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Developing a communication-skills training curriculum for resident-physicians to enhance patient outcomes at an academic medical centre: an ongoing mixed-methods study protocol

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ABSTRACT

Introduction Effective physician–patient communication is directly linked to enhanced patient safety, improved healthcare quality and health outcomes. Numerous studies have been done to implement and reinforce communication skills as core competencies to be acquired during residency training for providing culturally competent care. Pakistan has an ethnically diverse culture with people from varying diasporas. Hence there is a need to develop a curriculum that teaches cultural competency to residents. Thus, the aim of this study is (1) the identification of existing problems of communication skills among residents across various specialties, and (2) to strategise a communication skills curriculum by organising a conference of experts based on the Delphi method/estimate-talk-estimate method.

Methods and analysis This study is divided into two phases. The first phase will employ a mixed-methods approach whereby the perceptions of attendings, residents, fellows, nurses, medical students and patients about resident–patient communication will be assessed via validated surveys, focused group discussions and in-depth interviews. Quantitative and qualitative data will be analysed using Stata and NVivo, respectively. The second phase is the development of a communication skills curriculum for residents based on results from phase one and a Delphi consensus involving medical education experts. Both phases will be conducted at a tertiary care hospital in Karachi, Pakistan.

Ethics and dissemination This study has received ethical approval from the Ethical Review Committee at the Aga Khan University (2021-6041-17126). All participants will be mandated to provide informed consent and their confidentiality will be maintained by using de-identifiers and limiting access of the data to the research team only. The findings from this study will be presented in the form of original research papers.

STRENGTHS AND LIMITATIONS OF THIS STUDY

⇒ This is the first study of its kind to be done in a low-middle income country, evaluating the impact of implementing a communication skills training curriculum on improving residents' interaction with patients and shifting the paradigm of physician–patient interaction to a more 'patient-centred approach'.
⇒ Using specialised surveys, validated assessment tools and methods such as the Delphi method/estimate-talk-estimate method and well-researched interview guides for collecting qualitative data presents the opportunity to generate valid results and applicability of the findings.
⇒ The use of a mixed-methods study design adds more robustness to the methodology.
⇒ The inclusion of varied cohorts gives a diverse view of the subject matter.
⇒ The limited number of participants from a single centre could affect the generalisability of the findings.

INTRODUCTION

Essentials of effective physician–patient communication include 'establishing a relationship by opening the discussion, gathering information, understanding the patient's perspective, sharing information, reaching agreement on problems and plans and providing closure'.[1] Effective physician–patient communication is directly linked to enhanced patient safety, improved healthcare quality and health outcomes.[2] A landmark report by the Institute of Medicine first introduced the phrase 'patient-centred approach' in healthcare delivery systems, advocating the need for physicians to be respectful and cognisant of patients' preferences and values. This report also focused on using a patient-centric approach toward guiding clinical decision-making.[3] Furthermore, numerous studies have endorsed the intrinsic

association of better interpersonal skills, communication skills and professional behaviour of healthcare providers with improvement in healthcare outcomes and quality.[4 5] The Accreditation Council for Graduate Medical Education necessitates the need for residency programmes to develop an assessment of six core competencies including interpersonal skills and communication skills.[6] In addition to this, several other postgraduate medical training accreditation bodies like the General Medical Council in the UK highlight 'Interpersonal and Communication Skills' as essential competencies, to be acquired by healthcare providers.[7] These examples further highlight the importance of developing a solid foundation of interpersonal skills and communication skills in physicians and training residents. Training physicians in communication skills has resulted in better communication with patients, improved adherence to medication and better health outcomes.[8] Conversely, suboptimal physician–patient communication is associated with poor disease management.[9]

