RESEARCH ARTICLE

Exploring the gaps between training and expected job skills of public health graduates to identify: A way forward

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Abstract

Objective: To explore the non-alignment between what is taught in academic programmes for public health and what is actually needed or expected in the field.

Method: The qualitative phenomenological study was conducted from October 2020 to April 2021 in Karachi after approval from the institutional ethics review board of Jinnah Sindh Medical University, Karachi. The sample comprised major stakeholders including representatives of public health institutions and organisations involved in the implementation of public health programmes. Data was collected through in-depth interviews and focus group discussions using a guide after content validation by an expert. Data was analysed using both inductive and deductive approaches.

Results: A total of 13 in-depth interviews and 5 focus group discussions were conducted. Regarding gaps in the process of curriculum development, 2 major concerns emerged; lack of comprehensive involvement of experts in different fields of public health in designing the curriculum, and the lack of incorporation of the feedback provided by students in revising the curriculum. Regarding the content of curriculum, three main themes emerged; theoretical nature of courses, lack of uniformity in all programmes, and poor local contextualisation. The casual approach of students and barriers faced by them in joining public health programmes also affected the quality of such programmes.

Conclusion: Three broad areas of improvement were identified, which included improvement in curriculum, methods of learning, and improving students' approach.

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Introduction

Health indicators and disease burdens that the national healthcare delivery system carries have never shown satisfactory progress in Pakistan.[1,2] As a result, public health solutions are either misunderstood or ignored altogether.[3] Many globally successful Public Health plans, like primary healthcare programmes could not bloom in Pakistan as implementation was done half-heartedly.[4,5] The lack of human resources, leadership and researchers in the Public Health domain further amplified the obstacles.[6] As a result, Public Health programmes in Pakistan are run by individuals who are either part of the administrative domain, or are from a bureaucratic cadre.[1]

Fortunately, in recent times in Pakistan, Public Health programmes have started to shape up by applying indigenous thinking processes and rationality while reforming the healthcare system subjectively as well as objectively. Still, no official directory or website mentions the number of Public Health degree holders working in Pakistan. In the late 1990s, the Health Services Academy (HSA) in Islamabad launched its Public Health programme in Islamabad, and since then, public health programmes have mushroomed in many universities. These institutes and many more are setting standards and opening dynamic horizons within the healthcare system, but it is still a long way away from reaching optimal goals. As the programmes have been running for quite some time, it is essential to take direct feedback from the stakeholders. In Pakistan, a 2017 HSA study evaluated its own Public Health programme curriculum, and strongly proposed that Public Health institutes should regularly assess their curriculum using self-assessment tools.[7] The study framed a guide for programme review activities that suggested involving important stakeholders, like faculty members, students, alumni and job providers, while using exploratory and qualitative methods.[7] Furthermore, in 2018, the World Health Organisation (WHO) published a mixed-method study highlighting that Public Health students generally lacked the skills required in the practical field, and further pointed out the absence of a centralised body to converge the efforts of Public Health programmes uniformly in Pakistan.[8]

It is generally believed that there is a need for improving training of students to acquire expected job skills for implementing health programmes successfully. The current

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study was planned to explore these gaps by engaging all the stakeholders to improve the scope of public health programmes, and develop recommendations on the changes needed in postgraduate Public Health programmes.

Subjects and Methods

The transcendental phenomenological qualitative study was conducted in Karachi from October 2020 to April 2021 after approval from the institutional ethics review board of Jinnah Sindh Medical University (JSMU), Karachi. The sample comprised major stakeholders including representatives of public health institutions and organisations involved in the implementation of Public Health programmes to ensure the assimilation of Public Health graduates in the field.[9] Those unwilling to participate or not allowing audio-taping of the interviews were excluded. The sample was raised using purposive sampling technique from two public and two private-public health institutions in Sindh. There was no anticipated sample size, and the participants were continuously inducted until data saturation was achieved.

Individuals who could provide helpful information on the phenomena were approached, and those who agreed were interviewed. Different interview guides were prepared for different sets of stakeholders. For deans, institutional heads, and faculty, the guide inquired about the process of imparting training and skills at their institution, the sets of essential skills taught, and their suggestions to improve the programme. For students and alumni, the questions focussed on their perception of readiness to perform well at their jobs after completing the programme, and the gaps that must be filled to make the programmes more effective. The guide for administrators, managers and programme implementers sought their opinion on the quality of graduates from Public Health programmes of Sindh and their suggestions on how to improve the programmes further.

After taking informed consent from the participants, audio recordings of in-depth interviews (IDIs) and focus group discussions (FGDs) were done while keeping the identities of all institutions confidential.

