporting Qualitative Research” [19].

Setting

The University of Lucerne, Switzerland, offers a bachelor’s program in health sciences since fall 2021 [20]. The program includes courses on the core subjects of health sciences such as health behavior, health communication, health economics and policy, basics in clinical sciences as well as research methods and generic skills (e.g., critical thinking, project management). In order to highlight the importance of collaborative practice in today’s health care, an entire course (20 contact hours) was dedicated to interprofessional and interdisciplinary collaboration, and integrated into the health sciences undergraduate curriculum. The course was designed by an interprofessional core team for first-year students, and offered for the first time in the spring semester 2022. It was part of the mandatory curriculum and 39 students (mean age: 22.4 [SD 2.3]; 80% female) in total participated.

Sampling strategy and participants

Convenience sampling was used as a recruitment strategy. All 39 students were asked on the last day of the course if they were willing to participate in an interview or focus group. A reminder was sent by e-mail one week later. Seven students were willing to participate in the individual interviews and four students in the focus group discussion. The characteristics of the interviewees are summarized in Table 1.

	Individual interviews	Focus group
Number of participants	7	4
Age of participants		
Mean (SD)	22.4 (2.2)	23.3 (1.9)
Range	19-26	22-26
Gender of participants		
Female (%)	6 (85.7)	3 (75.0)
Male (%)	1 (14.3)	1 (25.0)
Previous experience in health care*		
Yes (%)	3 (42.9)	1 (25.0)
No (%)	4 (57.1)	3 (75.0)

*as medical assistants or physiotherapists

Table 1: Characteristics of the study participants.

Data collection

The individual interviews took place either on-site or online, the focus group on-site. All interviews were conducted in German between June and July 2022, after the course had

finished. The individual interviews lasted between 19 and 41 minutes, the focus group discussion lasted 54 minutes. All interviews were audio-taped and transcribed verbatim.

The interview guides were developed, discussed and revised within the research team with the goal of covering

aspects of the course (e.g., expectations, didactics) and relevant dimensions of IPC described in international literature (e.g., attitudes, roles and challenges). The semi-structured approach of the interviews allowed for a guided but not restricted conversation [21]. The interviews primarily focused on the experiences of the individual students with the course whereas the focus group discussion facilitated the exchange between students and focused more on their views and perspectives on collaborative practice, including their own future role. For the interview guides, see Additional file 1.

Data analysis

We followed the steps of the hybrid approach of thematic analysis by Fereday et al. [22] to increase transparency of the data analysis process, rigor and trustworthiness. This approach combines deductive coding based on a priori template of codes with data-driven inductive coding, allowing new themes to emerge.

First, the transcripts were read several times in order to become familiar with the data. Next, deductive codes based on the "Interprofessional Education for Collaborative Patient-Centered Practice" (IECPCP) framework were developed and summarized in a codebook (Additional file 2). The IECPCP framework describes factors that influence educational programs on IPC (e.g., teaching factors) and collaborative practice itself, and the linkages between these two [23]. We chose this framework as it helps not only to understand the relationship between education and practice but also includes systemic factors (e.g., policies). The reliability of the deductive codes was tested in two interviews. Next, the deductive and emerging inductive codes were applied to all interviews. Based on these codes main themes were identified, corroborated and legitimized. The whole process was iterative and interim results were discussed between the first and second author. Disagreements were discussed with the last author until a consensus was reached. The data analysis process was supported by the software MAXQDA 2022 [24].

Results

Data analysis of the individual interviews and the focus group discussion resulted in three overarching themes: (1) key lessons from the course; (2) health sciences as a professional field; and (3) the role of health scientists in interprofessional teams. Hereafter, quotes are used to exemplify the themes. For an overview of all quotes, see Additional file 3.

