

# Following Interprofessional Education: Health Education Students' Experience in a Primary Interprofessional Care Setting

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**Background:** There is an accelerating need for interprofessional education (IPE) in the Public Health field, as healthcare providers become diverse and multi-disciplinary. Public Health students with health education concentration at Qatar University are required to join training sessions in IPE before the start of their field experience, where students are placed in a variety of community-based and clinical settings including, but not limited to, primary healthcare.

**Purpose:** The goal of this qualitative research study is to understand health education students' experience in interprofessional care during their field experience in a primary healthcare setting and to highlight the successes and challenges.

**Patients and Methods:** Participants were third-year health education students (N = 22) enrolled in the Public Health program at Qatar University who obtained their experiential learning in three different primary health care centers. Students' weekly reports reflecting on primary interprofessional care were included in the analysis for the purpose of this study. Following constant comparative techniques, thematic analysis was conducted on health education students' reports.

**Results:** Interprofessional care was witnessed and practiced by students in teamwork and collaboration for the benefit of the patient, communication among health care professionals and referral process and patient flow. Health education students understood their role in interprofessional care in the fields of behavior change, and patient education and empowerment. However, professionals and patients were not recognizing health educators' role and were not familiar with their contributions to interprofessional care in primary healthcare. Students suggested delivering interprofessional education for health care providers to enhance collaborative teamwork and promote knowledge about the evolving health education field among healthcare providers in Qatar. In addition, they recommended orienting their training supervisors about the goal of IPE-based practice in a primary healthcare setting.

**Conclusion:** Interprofessional care was observed and practiced by health education students through collaborative teamwork, communication among health care professionals and management of patient flow. However, they faced challenges during their practice-based IPE. The findings can be tailored towards planning for interprofessional education workshops to boost collaboration progress among health care providers including health educators and supporting professionals interested to implement practice-based IPE in their placement curriculums.

**Keywords:** interprofessional collaboration, communication, health education, public health, primary care, field experience

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## Introduction

Interprofessional collaboration is a growing trend in the healthcare field that calls for close coordination among healthcare professionals from diverse background and

cultures and across various settings to provide patient-centered care for today's complex healthcare challenges.<sup>1,2</sup> Multiple studies have shown that interprofessional collaboration enhances healthcare quality and that it has the potential to improve health outcomes.<sup>3</sup> In a study of primary healthcare (PHC) settings, interprofessional collaboration increased efficiency as measured by better healthcare access and utilization, smoother patient flow, and shorter patient waiting times.<sup>4</sup> Moreover, it results in a higher level of patient satisfaction and better acceptance of care in PHC settings.<sup>5</sup>

However, previous research has shed light on how interprofessional collaboration among various healthcare professionals and disciplines can face multiple barriers in a real-life setting and practice-based interprofessional education.<sup>6,7</sup> Research examining professional stereotypes in an interprofessional education simulation experience reported that even though interprofessionalism might seem to be an intuitive approach, it is instead a taught and learned set of skills that may not come naturally to many professionals in the healthcare field.<sup>8</sup> A study assessing interprofessional learning during a student placement explained that due to the very diverse roles many health professionals assume while working in a primary healthcare setting, a lack of understanding of the roles of other professionals working in a team may create a deeper disconnection when professionals try to work collaboratively.<sup>9</sup> In addition, hierarchy and resistance by healthcare professionals represented another barrier to interprofessional collaboration.<sup>7</sup>

On the other hand, research conducted to assess interprofessional learning among health care students during their placement found that outcomes of interprofessional teamwork were not only limited to benefits to patients and healthcare, but also to students.<sup>10</sup> According to this study, healthcare students would experience development through learning and growth including professional, social, and personal learning in which they learn about: their roles including the assessment, and treatment; the roles and scopes of the other professions; building professional relationships; and the importance of teamwork in interprofessional practice.

The role of health education in primary healthcare had been well emphasized by the World Health Organization (WHO).<sup>11</sup> The WHO recognized the importance of individual behavior as a determinant of health, and intended to equip health educators with a variety of educational and

communication skills that consider the social aspect of health and disease combined with the principles of self-management. In a primary healthcare setting, health educators are advised to establish good relationships, get away from assumptions, communicate clearly, and promote trust with patients to help them achieve their goals. Actually, the practice of primary health care services cannot be effective without proper implementation of health education, as documented in the literature.<sup>12,13</sup> However, restoration of health education in primary health care still represents a challenge for the modern practice, and is a necessary priority in the preparation of health professionals.<sup>14</sup>

As a result of the evolving needs and demands of the healthcare field, and as healthcare teams become more diverse and multidisciplinary, demand for interprofessional education (IPE) has been growing in educational settings that offer programs in the field of public health. In fact, one of the accreditation criteria for schools of public health is providing an interdisciplinary learning environment.<sup>15</sup> Additionally, The Interprofessional Education Collaborative (IPEC),<sup>16</sup> representing 21 national health professions associations, has identified four core competencies:

Competency 1: Values/Ethics for Interprofessional Practice: Work with individuals of other professions to maintain a climate of mutual respect and shared values.