Numerous studies have been done to implement and reinforce communication skills as an important core competency to be acquired during residency training. A study conducted in 2017 assessing the effectiveness of a communication skills curriculum for general surgery residents in a tertiary care hospital in the USA found that a persistent focus on patient and family communication skills can improve healthcare outcomes.[10] Another study conducted in the USA on surgical residents between 2015 and 2017, employed a 2-year training curriculum with eight quarterly modules on various communication topics. Results indicated that surgical patients felt that doctors disseminated medical knowledge with enhanced clarity after enrolling in the curriculum.[11] The development of a communication skills curriculum for pulmonary and critical care fellows in a single centre in the USA found that fellows inducted into this programme had enhanced communication skills, as assessed by a standardised Family Meeting Behavioural Skills Checklist.[12]

Within the communication skills curriculum, certain key competencies warrant special attention. These include cultural competency training, cross-cultural training and removing biases that physicians might have when treating patients which can impact the physician–patient relationship. Cultural competency has been defined as a set of behaviours, attitudes and policies that come together in a system or among professionals enabling them to work effectively in cross-cultural settings.[13] Developing cultural competency among healthcare professionals is essential to ensure that patients from all cultural backgrounds receive adequate healthcare. Studies assessing educational interventions targeted at inculcating cultural competency in healthcare professionals have found improvements in health behaviour among patients, mutual understanding between physicians and patients and significantly better notions about healthcare professionals among patients. A major chunk of these patients belonged to what has been termed as culturally and linguistically diverse backgrounds.[14] Cultural diversity can be found in the four provinces of Pakistan where different languages are spoken apart from the national language Urdu.[15] Hence, training residents in communication skills will help them cater to patients from diverse cultural backgrounds in a better manner. Similarly, dissimilarities in socioeconomic status and cultural backgrounds between physicians and patients have been shown to affect communication and clinical decision-making.[16 17] In a report by the Institute of Medicine, cross-cultural education was suggested as a means to curb ethnic health disparities.[3] Cross-cultural training incorporated into the residency programme of internal medicine residents has been shown to enhance their self-efficacy in dealing with patients from diverse cultural backgrounds.[18] Finally, the third competency is removing unconscious biases that residents might have when dealing with patients from diverse socio-cultural backgrounds. Programmes implemented in residency training for tackling such biases have been shown to remarkably improve residents' cognisance of race when caring for patients.[19]

Perspective from Pakistan

A study from Pakistan noted a significant association between the dimensions of doctor–patient interactions with patient satisfaction and highlighted a need to develop the interpersonal skills of doctors to improve the quality of their interactions with patients.[20] In a study conducted on the knowledge and communication needs assessment of health workers in a developing country, 80% of the respondents described their communication skills as moderately sufficient and expressed a need for improvement.[21] It is concerning to note that only 5.15% of postgraduate residents in a tertiary care hospital in Pakistan reported having received formal training in communication skills as undergraduate medical students.[22] These findings indicate the need to devise and implement a standardised curriculum to improve the communication abilities and interpersonal skills of residents, especially in a low-middle income country such as Pakistan.

Scope of the study

The public and private sectors constitute the healthcare system of Pakistan. The public sector delivers healthcare through a three-tiered system. The first level, is the primary care includes Basic Health Units and Rural Health Centres, followed by Tehsil Headquarter Hospitals and District Headquarter Hospitals forming secondary care and the last is tertiary care which includes teaching hospitals.[23] Similarly, there are a total of 117 public and private medical colleges registered with the Pakistan Medical Commission (PMC).[24] Core clinical skills such as those concerning communication and interpersonal relationships are inadequately covered in the existing curriculum of various residency programmes at the Aga Khan University (AKU). The current programme includes a 3 hour-long workshop for the residents focused on generic communication skills conducted by the Postgraduate