Key lessons from the course

This theme describes students' expectations and overall impression of the course as well as the strengths and weaknesses of the program. Most students, especially those with no experience in health care, came with an open mind and had no particular expectations of the course other than learning the terminology (e.g., the difference between interprofessional and interdisciplinary). Some participants reported specific expectations that were fulfilled by the end of the course:

"I had the expectation that one could learn suggestions for improving how individual professions work together, and I was interested which professions exist and to what extent they have to collaborate with each other. These expectations were met [...] they (the teachers) showed very well what is important in collaborating as an interprofessional team." (student, interview III)

Overall, the interviewees had the impression that the program was well-structured, versatile and multifaceted in terms of different professional perspectives. They considered the topic of IPC highly relevant for today's health care systems as well as their own future professional activities. The interviewed students also perceived collaborative practice as a potential solution to some of the impending challenges in health care such as shortages in health care professionals, increasing costs and quality aspects. According to the interviewees, one of the biggest strengths of the course was the teaching body. Particularly, the fact that most teachers were also practitioners who could provide insights into their daily activities and challenges regarding IPC:

"They really know the situation and can also tell us about cases that they have experienced. That is what I always find most interesting, this way you can imagine it afterwards. And they can also really say what is needed and what still needs to be improved." (student, interview III)

Furthermore, the students appreciated the variety of health care professionals among the course teachers, and the fact that they often appeared as (interprofessional) teams. Overall, most participants also highly appreciated interactive elements such as buzz groups, plenary case discussions or online voting tools as they helped them to participate actively. However, longer small group exercises without much input from the teachers were not seen as effective as the students wanted to benefit from the teachers' experience and knowledge. Most interviewees experienced the final formative assessment (project evaluation and presentation) as useful and interesting. They appreciated hearing insights from a real-world project with all its challenges and shortcomings.

"And I think the biggest advantage I saw in this work at the end is that you deal with a topic that you could choose yourself and that interests you. That you have dealt with it (the project), and that you can apply the knowledge that you have acquired." (student, interview V)

"We saw very well that it reflects the reality... also that you don't always get an answer immediately, that you have to look for the information somewhere else, ask again, call and so on." (student, interview I)

Some interviewees mentioned that the link between the individual lessons and the final assessment could have been closer, as for some projects not all health professions or addressed aspects of collaborative practice (e.g., financing) were relevant.

Health sciences as a professional field

This theme summarizes the students' perspectives on health sciences as a new, emerging professional field in the landscape of (interprofessional) health care. All interviewees agreed that "health sciences" is a broad, not yet clearly defined term or field as opposed to other health care related fields such

as medicine or nursing. On the one hand, some students were concerned about the variety of options after graduation and the lack of specialization, while others found this very feature exciting and saw many opportunities in it:

"For us, it's not even really clear whether we're going in the direction of management or in the direction of politics or rehabilitation or technology." (student, focus group)

"I want to be able to do a little bit everywhere, that's my goal of health sciences, that I can have a little bit of an impact everywhere and make a difference across the health care system." (student, interview VI)

Despite not yet having a clear sense of health sciences as a professional field, the interviewed students had several ideas for potential workplaces including public health institutions, hospitals, non-governmental organizations, universities or in the private sector (e.g., consulting). Regarding their potential tasks, they mentioned project management, case management, coaching, health promotion and research, among other things.

"I would also find it exciting if I could work in different areas, for example, in addiction prevention [...] but also management in health care, I would also find that very interesting. And then, above all, in leadership, to lead groups or promote cooperation, that would be very interesting [...]. Yes, I would like to participate in different areas." (student, focus group)

Some students mentioned that they learned a lot about other health professionals but that this did not necessarily help to narrow down or clarify their own profession as future health scientists. In this new study program, they felt like pioneers, and agreed that role models could help. However, most participants were convinced that health scientists have their place in the health care system and are needed in the future, e.g., to improve organizational structures and quality in health education and care delivery. They identified the holistic, interdisciplinary and systemic approach of health sciences as a strength, complementary to the expertise of specialists.