Competency 2: Roles/responsibilities Use the knowledge of one's own role and those of other professions to appropriately assess and address the health care needs of patients and to promote and advance the health of populations

Competency 3: Interprofessional communication: Communicate with patients, families, communities, and professionals in health and other fields in a responsive and responsible manner that supports a team approach to the promotion and maintenance of health and the prevention and treatment of disease

Competency 4: Teams and teamwork: Apply relationship-building values and the principles of team dynamics to perform effectively in different team roles to plan, deliver and evaluate patient population-centered care and population health programs and policies that are safe, timely, efficient, effective, and equitable.

A common challenge facing research on IPE, reported by other studies, is the absence of a clear theory or framework

related specifically to IPE.<sup>17</sup> Therefore, we utilized the four competencies to guide our work in this study.

The Bachelor of Science in Public Health at Qatar University is the only program of its kind in the country. The program has two concentrations: health education and health management. In both program concentrations students are required to attend IPE trainings before beginning their experiential learning courses, during which they are placed in a variety of community-based and health care settings, including, but not limited to, primary healthcare clinics. Health education students at Qatar University attend several interprofessional education and training sessions with students from different health profession programs and are exposed to cases involving different health problems, such as diabetes, tobacco cessation, and cardiovascular diseases.<sup>18</sup> This approach aligns with multiple recommendations from the field suggesting that education in interprofessional collaboration should occur early in the experiential learning program and specifically during undergraduate education when positive ideas and attitudes can be easily shaped and instilled in healthcare professionals.<sup>19,20</sup>

A few studies explored interprofessional collaboration among healthcare providers in the Middle East. Qatar has a unique culture with huge diversity among healthcare providers, and previous research has proven that national culture plays a role in shaping health workforce collaboration.<sup>21</sup> A recent study in Qatar found that healthcare providers in primary healthcare generally expressed a positive attitude and readiness towards interprofessional collaboration.<sup>22</sup> The study also reported that healthcare providers with previous interprofessional collaboration or interprofessional education experiences would reveal more positive attitudes toward interprofessional collaboration compared to those without previous experiences. However, the public health field, students and professionals, remain under-represented in such IPE studies.<sup>17,23</sup>

According to Soemantri et al,<sup>24</sup> more efforts are needed to ensure that healthcare students understand their roles and interiorize the collaborative values and practices of other health professions. Our study is the first of its kind to explore the role of health educators in providing interprofessional care, which remains relatively a new area to explore and in need of further research worldwide and specifically in the Middle East. The purpose of this study is to understand health education students' experience in a primary interprofessional care setting during their field

experience and to gain an in-depth understanding of the successes and challenges of that experience.

## Materials and Methods

### Context

In the Gulf Cooperation Council (GCC) region, including in Qatar, there has been a steady increase in outpatient visits related to noncommunicable diseases.<sup>25</sup> As a matter of fact, Qatar's leading cause of death is non-communicable diseases, which are well known to place a significant burden on the healthcare system, especially primary healthcare.<sup>26</sup>

The healthcare system in Qatar has witnessed rapid and progressive changes over the past 10 years. In 2012, the Primary Health Care Corporation (PHCC) was declared as an independent corporation. Currently there are 28 health centers serving the population of Qatar based on their geographical distribution in which the PHCC system delivers comprehensive and diverse range of services through a patient-centered approach.<sup>27</sup> The recent PHCC strategic plan is directed towards equipping the centers with interprofessional teams who deliver integrated family medicine model of healthcare.<sup>28</sup>

Participants in our study were third-year health education students (N=22) enrolled in the Public Health program at Qatar University. Health education students would take a variety of courses including but not limited to public health ethics, epidemiology, biostatistics, health education methods, needs assessment in health education and promotion, health communication, planning and evaluation of health education programs, and experiential learning courses. Participants in this study were enrolled in the Field Experience course, a requirement for graduation from the public health program. The students obtained their experiential learning training in three different primary health care centers during the second semester of the third academic year.