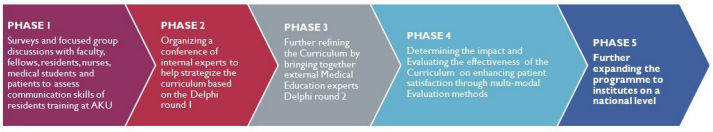

Figure 1 Flow diagram of various phases of the study. AKU, Aga Khan University

Medical Education (PGME) Department at AKU. Year 1 and 2 residents also attend workshops organised by the Royal College of Physicians and Surgeons. More recently, a core curriculum targeting these skills has been developed consisting of eight sessions, each lasting an hour. Evaluation of communication skills is done quarterly via One45 evaluations, which is an online platform used by faculty for evaluating resident performance[25] However, most of the learning is passive via observing attendings, fellows and senior residents. While there is a seemingly adequate number of sessions as part of the curriculum, the implementation of these educational interventions has been insufficient. This is evidenced by the fact that most resident-related issues reported by the hospital staff and patients are related to inept communication skills, indifferent attitude and unacceptable behaviour.[26] Furthermore, residents entering various programmes offered by AKU come from diverse socioeconomic and cultural settings resulting in a highly variable communication skill set among residents. This highlights the need to develop and implement a curriculum focused on enhancing communication and interpersonal skills at AKU. Once implemented and refined via multimodal evaluation methods, the curriculum can be implemented on a national level at teaching hospitals all over Pakistan. Refer to figure 1 for an illustration of various phases of the study.

STUDY OBJECTIVES

This study aims to identify the deficiencies in residents' communication skills and their training programme across various specialties, through a series of surveys and focus group discussions (FGDs) with attendings, fellows, residents, medical students, nurses and in-depth interviews with patients and to strategise a curriculum by organising a conference of experts based on the Delphi method/estimate-talk-estimate (ETE) method. Following is the objective of the study:

To develop a curriculum aimed at enhancing the communication and interpersonal skills of residents based on a needs assessment and expert consensus.

METHODS AND ANALYSIS

This study commenced at the AKU, Pakistan, on 3 May 2021 and is currently ongoing.

Study instruments, settings and design

This study is divided into two phases. The first phase encompasses the identification of problems relating to the communication skills of residents, and the second phase is the development of the curriculum based on the Delphi consensus. The details of each of these phases are elaborated on below.

Phase 1: identification of the existing problems of communication skills exhibited by residents across various specialties using a mixed-methods design

Phase 1A

FGDs with attendings, fellows, residents, nurses and medical students will be conducted. In-depth interviews will be held with patients. These will be centralised using an interview guide, developed after an extensive literature search and will focus on the identification of the core themes related to communication skills training that need to be improved among residents (see online supplemental files 1 and 2).

Phase 1B: quantitative survey of attendings, fellows, residents, medical students, patients and attendants (via needs assessment tool 2)

To objectively assess residents' communication skills, a validated survey developed in India titled, questionnaire for self-assessment of communication skills in resident doctors, will be used[27] (see online supplemental file 3). For cohorts other than residents, we have modified the questionnaire from a self-assessment (eg, how often do you experience minor conflicts) to a third-person format (eg, how often do residents experience minor conflicts). The phrasing of the rest of the survey items was kept the same. Similarly, another validated survey, the Communication Assessment Tool (CAT)[28] will be administered to patients to assess their perception regarding residents' communication skills. CAT has been translated into the national language (Urdu) by the research team for use with patients not proficient in English (see online supplemental file 4). Permission from the authors was taken prior to usage of both the survey questionnaires.

Phases 2 and 3: conference of experts to help strategise the curriculum based on the Delphi method/estimate-talk-estimate method

Delphi's method encompasses a sequential multistage approach that employs standardised questionnaires administered to expert individuals.[29 30] These questionnaires will be administered to the experts through email and their feedback will be aggregated and assimilated by the moderator.[31] Multiple subgroups will be made and one moderator per group will be tasked with administering the questionnaires in two or more rounds. After the round, the moderator will present a summary of the