"As I said before, I think because we are not specialists, we have the bigger overview and more knowledge of different disciplines, but we can't go as in-depth as other disciplines." (student, interview VI)

"The role (of health scientists) is certainly important because we have a holistic view, in terms of health, prevention, promotion, but I also think that specialists are just as important." (student, focus group)

The role of health scientists in interprofessional teams

This theme describes potential roles and tasks of health scientists in interprofessional teams. As described above, the students considered collaborative practice as crucial in today's health care systems. Regarding their own role, most students highlighted their broad understanding of health, which could potentially help to bring together different care providers and institutions, even if health scientists most likely would not work bedside with patients:

"We do not have the competencies for direct patient care [...] but maybe more the coordination and mediation

between hospitals, general practitioners, hospice, physiotherapists and so on. Not only within one institution." (student, interview II)

Two students described this possible mediator role as follows and also added more details regarding potential tasks of health scientists in interprofessional teams:

"Yes, I could see myself as the mediator because we have an idea of different disciplines and we see a little bit behind the scenes, we know what it takes from discipline A and B. We can show that different disciplines are equally important. [...] it is important that one develops concepts to strengthen the collaboration. And that would also be a goal, that if I were to lead a team that I would put the focus on interprofessionality." (student, interview V)

"Actually, I see us as the glue that could hold together the different professions, bring out the strengths (of each profession) and maybe build teams that can work well together." (student, interview VI)

The interviewees could see their role as facilitators that help individual health care professionals to better connect and build more effective teams. They considered the course on IPC as helpful as they were able to not only learn from and about other health professionals but also some basic medical terminology relevant in care provision and collaboration. Some of the students mentioned that they did not see themselves as a permanent member of the (interprofessional) care team but rather as mandate-based consultants or responsible for several institutions across different health care sectors. Indeed, the future health scientists did not see their role in interprofessional teams only at the individual level with other professionals, but also at an overarching, institutional and possibly even political level:

"For me, it's not just the (daily) work or the activity itself, but also something structural, meaning that you flatten hierarchies and not just collaborate per se, but fundamentally sit together and see everyone as equal players." (student, focus group)

"But we have to create fundamental changes at a higher level, perhaps in politics." (student, focus group)

Discussion

Summary of the results

In general, interviewed students were open-minded regarding the course on collaborative practice and saw their expectations fulfilled. They considered IPC an important and relevant topic in today's health care, and highlighted the variety of different professional perspectives in the course program as well as the teachers' practical experience. The participants described health sciences as a broad and flexible field with a holistic approach that could potentially complement the expertise of specialists. Within interprofessional teams, they envisioned their role in facilitating the collaboration between different health professions as well as across different care sectors.

Interpretation of the results and comparison to existing literature

The course on collaborative practice for future health scientists took place early in the curriculum. Hence, it came as no surprise that the students had little prior knowledge and expectations. Even so, they already exhibited positive attitudes towards IPC. Such educational interventions in an early phase of undergraduate education can help maintaining and improving this positive attitude over time [25]. A study reporting on facilitating factors for designing and implementing interprofessional learning also highlighted the impact of early orientation regarding collaborative practice [26]. Furthermore, the authors of that study emphasized the importance of a good structure, understanding different professions as well as modern learning methods such as flipped classroom, discussions, peer learning and feedback, and the teachers' role as facilitators. Indeed, our participants reported the clear structure and inclusion of different health professionals as teachers to foster role understanding as strengths of the course. They also appreciated the interactive elements and discussions that facilitated active participation. Peer learning and self-reflection were encouraged through questions and feedback on the presentations at the end of the course. The task of evaluating existing projects was intended to reach a higher cognitive level of complexity for the students [27]. This was acknowledged by most but not all interviewed students. It might have helped to make certain concepts even more explicit at the end of the course, and to connect the content of individual lessons closer to the assessment. For the future, it might be interesting to include further professional fields such as psychology or pharmacy as important players in interprofessional teams as well as to emphasize the patient perspective more strongly. However, this was not explicitly mentioned by the students, perhaps because they are more system- than patient-oriented.

The interviewed students recognized health sciences as an emerging and broad field with a lot of potential but also some uncertainties, especially regarding their professional identity. Professional identity for health care providers has been extensively discussed in literature and includes actions, behaviors, knowledge, skills as well as values, beliefs and socialization [28]. One study found that part of the professional identity is already formed before training, and that there are differences in the initial strength of professional identity among different health professions [29]. A very strong identification with a certain profession might hinder interprofessional learning [30], and perceived threats to professional identity is one of the main cause for failure in the implementation of collaborative practice [31]. Therefore, it requires particular attention. Our interviewees mentioned that role models could help form a professional identity or at least provide some clarity regarding future tasks, activities and work places. The importance of role modelling has been described in literature, for example among medical students [32]. In our course, there were teachers who graduated from the master's or doctoral program in health sciences, and two lessons were specifically dedicated to the profession "health scientists". Yet, it appears

from the interviews that the students were still developing their professional identity. This might be normal in the first year of study as this process requires self-reflection, time and socialization, also in the work setting [33]. For that reason, the students will have a one-month internship with a specific focus on IPC in a health care institution in the third year of their studies.