The Field Experience course allowed students to observe healthcare providers on all aspects of their work in health education and health management, apply theories, ethics, and principles of the public health field in a practical setting. Students started their rotation at the centers with the reception and triage section, and then they visited the different clinics including antenatal, well baby, well women, non-communicable, communicable, tobacco cessation, dietetics, life style/wellness, and support (mental health and social work) clinics. In some

PHCC clinics, students were able to actively collaborate with other healthcare providers in handling interprofessional care, such as patient assessment, application of behavior change theories, patient empowerment and follow up, while in others they were just observers of interprofessional practices.

During 4 months of training, students were expected to submit a weekly report to the field experience instructor and a teaching assistant, in which they reflected on their practical experience at the training site. In these reports, students reviewed their activities and observations and described the nature of the work they had been involved in and how it was related to their theoretical background. In addition, they reflected on challenges they faced in their training and ended the report with recommendations on how to improve their experience. [See [Additional file 1](#) for the report template]. Students were asked to share if they were actively involved in any task during their training, and/or list what they observed in the training site. Thus, while reflecting specifically on interprofessional care, students reported observing the different aspects of interprofessional care among HC providers in the training site and how they were actively involved and collaborated with other HC providers in some clinics.

In total 330 reports were submitted during the field experience course, and only reports reflecting on interprofessional care were included in the analysis for the purpose of this study. In these reports, students addressed various aspects of interprofessional care focusing on the collaboration among healthcare providers for the benefit of the patients, interprofessional communication and conflict management, and patient referral process. The authors read the reports until data saturation was reached (N=22). Reports unrelated to interprofessional care and reports reflecting on training experiences in settings other than primary care were excluded from the study. The students were fully aware that these reports would be used for research purposes. Consent forms highlighting the purpose of the study were distributed to students, and those students interested in participating signed the form. The participants' consent also included publication of anonymized responses. The study was approved by the Qatar University Institutional Review Board (Research Ethics Approval No. QU-IRB 1160-EA19).

## Qualitative Analysis

Thematic analysis was conducted on health education students' reports, in which students reflected on their

experiences related to interprofessional care in a primary health care setting. The analysis was conducted after students finished their training. In qualitative research, the researcher is the instrument of data collection and analysis.<sup>29</sup> Therefore, during the analysis process, we explicitly identified our biases, expectations, and reactions.

Following constant comparative techniques, data were analyzed manually in which pieces of data were compared for similarities and differences.<sup>30</sup> Comparisons were performed to distinguish one theme from another and to recognize the dimensions of each theme. Next, a coherent textual description was added under each theme to explain the students' perception of their role in interprofessional care at PHCC. The first and last author analyzed the first report together, then they analyzed the other reports independently to help in the validation process. After reading the reports and acknowledging the common themes separately, the two authors met to validate the themes and reach agreement.

## Results

Major themes that arose from the analysis helped in the comprehension of students' perception of interprofessional care represented in three aspects: teamwork and collaboration for the benefit of the patient, communication among health care providers, and management of the patient flow and the referral process. Other themes represented the success of this experience including understanding their role as health educators in interprofessional care, the challenges they faced during their training and their recommendations to promote the health education field and interprofessional collaboration. Professionals with whom the students interacted and who were mentioned in the students' reports included center managers, physicians, nurses, health educators, dietitians/nutritionists, mental health professionals, social workers, researchers, radiologists, lab technicians, pharmacists, and receptionists.

### Collaborative Teamwork in Primary Interprofessional Care

The participants in our study explained how interprofessional collaboration is a vital tool that ensures the integrity of the primary health care system. Different specialists in primary health care work together to provide quality services, satisfy the needs of the patients, and improve population health. In the majority of students' reports, teamwork and collaboration was the dominant theme

when discussing interprofessional care. Students mentioned how health care providers from different disciplines believed in working cooperatively for the benefit of the patient. Nurses measured vital signs and completed patient assessments, physicians examined patients and provided medications to treat and cure, and health educators strove to understand patients' risk factors and underlying health risks to prevent disease and promote health.

The support staff was responsible for the patient registration and general information collection about patients. Nursing staff worked with patients before they visited the doctors and conducted necessary tests and procedures in order to provide the doctors with information that helped them better examine the patients. Physicians examined patients, explored medical histories and tests, then implemented necessary strategies that should help improve the health conditions of the patients. Health educators provided patients with useful information concerning improving their health conditions and preventing diseases. [Report 10]

Students reflected on how they practiced interprofessional collaboration to address the needs of patients in different clinics. For example, in the antenatal clinic, students collaborated with a group of healthcare providers including a family physician, nurse, mother-child counselor, and nutritionist to conduct comprehensive assessment for women attending the clinic. The process began with checks on vital indicators of patient's health such as weight, height and temperature performed by the nurse. A comprehensive review of the patient's medical history, history of surgical procedures, the menstrual cycle information, allergy, and family history were also captured in the patient database. One of the students elaborated on their task at this clinic:

Successful completion of the assessment is the responsibility of all the healthcare providers in the clinic. It helps in preparing comprehensive information about the patient so that the counselor, nutritionist and me can precisely act on giving proper prenatal care on aspects such as nutrition and diet, anemia control, and the need for exercise physical activity during pregnancy. Any complications facing the patient during pregnancy are also addressed at this stage. [Report 15]

Another student mentioned how she collaborated with the physician, and followed up with the radiologist and pharmacist to finalize a comprehensive assessment for a patient:

At triage, I helped the physician in charge in collecting the X-ray reports from the Radiology Department as well as communicating with the pharmacy for unavailable medications, and logging the information into Cerner. [Report 7]

In addition to addressing collaboration among professionals, the students emphasized the active participation of the patient in their reports. The students explained how patients should be educated and involved in the decision-making process regarding their treatment. They also noted the importance of reaching beyond professional boundaries and hierarchies with mutual respect and role modeling in interprofessional care.

I observed a physician who was working with a diabetes educator to empower patients and make them aware of their nutrition intake, how to use an insulin injector, how to take their medication and at what time. He mentioned that we should act courteously when we work with other professionals: respect them, understand their role, and collaborate with them in a way that will help achieve the desired goal. [Report 6]

## Effective Communication Among Health Care Providers

The health education students recognized that effective communication among health care providers was critical to ensuring the delivery of safe and efficient care in the centers. Approximately half of the students reflected on the communication process among professionals. A few students perceived the communication process positively, as some students described their experience in a diabetes clinic.

When we have a patient with diabetes, the nurse will measure the vital signs and sugar level and communicate the readings to the physician. Then, the physician will sit with the patient and may prescribe medication. The doctor will communicate this history to the diabetes educator who will educate the patient about healthy lifestyle and will communicate with the nutritionist to help the patient follow healthy eating behaviors. [Report 21]

Students mentioned that they communicated with different healthcare providers during their training for the benefit of the patients. Effective communication among students and healthcare providers was reported in various clinics in the training site. A student explained how she was involved in effective communication in the well-baby clinic where

they also provided vaccination for new babies to protect them and save their lives from life-threatening diseases. In this clinic, the nurse will assess the baby before vaccination, she will take the baby's head circumference, weight, height, temperature, allergy, and calculate appropriate weight for age percentile. After that, all information related to the baby's nutritional intake is obtained from the mother, such as: feeding type (whether it's exclusive breastfeeding, formula, or mixed), any food allergy, loss of appetite, or if there is difficulty in chewing or swallowing. Then the doctor will check the baby's vision, hearing, body posture, and all systems' functions, and the final step is when the nurse gives the baby the required vaccine. The student elaborated:

Next, the physician and I communicated to consult the mother about how she can continue breast feeding her baby if she is working, and how to start introducing the bottle properly to avoid any GI problems for the baby and be able to know which type of food that might cause allergy. [Report 1]

Students reflected on how the communication process among professionals might affect patients. When a disrespectful style of communication is utilized, patients become dissatisfied with the services provided by the center and might lose trust in the physician and the other professionals involved. The majority of the students reported that the process of communication among health-care professionals should be well planned and organized in order to exchange information effectively and offer the best treatment, knowledge, and advice to patients to help them manage their health concerns.

The health education students emphasized the importance of healthcare professionals respecting and listening to one another's input regarding patient cases. Some students' experience demonstrated a clear miscommunication between healthcare professionals in which factors such as hierarchy and professionalism might have played a role.

I was in the triage room when a physician came and asked the nurse about one of the patients, and the nurse was talking very politely to the physician and explaining something the physician was not satisfied about. The nurse, while talking, said to the physician 'physician, listen', and the physician got very [upset] in front of all the patients; she said to the nurse: 'Do not tell me to listen; you are the one who has to listen to me here. [Report 13]

## Managing Patient Flow and Referral Process in the Health Center

Patients seeking primary health care services could call the PHCC call center to schedule appointments; however, the majority of visits tended to be for walk-in patients who did not have prescheduled appointments, resulting in long wait times for patients. Consequently, the receptionists and nurses in the triage areas were overwhelmed, and patients complained. In their reports, students mentioned that controlling patient flow and providing clear guidelines for health care providers and patients about this flow were important in interprofessional care. They explained that organizing the referral process among the different providers was the responsibility of all professionals, including health educators in the center in order to provide quality services. One student elaborated on this:

One must pay attention to patient flow and the ways in which managers and professionals can achieve the proper level of intervention and deliver high-quality patient care in accordance with clinical need since these measures are essential steps towards the improvement of patient safety. [Report 4]

Students observed the patient flow at the centers. The greeting staff, whose primary location was the front desk, would direct patients after they arrived at the center. Identifying the level of severity of a patient's condition was one of the greeting staff's main duties. Patients with severe symptoms were directed either to the treatment/observation room or to the hospital emergency department, depending on their condition. The rest of the patients, whose conditions were identified as less severe during the initial assessment, were directed to the triage waiting area and given a Q-Matic ticket. They then waited for the triage nurse or a health educator, who assessed them and assisted them in completing the necessary documents.