The IDIs and FGDs were conducted at the institute of the participants or at a place mutually agreed upon by the participants, or audio interviews were conducted online. All interviews were conducted by the principal investigator. Non-participants were not present during any IDI or FGD. Nuances and notes were generated after each IDI and FGD. Each IDI took 30-35 minutes, while each FGD lasted 50-60 minutes. The target was to saturate the data inflow during the activity, and the collected data was managed, stored and analysed accordingly.

Transcriptions were developed from the audio data collected. Data from these different sources was triangulated. Services from a professional transcriber were acquired. The principal investigator maintained internal reliability by listening to all audios again, corresponding these audios to the transcriptions to spot out any missing data.

Coding was done manually by three data coders to ensure validity. The analysis started with thorough reading and note-taking of all the transcriptions to develop a general understanding of the phenomenon before exploring it deeply, and premature conclusions were avoided. Significant statements imbibed with the lived experience of Public Health personnel were extracted from the transcriptions. Meanings were derived and churned out from these statements. Inductive and deductive reasoning for the thematic analysis was carried out by generating 'codes' initially, and then 'themes' emerged to formulate 'essence' from the emerging data.

Results

There were a total of 13 IDIs and 5 FGDs (Table).

There were 3 main themes that emerged. The first theme identified was gaps in curriculum, and it had 2 sub-themes; process of curriculum development, and content of curriculum. The second theme was gaps in pedagogical approaches, and it had 2 sub-themes; practicum, and learning sources. The third theme was gaps in the approach of students towards Public Health programmes, and it had 2 sub-themes; approach of students, and barriers faced by students.

Based on the identified gaps, a framework for a recommendation was developed.

Table: Characteristics of the research participants.

Public Health Institutes		
	Number	**Place and Participants**
Focus Group Discussion	5	One with Faculty of Public Sector Institute of Public Health
		Two with Students of Public Sector Institute of Public Health
		One with Students of Private Sector Institute of Public Health
		One with postgraduate trainees of Private Sector Institute of Public Health
In-depth Interviews	6	One with Dean of Public Sector Institute of Public Health
		One with Head of Department of Private Sector Institute of Public Health
		Two with Senior Faculty of Private Sector Institute of Public Health
		Two with Senior Faculty of Public Sector Institute of Public Health
Non-Government Organisation and Department of Health		
In-depth Interviews	7	Five with Health Program Administrators of Health Department\
		Two with Administrators of Non-Government Organizations

Under the first theme, concern was voiced regarding the lack of extensive involvement of experts from different fields of Public Health in designing the curriculum. As expressed by an official of the provincial health regulatory body, "*The curriculum is not developed by representatives and experts of public health belonging to academia and future job providers*". Secondly, most of the teaching programmes lacked incorporation of the feedback provided by students in revising the curriculum. As one of the students pointed out, "*There should be an organised system to include inputs by students, and their suggestions should be incorporated into the curriculum of public health programmes*".

The three main concerns in the sub-theme 'content of the curriculum' were the theoretical nature of courses, lack of uniformity in all programmes, and poor local contextualisation.

While discussing the theoretical nature of the course, an official said, "*Basically, our Public Health programmes … are based on ideal scenarios or theoretical knowledge, and all assessments are made based on ideal scenarios in classrooms. However, our graduates are not prepared to deal with practical work-life situations that are not controlled*."

Regarding the lack of uniformity in the content of all Public Health programmes, a dean from a public-sector institute commented, "*Public Health programmes are not standardised across the country. They are not even standardised across the city*".

A faculty member from a private university said: "*There have been mushrooming of Public Health programmes across the country, but there is hardly any standardisation in terms of content and credit hours across these programmes.*" It was also mentioned that courses varied, and even tracks and names of degrees were different, and there were no uniform admission criterion. Another concern raised was that a master's degree was awarded based on coursework without the mandatory requirement of a thesis. Another faculty member preferred the award of a degree only after a thesis. At the same time, students complained that their institute discouraged them from doing thesis as they lacked supervisors. Lack of opportunity to participate in research projects as well as negligible funding opportunities also hindered getting good quality learning. Many institutes had very little research activity, which was a major hurdle in providing direct exposure to students.

While commenting on poor local contextualisation of the curriculum, a private institute faculty member said, "*Our programmes should not be based on models which are developed for the United States or Canada or any other Western country. Instead, our programmes should have indigenously derived curriculum based on competencies that would fulfil our country's needs*".

Repetitive content taught in too many courses because of a high number of credit hours assigned to Public Health programmes was also pointed out by a student, "*There was a four-credit hour subject in the last semester which does not requires that much time. Moreover, we studied three different subjects which had more or less similar content*".