A systemic review found that health professionals such as nurses and doctors themselves appear to actively contribute to IPC, mainly by bridging social and professional gaps, discussing overlaps in tasks and roles and by creating "space" and opportunities for interaction [34]. However, in times of staff shortages, time constraints and rising burnout rates among health care providers [8], other professionals (e.g., managers) may be better equipped to create environments that foster collaborative practice, especially at an institutional or system level. The number of managers and administrators has increased disproportionately compared to clinicians in the past 30 years [7]. Unfortunately, instead of better collaboration, the gap between these two professional groups has widened, mainly due to different prioritization [35]. Health scientists may have the educational background to bridge that gap and to promote interprofessional as well as transprofessional collaboration, in which professional boundaries slowly disappear and non-professional health workers in communities as well as policy makers are included [36].

Indeed, regarding their future role as health scientists in interprofessional teams, our participants highlighted their broad understanding of health, the health care system, and their acquired knowledge of various professions and disciplines. With that expertise and open-mindedness, they might be able to take on a mediating role not only among clinicians but also between clinical and non-clinical health professionals such as hospital managers and administrators. At this individual level one could imagine joint discussion rounds in which health scientists facilitate the conversation and foster mutual role understanding and problem-solving. Or they could take on the role of case managers in order to relieve administrative burden from clinicians. Furthermore, health scientists could help implement the structures, processes and culture needed to promote collaborative practice at the institutional and system level. As mentioned by one of the interviewees, this could also be done in form of organizational or policy consulting. Based on the views and perspectives of our study participants and considering current challenges in health care, we came up with a hypothetical model of potential tasks and roles of health scientists in the field of IPC (Figure 1). Certainly, many of these activities require strong leadership, good communication and change management skills, which need to be addressed in the education and future curriculum development. Furthermore, the openness of other health professionals and patients to advance this "change of culture" is needed.

Some of our results were similar to a study conducted in Germany and published in *BMC Medical Education* by Mahler et al. [37] on students' perceptions of a bachelor's program on interprofessional health care. Their participants reported a better understanding of different professions and perspective, and felt more comfortable approaching other health professions

in daily practice. Similarly, our students felt open-minded not only towards the topic itself but also towards other health professionals. In our case, the students have only had one course on collaborative practice but already identified themselves strongly with the topic of IPC and exhibited a positive attitude towards it. Furthermore, they saw a lot of

innovative and novel potential for their own future role, mainly as in mediating between health professionals. We consider this as quite remarkable, given they were first-year students. It will be interesting to see how their attitude and ideas develop over the course of their studies.