Management of patient flow will be organized in accordance with certain categories, and the decision to categorize will be made based on the nurse triage assessment. Notably, these categories will be as follows: emergency, priority, and routine patients. Then, this also shapes the referral process to the nurse, physician, nutritionist, counselor, and health educator. [Report 16]

Students managed the patient flow and referral process in different clinics. For example, nurses in the triage clinics categorized patients into 3 categories: patients who need immediate treatment (emergent cases); patients to be seen

within 30–90 minutes (prioritized cases); patients to be seen within a working day (routine cases). A student explained how she collaborated with the nurse to manage this referral process:

I was allowed to participate in different activities in the triage clinic. During the first week of my practice, my duties were to enter patients' information in the system; to follow the process of patient categorization; communicate with patients and explain the principles of categorization to them. Further, schedule the patients and send them to the triage doctor in emergent or prioritized cases, or provide them with information about the schedule of regular doctors. [Report 11]

## Understand Health Educators' Role Within Interprofessional Care

Students mentioned that this training helped them understand their responsibilities as health educators which included and not limited to patient assessment, patient education and behavior change, disease prevention and health promotion, patient empowerment in chronic disease self-management, and follow up and evaluation. They emphasized that these tasks can only be accomplished by collaborative teamwork, effective communication among healthcare providers, and effective management of the patient flow and referral process. They reported that after receiving the patient's medical history from the doctor and readings/results from the nurse and lab technician, health educators in different clinics conducted lifestyle assessments.

The Patient Assessment Form that needs to be filled out by the health educator and sometimes by the dietician is important. They will ask every patient about their exercise habits, smoking practices, allergies, family history of diseases, medication intake, previous surgeries, food preferences, daily eating habits, height, and weight. This form allows the educator to form a clear idea about the patient's lifestyle and behaviors and thus to be able to prevent disease or promote health as needed. [Report 3]

Students also observed that health educators played a fundamental role in the noncommunicable diseases (NCD) clinic at the PHCC. They reported that a health educator joined the physicians while they examined patients at the NCD clinic. Both physicians and health educators showed effective communication skills while

building trusting relationships with patients. One student explained this as follows:

They completed each other, the physician and the educator. The health educator provided useful information about healthy lifestyle and necessary nutrition for patients with diabetes or hypertension. She performed her duties professionally, and there was no doubt that patients trusted her and followed her advice. [Report 8]

In addition, health education students reported how actively they were involved in the interprofessional practice in different clinics, especially the NCD clinics including diabetes and cancer. These activities included patient psycho-social assessment, which complement the vital signs assessment done by the nurse in the triage clinic and the clinical assessment done by the physician later, applying behavior change theories at the Dietitian's Clinic, following up with other professionals such as physicians and pharmacists regarding patients results and medications, logging patients information into system and referring them to the next healthcare provider and/ or consultant depending on the physician's recommendations. One student explained:

In the Bowel Cancer Clinic, patients were reluctant to screen for cancer due to fear and stigma. The center's policies dictate they cannot be forced to undergo early diagnosis. The nurses are busy and cannot spend time convincing patients. So, I followed behavior change theories such as the health belief and the social cognitive models for convincement through addressing the psycho-social factors, which would enhance the utilization of this important prevention program. [Report 12]

## Professionals and Patients' Not Recognizing the Role of Health Educators

A major challenge reported by the students was that although they understood their role and the roles of others in interprofessional care, they faced the challenge of professionals and patients still not recognizing the role of health educators. Although there were nurse educators at the centers who were providing the education and counseling sessions, the majority of students reported that professionals talked to them about being unfamiliar with the health education field and the role of health educators. Students also felt that patient culture and the culture of the health care system were not accepting of the health

educator's role in interprofessional care. As some students explained,

I understand the barriers that might prevent healthcare providers from collaborating with each other and not accepting us at the site. Some of these barriers could be a misunderstanding of the role of other professions, ego, thinking you can do the job without needing others' help, or not being well trained regarding how to communicate with other professionals. [Report 20]

Students also reported that although the physicians did introduce them to the patients and explain who they are and why they are joining them in the clinic, some patients did not understand their role and were not comfortable seeing them at the site. One of the health education students in a cardiovascular clinic was taking notes while the physician was examining the patient and asking questions about his medical history. When the patient noticed the student writing in her book, the patient requested the student to leave the room.