Lastly, revision in the course content according to updated guidelines of different Public Health topics was also shared as a matter of concern. A faculty member emphasised, "*The main thing in designing curriculum is to make it updated according to advancement in the world; the faculty needs to make more effort in periodically revising and updating the courses*".

In the second theme, 'gaps in pedagogical approaches,' the first sub-theme was 'practicum,' in which poor focus on practical learning was highlighted by most participants. In addition, the lack of placement-based education with relevant job-providing organisations was raised as a major concern. "*Our students get bookish knowledge basically, but if they get three months rotation or in-field placements to observe first-hand fieldwork practically by coordinating with programme managers and grasp the actual skills that are required, they will be able to achieve objectives of the Public Health programme in a real sense*," stated a participant.

Poor engagement of students with the community during the teaching programme and unavailability of community health centres attached to their institute was a major concern raised by a faculty member, "*Ideally, we would like to have a community health centre attached to our institute, so that the students can visit it regularly*".

Participants also thought that some major skills, like report writing and public health surveillance, needed to be imparted to prepare the graduates for practical challenges.

In the sub-theme 'learning sources', the lack of adequate and skilled faculty and the poor student-supervisor ratio were the major concerns identified. A public sector faculty member pointed out, "*Our hands are tied because there is not much that we can offer in remuneration to the skilled faculty or retain them for long periods. We cannot compete with non-governmental organisations (NGOs) offering 5-10 times better packages to skilled Public Health experts*".

The reasons pointed out for the lack of adequate faculty skills included low faculty commitment to learn. As one of the students said, "*We need expert teachers to teach us courses; instead of solving theoretical problems in biostatistics, practical skills on software shall be taught for*

data analysis on original data-sets." A participant thought online platforms could be used more effectively to engage international experts, "*We can tap into resources from neighbouring countries to attract faculties, particularly from the Eastern Mediterranean Region (EMRO) region. We can improve our quality of education by seeking expertise online wherever it is available*".

Resistance and lack of support by NGOs and the Department of Health for student placements were also quoted as barriers in the way of accessing effective learning sources. One of the faculty members complained, "*Department of Health and NGOs do not cooperate to allow students to do placements; they want trained people and do not want people who are not trained*".

One of the participants also criticised the business model of some institutes in Public Health programmes. "*What I have observed is that Public Health programmes are based on the business model. They induct more students than allowed and then make sure all pass out of that programme, and that is something that has an impact on the quality of education.*"

Lastly, the third theme focussed on students' casual approach and the barriers the students faced in joining Public Health programmes.

It was pointed out in that many students join Public Health programmes because they do not want to do clinical practice, and Public Health is their last resort. However, they still expect Public Health jobs without hard work and without acquiring the practical skills necessary for the field. Commenting on those students who are on the job, one faculty member from a public health institute said, "*Most of the students who already have a job are opting for a postgraduate Public Health degree for promotions and increase in their salaries.*"

Referring to new graduates who wanted to build a career in Public Health, one faculty member from the public sector commented, "*Students only focus on getting good grade point average (GPA) and passing the course for the sake of grades rather than learning.*"

The barriers faced by the students included a lack of interaction with future job-providing organisations while attending their coursework. As commented by a student, "When we graduate from an institute and prepare to apply for NGOs working on different programmes or projects, chances to get a job will be increased if we do placements with them." *A faculty member mentioned that the students could not commit enough time for placements due to their job commitments, "Our students are at the master's level, and they are already working somewhere. They do not have time to spare to improve their skills.*"

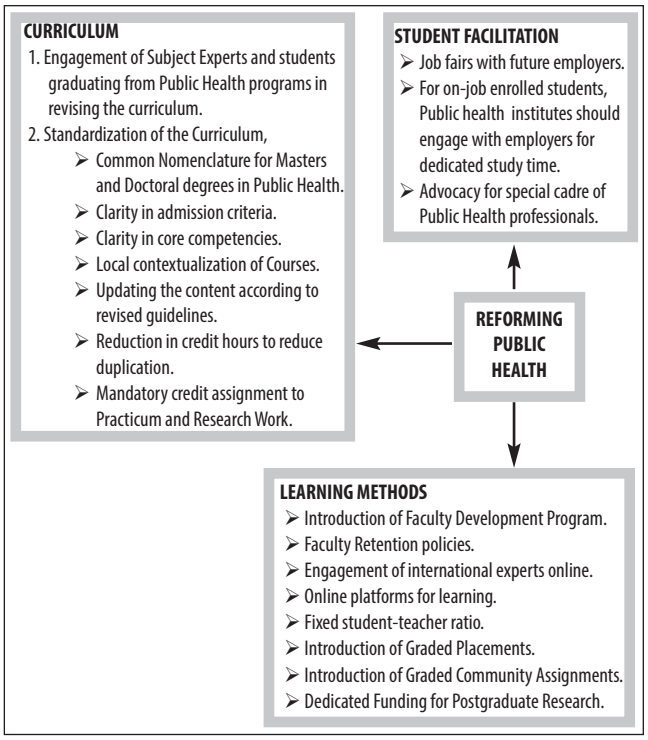

Figure: Summary of recommendations to improve postgraduate public health programmes in Pakistan.