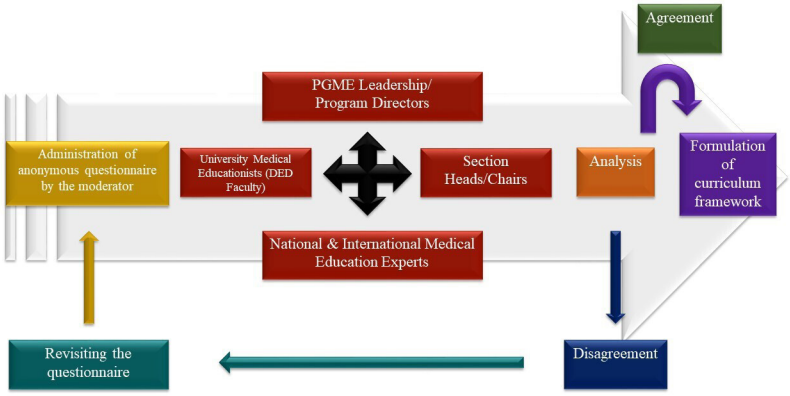

Figure 2 Flow model of the Delphi method for expert opinion. DED, Department of Educational Development; PGME, Postgraduate Medical Education.

experts' opinions and their corresponding reasons for the same.

At this point, the experts shall be given a chance to 'revise' or 'amend' their responses based on the collective and cumulative narrative of the entire group.[32] This will decrease the range of answers and pivot the group towards one consensus.[33] The anonymity of the responders will be kept at the highest priority, to negate undue bias, coercion and free expression of opinions and critique.[32]

The first round of Delphi consensus will be conducted with local medical education experts (Phase 2) and the second round with international experts (Phase 3).

Outcomes and key deliverables

This communication technique will allow for structured discourse regarding underlying themes, foundational principles and key elements of the curriculum design. The process will be declared complete based on the predefined criteria (number of rounds or number of questionnaire responses completed or consensus over significant areas). At the summit of this ETE/Delphi conference, key areas of focus will be finalised to build the foundations of the curriculum. Refer to figure 2 for the flow of the Delphi method for expert opinion.

Study duration

- Phase 1—This phase has already been initiated and it will approximately last for 1–2 months
- Phase 2—This phase will take 2–3 months (it will include four to five separate rounds of panel discussions with faculty members to arrive at a consensus).

Sampling technique and size

Phase 1 (qualitative interviews and quantitative surveys)

Purposive sampling will be used to disseminate surveys to the study cohorts. The desired response rate for these surveys is approximately 50% in all cohorts. Thus, from a total of 243 attendings, 54 fellows, 254 residents, 1181 nurses and 200 medical students from fourth and fifth years and from 121 attendings, 27 fellows, 127 residents, 591 nurses and 100 medical students will need to be surveyed. Based on prior literature,[34] a total of 400 patients will be surveyed. Two FGDs consisting of 10–12 people will be conducted within each cohort (attendings, fellows, residents, nurses and medical students) along with in-depth interviews with a minimum of 15 patients via convenience sampling. However, this will be subject to thematic saturation of the data. Since healthcare workers might feel more exposed in a one-on-one setting, we felt conducting FGDs will help make participants more comfortable in sharing their views and help them in motivating to speak up by listening to others' opinions. For gauging convergent and divergent themes in the data, FGDs were more suitable since they allow for a discussion about the topic at hand among the participants. For the qualitative tool, questions that had a yes/no answer were followed by probes to elicit much more information in detail. We used an expansive approach whereby the interview guide starts with closed-ended questions followed by open-ended questions. The interview guide for patients has also been translated into Urdu for patients who cannot speak and/or comprehend English.

Phase 2 (Delphi method and conference of experts)

Purposive (judgement) non-probability sampling will be used to enrol leaders from four distinct categories (PGME Leadership/Programme Directors, Department of Educational Development (DED), National Medical Education Experts and Section Heads). Due to the strategic construct of Conference of Experts (C-of-E), only relevant experts in the field shall be contacted and invited after a rigorous vetting process. They will be randomised into multiple groups, such that there is an equal number of experts from each category in each group and the minimum number of experts from each category has been pre-decided as 5.