Many patients did not consent to our presence or role, especially in the screening and support clinics, which reduced the quantity of information we could gain from the sessions due to confidentiality. They only trusted the physician to be questioning them. This was really annoying, and I ended up leaving the office many times because the patients did not accept me as a part of the health care team. [Report 18]

## A Call for Interprofessional Education for Healthcare Providers

One of the main recommendations suggested by students to enhance the different aspects of interprofessional care and improve their training experience was to encourage interprofessional education (IPE) and training for health care providers. They recommended interprofessional training based on appropriate models that would support the development of collaboration among the diverse population of professionals working in primary health care.

They also pointed to the relevance of IPE in promoting behavior changes among health professionals and in responding to the pressing needs of complex and interdependent healthcare systems and populations. As one student reported, "It is really crucial to develop sustainable models for IPE implementation that can be mainstreamed into health professions' curricula and clinical practice." Another student explained that

It is essential for providers of health care services to build trusting relationships with patients, to communicate effectively in order to understand their needs, and to meet patients' needs. Constant learning is another important issue for healthcare workers.

## A Need to Enhance Awareness of the Health Education Field and Practice-Based IPE

Almost all the students emphasized the need to invest effort into working closely with the health sector and raising awareness of the contributions of the health education field as an interdisciplinary field and the role of health educators. One student suggested the following:

The department of public health at the ministry together with our department at Qatar University should participate in implementing public health awareness campaigns. These campaigns should introduce the field and the role of health educators in interprofessional care in a primary health care setting specifically and in other nonclinical settings. [Report 6]

A few students also suggested providing orientation sessions for professionals working in primary health care settings, especially those who supervise them, to promote the health education field, the role of health educators in a PHC setting and to better plan for their experiential learning. According to a student: "This would help supervisors understand the goals and learning outcomes of our training in a primary interprofessional care setting."

## Discussion

In this study, we tried to understand how health education students perceived their experience, their role as health educators, and the roles of other healthcare professionals in providing primary interprofessional care. We also explored the challenges they faced during training, and their recommendations to improving interprofessional collaboration in PHC settings where health education is a new and emerging field.

Health education students in their weekly reports reflected on how the provision of primary health care requires a collaborative teamwork by a variety of professionals to address patients' needs. It is a system that encompasses a wide spectrum of services, and it is composed of different health care departments, such as triage clinics, noncommunicable and communicable disease

clinics, well-baby clinics, well-woman clinics and antenatal clinics. These clinics aim to provide health services to promote patients' health and treat patients.<sup>31</sup> In such settings, interprofessional collaboration is one of the main tools that ensures the integrity of the primary health care system in which different specialists work together to meet the needs of patients by providing high-quality services.<sup>32</sup>

The increasing burden of chronic illnesses on healthcare systems and the complex needs of patients with multiple chronic conditions have shifted the focus in primary healthcare from a single practitioner model to a team-based approach based on a patient-centered model.<sup>33</sup> This model, as a result, requires intensive collaboration among different members of the healthcare team, specifically between physicians and nurses, and this collaboration is key to achieving optimal patient health care outcomes. However, multiple studies have reported that collaboration among different professionals remains undervalued with the exception of nurses,<sup>34</sup> who were found to have a more positive attitude towards interprofessional collaboration compared with general practitioners.<sup>35,36</sup> In regards to public health professionals, research found that students still need to improve their collaborative attitudes and practices towards/ with other health professions.<sup>24</sup>

Previous research has reported that professionals' beliefs and values are fundamental factors in shaping collaboration among professionals.<sup>37</sup> Fundamental differences in attitudes towards collaboration exist not only among members of different professional backgrounds with some of them might have obtained medical education with less emphasis on interprofessional collaboration,<sup>38</sup> but also among members of a healthcare team who are from different cultures.<sup>21,39</sup> The healthcare system in Qatar is composed of highly culturally and linguistically diverse professionals. While we were unable to find any studies examining the cultural diversity of healthcare professionals and its effects on interprofessional collaboration in Qatar, we suspect that these cultural differences can impose a barrier to understanding and to the willingness to adopt interprofessional practices in such a diverse healthcare system.

El-Awaisi et al<sup>22</sup> looked at the level of communication among healthcare providers in primary interprofessional care in Qatar. They reported that most participants rated the level of communication as effective, but they argued that this might not be the real picture as nurses usually agree with physicians which made their voices unheard and thus handling ineffective communication. Although

students in our study reflected positively about the communication process among healthcare providers, some of them shared negative views. Communication with mutual respect among health care providers is a necessary process for achieving successful collaboration. However, the authoritative role that physicians play in the health care system make this communication challenging.