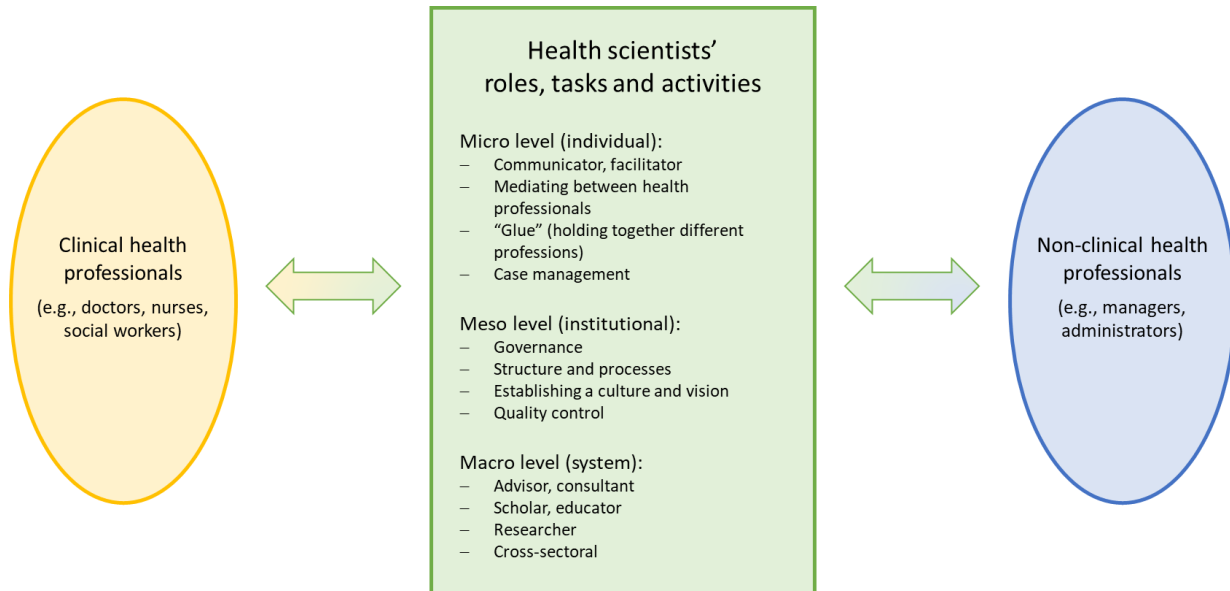


Figure 1: Potential roles and tasks of health scientists in interprofessional collaboration.

Limitations

The study has several limitations. Only one person (SG) conducted the coding, and two authors were involved in the course planning and teaching respectively (SG, SNJ). To ensure scientific rigor and to reduce researcher bias nonetheless, the strict steps of the hybrid approach of thematic analysis were followed, and all interim results were discussed with at least one other author who was not directly involved in the course. External validity might be limited as the study is quite context-specific, and the sample size rather small. Yet, it could provide valuable insights into an innovative course format and a new professional field. We asked all students to participate in the interviews but cannot completely exclude participation bias despite ensuring data confidentiality and a safe environment for the interviews. It is also important to note that we only focused on the students' experiences with the course which corresponds to the first level of evaluation ("reaction") according to Kirkpatrick's model [38].

Conclusions

First-year health sciences students who completed a newly introduced course on IPC perceived collaborative practice as an important topic in today's health care, and appreciated the real-world insights offered by the interprofessional faculty. With their broad and interdisciplinary perspective on health systems, they viewed their own potential

role as mediating between health professionals and across health care settings. In the future, health scientists could contribute to better health care by facilitating and advancing collaborative practice at the individual, institutional and system levels. However, more data and studies are needed to corroborate these initial findings.

Ethics approval and consent to participate

The study was approved by the responsible local ethics committee (EKNZ: Req-2022-00498). All participants received written and oral information on the project. Each participant gave written informed consent to participate in the interviews, and agreed to being audio-taped. Participation was voluntary and confidential. The interview data were treated confidentially and stored securely within the research group. All experiments were performed in accordance with relevant guidelines and regulations.

Consent for publication

Not applicable.

Availability of data and materials

The data are not publicly available. Data might be available upon reasonable request to the first author (SG).

Competing interests

The authors declare that they have no competing interests

Funding

No funding was provided for this project.

Authors' contributions

SG and SNJ conceptualized and designed the study. SG, AW and SNJ collected, analyzed and interpreted the data. SG drafted the work, and AW, KDT, CS and SNJ substantively revised it. All authors read and approved the final manuscript.

Acknowledgements

Not applicable.

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SG is a medical doctor by background and holds a Ph.D. in Health Sciences. He is a researcher, lecturer, and primarily responsible for the medical curriculum at the University of Lucerne. AW has a background in sociology and holds a Ph.D. in Health Sciences. She is a researcher at the Swiss Paraplegic Research Center. KDT has a background in industrial engineering and holds an MBA and a MA and Ph.D. in Health Sciences. She is a researcher and lecturer at the University of Lucerne. CS is a medical doctor by background and holds a Master of Medical Education. He is the head of the study center at the University of Lucerne. SNJ is a medical doctor by background and holds a Master in Public Health. He is a primary care physician and professor at the University of Zurich. All authors were familiar with the health sciences undergraduate curriculum and the topic of collaborative practice.