The students also complained that their organisations did not support them in considering a reduced workload during their semesters, "*It will be great if an employer thinks that if the employee pursues a degree, it will bring betterment to the organisation in the future.*"

The students even raised concerns about the available jobs going to people with good contacts.

Based on the findings, a set of recommendations was generated for improvement in postgraduate Public Health programmes in Pakistan (Figure).

Discussion

The current study attempted to understand the issues in postgraduate Public Health programmes in depth to recommend the changes that are needed to improve the quality and productivity of Public Health graduates in the future in Pakistan.

Three broad areas of improvement were identified, which included improvement in curriculum, methods of learning, and improving students' approach. Based on the findings, a three-pronged set of recommendations was formulated for improvement in postgraduate Public Health programmes in Pakistan.

First, the curriculum shall be standardised. The engagement of a representative pool of experts in different

fields of Public Health in designing the curriculum shall be ensured. This pool shall include directors of master's programmes and heads of Public Health programmes. The evaluation and feedback provided by students shall also be included in the revision of the curriculum. The curriculum shall be standardised with uniform terminology, admission criteria, maximum enrolment, introductory courses with objectives, core competencies, and a consistent standard of credit hours with mandatory credits assigned to practicum and research. The content of the curriculum shall be contextualised according to the Public Health needs of the country in such a way that knowledge is transferred to tackle the major Public Health issues in the country.

Literature also supports these strategies. A recently conducted study in Ethiopia suggested involving all the stakeholders from the education and health sectors to improvise and update the Public Health curriculum.[10] An Irish study concluded that there was no consistent standard of conducting practicum in Public Health programmes, and none was assigned any credit hours. The study recommended introducing competency-based graded training in the programmes.[11] A Canadian study reported that although core competencies were well-defined in the programmes, compliance was poor.[12] An Ethiopian article also emphasised improving current curricula according to local needs.[13]

Second, learning methods in postgraduate Public Health programmes also need to evolve. Along with course work, graded weightage shall be assigned to practicum to ensure that core competencies are learned when the students graduate. This includes placements in Public Health organisations, community-based assignments, and facilitation to get involved in research projects. The students shall be evaluated based on core competencies, including writing, analytical, presentation, communication and management skills. A study in the US highlighted that the Public Health workforce needed engagement in educational programmes where practical skills were taught.[14] The importance of such placements has also been highlighted widely in the literature. Two studies in Canada highlighted that experiential learning was the best way of producing a capable Public Health force.[15,16] Recommendations of a study in the US also supported the introduction of a 'learn by doing model' for Public Health teaching.[17]

Maximum advantage shall also be taken from online technology to learn new skills by engaging international experts. A Serbian study also recommended the enhancement of core competencies in Public Health through global collaboration.[18]

Faculty development and retention programmes shall be introduced in institutes of Public Health. Performance-based incentives for career growth and skills development shall be initiated to motivate the faculty to enhance and upgrade their skills. A study in India also concluded that Public Health institutions must devise plans to stop faculty attrition.[19] The institutes shall also develop partnerships with NGOs and the Department of Health for student placements.

Third, postgraduate degrees shall only be provided once the students have achieved competencies. Institutes should engage with employers of their students and advocate for dedicated study time needed to complete the degree. The students shall also be connected with their potential future employers.

The current study has a few limitations. All the participants belonged to Karachi. Engagement of other provinces and towns could have enriched the insights. Due to the coronavirus disease-2019 (COVID-19) pandemic, many FGDs and IDIs were conducted online, and there was no scribe online, which could have compromised note-taking and the researchers' ability to assess the reactions and expressions of the participants. Furthermore, the participants were all related to Public Health and might have lacked self-reflection.

Conclusion

Three broad areas of improvement were identified; improvement in curriculum, methods of learning, and improving students' approach.

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Author Contribution:
HUR: Design, data collection, coding, analysis inductive and deductive and editing.
MM: Data interpretation, analysis inductive and deductive, writing.
SS: Review, supervision, final approval.