Bujak and Bartholomew reported that the nurse and the physician rarely talk to each other, and when they do, the communication is often dysfunctional.<sup>40</sup> Students described how this issue is related to power relations which express the hierarchical nature of health professions in healthcare practice that might affect the communication among professionals. Interestingly, this authoritative power of physicians over nurses has been shown to differ and shift depending on the nurses' position and seniority. As a result of this power fluctuation between physicians and nurses, providing and accepting feedback tends to have negative implications for both parties.<sup>41</sup>

Students also addressed how interprofessionalism was represented in organizing patient flow and the referral process in a center. It was the responsibility of all professionals to make this a smooth process and satisfy patients' needs. Since the majority of patients were walk-in patients who did not have a prescheduled appointment, the result was long wait times for patients. Wait time was defined as the time from completion of the client intake form to the time the patient was first seen by a healthcare team member or, in other words, the time from client intake form completion to discharge time.<sup>42</sup> One previous study also found that long wait times were a major cause of patient dissatisfaction in patient care.<sup>43</sup>

Similarly, long wait times resulted in overwhelmed professionals and dissatisfied patients in our study. Students suggested that managing the patient flow is a process that should be discussed by all professions dealing with the patients from the time they arrive to the center till they leave with the proper treatment or referred to the hospital. They also emphasized that ideas from all professions should be respected equally; the center manager, the receptionist, triage nurse, family physician, lab technician, radiologists, health educator, nutritionist, a consultant and finally the pharmacists. Students suggested various ideas in their reports to manage the patient flow and referral process:

1. Conduct meetings by the managers to inform their staff about the policies in the center, and discuss the patient flow and referral process frequently.

2. Continuous communication between the different departments is very important to ensure effectiveness and efficiency.
3. Patient peak arrival times should be plotted over a long period to better forecast crowding.
4. The reception staff must communicate the patient flow and referral system to walk-in patients, and encourage them to book appointments ahead to avoid long waiting time.
5. Improve the patient calling system by using the screen in the waiting area, especially that there are people with hearing impairment. Also, for those patients who are illiterate and cannot read the numbers, the nurse can call their names if no one responded to the regular number calling system instead of skipping numbers.
6. Staff members should be trained to use the Speech Recognition Data Entry Device, which helps in filling out patients' records in a faster way. Since the Cerner requires considerable time to complete the documentation, the system offers a calibrated speech-to-text option that could be used by the doctors as it is quicker than typing.
7. Have a diverse nursing team in the triage clinic who can speak and understand the most popular languages in Qatar: Arabic, English, Farsi, and Hindi. As a result, communication with patients can be improved and the patients' safety can be maintained.
8. Have a health educator who can speak both Arabic and English in the cancer screening clinic to educate patients about the importance of screening and to answer their questions and related concerns.
9. Add a list of the available drugs in the health center into Cerner, so that physicians prescribe from the available medications only.
10. The call center that relays the arrival of results to patients must be trained to better report results and call less in advance to reduce anxiety between receiving the results and the day of the appointment.

The health education students in our study were able to identify their role in providing primary interprofessional care, including collaboration and teamwork for the benefit of the patient, communication among professionals, and managing the patient flow and referral process in the centers. According to Morley and Cashell, an efficient

collaborative team tends to have a horizontal rather than hierarchical power structure and better level of role understanding.<sup>44</sup>

A main advantage from interprofessional collaboration among healthcare providers is enhancing their professional role.<sup>7</sup> During their placements in an interprofessional clinic, the students developed an understanding of the scope of their work and other's. They understood where they fit because during their course work, they learned that health education is an interdisciplinary field where one interacts, learns, and works with other diverse professionals to prevent disease, and promote health. Counseling and education by health educators in primary care can be associated with greater clinical effectiveness in short-term health outcomes compared to typical care and can lead to a significant reduction in the number of consultations and referrals to specialist care.<sup>45</sup>

Health education students faced a major challenge during their experiential learning, which was interacting with some professionals who did not recognize the health education field nor the role of health educators, as the field in Qatar is an emerging field. According to Suter et al, understanding the roles of other professionals and communication are the two core competencies for successful collaborative work.<sup>46</sup> These professionals may experience role overlapping and the feelings of competitiveness due to the presence of health educators in a clinical setting. In a recent systematic review, the authors highlights that interprofessional collaboration must be constantly validated by professionals themselves. They explained how overlaps in professional work would arise due to collaborative strains, that might cause conflicts. They also discussed two types of overlap that professionals usually negotiate: firstly, the overlap between work roles and responsibilities in which working together can cause vague overlaps about responsibilities and whose responsibilities are these. Secondly, overlaps during patient care processes as overlaps are witnessed when treating patients together.