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Received date: August 25, 2023; **Accepted date:** November 27, 2023; **Published date:** November 30, 2023

Citation: Gysin S, Wagner A, Dawson-Townsend K, Schirlo C, Neuner-Jehle S (2023) Could Health Scientists Help Advance Interprofessional Collaboration? A Qualitative Study on Students' Views and Perspectives on Collaborative Practice. *J Health Sci Educ* 7(3): 239.

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Additional file 1: Interview guides

Individual interviews

- 1) Which expectations did you have regarding the course? Were they fulfilled or not?
- 2) What was your overall impression of the course?
- 3) What were the strengths of the course?
- 4) What could be improved?
- 5) Do you have any specific comments on the course objectives, the structure or content of the course?
- 6) Do you have any specific comments on the teachers or the didactical elements used?
- 7) How did you experience the group work and final presentation?
- 8) What expectations do you have of the upcoming internship?
- 9) Do you have any other remarks or comments?

Focus group

- 1) What is your attitude towards interprofessional collaboration?
- 2) Has your attitude changed because of the course?
 - 3) Where and how do you see your role(s), tasks and responsibilities as a health scientist in the interprofessional team?
 - 4) Has your understanding of your own role changed as a result of the course?
 - 5) Which competencies do you consider particularly important for interprofessional collaboration?
 - 6) What difficulties do you expect in collaborative practice and what would be possible solutions to overcome these difficulties?
 - 7) What opportunities do you see in interprofessional collaboration?
 - 8) How do you rate the importance of interprofessional collaboration for future practice and for the health sciences profession?
 - 9) Do you have any other remarks or comments?

Additional File 2: Codebook

Based on the “*Interprofessional Education for Collaborative Patient-Centered Practice*” (IECPCP) framework

<i>Code category 1</i>	
Label	Learner
Definition	Learners' competencies and outcomes
Codes (including description and examples)	Knowledge (e.g. group functioning, roles and responsibilities) Skills and behavior (e.g. communication, reflective practice, leadership) Attitudes (e.g. respect, trust, openness)
<i>Code category 2</i>	
Label	Educator
Definition	Educators / mentors (role models)
Codes (including description and examples)	Professional beliefs and attitudes (towards collaborative practice) Enablers or barriers (to learners' opportunities to gain collaborative competencies)
<i>Code category 3</i>	
Label	Teaching factors (micro level)
Definition	Learning context and faculty
Codes (including description and examples)	Learning context (how, who, what, where, when) Faculty development (i.e. faculty's needs to learn how to facilitate IPE and how to recognize one's own professional beliefs and attitudes)
<i>Code category 4</i>	
Label	Institutional factors (meso level)
Definition	Higher education academic institution
Codes (including description and examples)	Leadership and resources (champions) Administrative processes (e.g. methods for implementation, logistics)
<i>Code category 5</i>	
Label	Patient
Definition	At the center of collaborative practice; active members of the team and care recipients
Codes (including description and examples)	Clinical outcomes Quality of care Satisfaction
<i>Code category 6</i>	
Label	Professionals
Definition	Health care providers
Codes (including description and examples)	Job satisfaction Well-being (mental health) Task complexity
<i>Code category 7</i>	
Label	Interactional processes (micro level)
Definition	Sharing goals and sense of belonging
Codes (including description and examples)	Common vision
	Mutual trust
	Diverse interests
	Asymmetry of power
	Willingness to work together
	Familiarity with each other's models, roles and responsibilities
<i>Code category 8</i>	
Label	Organizational factors (meso level)
Definition	Governance and formalization
Codes (including description and	Role of leadership (central, local, expert, collective) Structuring clinical care (exchange, protocols, procedures)

examples)	Efficiency
	Cost effectiveness
	Responsiveness
	Innovation system
Code category 9	
Label	Systemic factors (macro)
Definition	Change management strategies that affect systemic changes
Codes (including description and examples)	Government policies (education, health and social services) Social and cultural values Educational system (accreditation, structures) Professional system (regulatory bodies, liability)
Code category 10	
Label	Research
Definition	Research to inform and evaluate
Codes (including description and examples)	Understand the process (related to teaching and practicing collaboratively) Measure outcomes (with rigorous methods and transparency) Disseminate findings