In order to overcome this challenge, students in our study strongly felt the need to invest effort into providing interprofessional education and training for professionals working in PHC settings which would help them understand the scope of practice for other professionals including health educators. There is an apparent need to continue training our students in interprofessional collaboration and communication skills in addition to providing other health-care professionals with similar trainings on the same

competencies. Training health professionals who can work in interprofessional and multiprofessional teams is essential for effective, competent and culturally sensitive health care delivery.<sup>47</sup>

In addition, students recommended promoting the health education field among local stakeholders and organizations. Similar needs and recommendations have also been addressed in previous research in regards to other professions. A study reported how health care team might have misconceptions about the role of certified child-life specialists (CCLS), which is another less visible profession, and they recommended continued education about the CCLS role and communication with CCLSs to promote interprofessional collaboration. Health educators and other members of small or emerging professions will need to do better in marketing their skills to be fully engaged in providing patient-centered care.<sup>48</sup> Efforts are also needed to promote the nonclinical type of work our health education students are trained to do in order to familiarize clinical healthcare professionals with the emerging field.

Our students also recommended to clearly orient the professionals who supervise them about the goals and learning outcomes of their training in PHC. Practice-based IPE is still at an emergent stage in Qatar and globally. According to O'Leary et al,<sup>49</sup> it is a complex model and the of implementation in healthcare curriculums will be challenging and will differ globally. However, it would enhance the value of practicing interprofessional care and prepare students for future collaborative work environment.

This study is the first of its kind to explore health education in students' experience in regard to observing and practicing primary interprofessional care in Qatar. Our study will add to the scarce body of literature examining the topic of interprofessional collaboration among healthcare providers in the region. The findings would support planning for interprofessional education training to enhance the development of collaboration among health care providers, including health educators. Additionally, the findings would support professionals to implement practice-based IPE in their placement curriculums.

Our study has a few limitations. The instructor for the field experience met students each week before their training. During these meetings, the instructor explained major public health concepts, including the role of health educators in interprofessional care, which might have biased the students when they addressed the concept of interprofessionalism in their reports. Another limitation is that we were unable to follow up with the students to elaborate on some of their input.

Future research may use standardized tools to assess the different aspects of interprofessional care among health educators and other professionals in primary healthcare and gather baseline information to guide future strategies focusing on enhancing interprofessional care for the benefit of the patients. Qualitative research with health educators and other healthcare provider is also recommended to explore the motivators and barriers of primary interprofessional care.

## Conclusion

The demands of the healthcare field are calling to focus on greater collaboration among healthcare providers, work beyond professional boundaries and hierarchies, and redefine the roles of various professionals involved in primary healthcare.

Interprofessional care was observed and practiced by Qatar University health education students in different aspects including: teamwork and collaboration for the benefit of the patient, communication among health care professionals and patient flow during their experiential learning in PHCC. Our study addresses gaps in the literature in regard to the role of health educators in primary interprofessional care and the challenges health education students might face during practice-based IPE. The findings can be tailored towards planning for interprofessional education workshops to boost collaboration progress among health care providers including health educators. Moreover, the findings would support professionals interested to implement practice-based IPE in their placement curriculums.

## Abbreviations

IPE, interprofessional education; GCC, Gulf Cooperation Council; PHC, Primary Health Care; PHCC, Primary Health Care Corporation; IRB, Institutional Review Board; NCD, noncommunicable diseases; WHO, World Health Organization; IPEC, The Interprofessional Education Collaborative.

## Data Sharing Statement

The datasets used and analyzed during the current study are available from the corresponding author on reasonable request.

## Ethics Approval and Consent to Participate

The study was approved by the Qatar University Institutional Review Board (Research Ethics Approval No. QU-IRB 1160-

EA19). The informed consent obtained from study participants was a written form. All methods were carried out in accordance with relevant guidelines and regulations.

## Consent for Publication

The participants consent included publication of anonymized responses.

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## Author Contributions

All authors made a significant contribution to the work reported, whether that is in the conception, study design, execution, acquisition of data, analysis and interpretation, or in all these areas; took part in drafting, revising or critically reviewing the article; gave final approval of the version to be published; have agreed on the journal to which the article has been submitted; and agree to be accountable for all aspects of the work.

## Disclosure

Dr Hanan Abdul Rahim reports being the Dean of the college in which the work was based. The authors report no other potential conflicts of interest in this work.

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