Sample selection

Inclusion criteria

Phases 1 and 4

- Faculty—Attending full-time physicians registered with the PMC and currently working at the AKU at a position of *Senior Instructor or above* (at the time of the commencement of the study). They must also have

been affiliated with the respective department for a bare minimum of 3 months.
- Fellows—Trainees registered with the PMC who have completed a full residency programme (either at the AKU or outside) and have completed at least 1 year of fellowship. Completion of Fellow of College of Physicians and Surgeons Pakistan (FCPS) Parts 1 and 2 and completion of year-wise requirements of the PMC and FCPS bodies are also mandatory. They must also have been affiliated with the respective department for a bare minimum of 3 months.
- Residents—Trainees who are currently enrolled in a residency programme (Years 1–4) at the AKU and have completed at least 3 months of residency before their enrolment in the study. Completion of FCPS Parts 1 (for all residents) and completion of year-wise requirements (for senior residents) of the PMC and FCPS bodies are also mandatory.
- Medical students—Students who are currently enrolled in a 5-year MBBS programme at the AKU and have completed at least 3 years of medical education before their enrolment in the study. They must also have rotated with the respective department for a bare minimum of 4 weeks/1 month. These rotations must have been in the last 6 months.
- Nursing staff—Nurses who have been present for at least 6 months in various departments; who are at the senior staff level and have the chance to interact with residents on a daily basis.
- Patients—Inpatients admitted for at least 48 hours and outpatients with at least two follow-up visits. First-degree relatives of the patients can also be contacted. Those who can speak and understand English and/or Urdu will be approached.
- Attendings, fellows, residents and nurses from the specialties of Surgery, Medicine, Obstetrics and Gynaecology, Family Medicine and Paediatrics will be included. Similarly, medical students rotating in these specialties and patients admitted in outpatient and inpatient settings in these departments will be included. The aforementioned specialties were chosen to keep in mind the high number of residents and medical students who rotate in these departments along with the high patient load. They also happen to be the top residency programmes requiring meticulous communication skills.

Phases 2 and 3

For the recruitment and subsequent enrolment of faculty in the C-of-E, the following inclusion criteria have been pre-defined for each category:
- DED faculty members: The faculty member must be a PMC accredited educationist currently working at the AKU, with a minimum working experience of 3 years in academia and education.
- National medical education experts: A list of nominated faculty members from the Department of Education will be obtained.
- PGME leadership: The faculty member must be a PMC accredited physician currently working at the AKU, with a minimum total working experience of 5 years and must be a current Programme Director, Associate Programme Director, Programme Coordinator and Associate Dean—PGME (a position that they must have held for ≥1 year).
- Section heads: The faculty member must be a PMC accredited physician currently working at the AKU, with a minimum total working experience of 5 years, and must be a current section head within a department (a position that they must have held for ≥6 months).
- International medical education experts who have prior experience and involvement in communication skills training curricula.

Phase 4

Phase 4a

This phase will involve the research team's collaboration with the PGME Department in successfully implementing the curriculum across various residency programmes at our institution. Our targeted training interventions will be disseminated via a hybrid approach including online learning and in-person training sessions for effective implementation.

Phase 4b

Following the implementation of the curriculum, its effectiveness will be assessed in a longitudinal and continuous fashion using Objective Structured Clinical Examinations, etc.

Phase 5

After successful implementation and evaluation of the curriculum at the AKU, if found effective, the curriculum will be disseminated across various training programmes at the national level. This will be achieved in collaboration with our Department of Education with the national governing body overlooking PGME and professional development in Pakistan (College of Physicians and Surgeons Pakistan).

Exclusion criteria

Phase 1

- Faculty members who are working as clinical lecturers and/or part-time physicians.
- Fellow trainees who are involved in specific specialties which have limited/minimal interaction with residents.
- Medical students who may have completed 3 years of medical education but have not completed their rotation with a specific department or have not failed to pass that rotation.

Phases 2 and 3:

- PGME leadership/section heads who are working as clinical lecturers and/or part-time physicians.

- PGME leadership/section heads who are involved in specific specialties which have limited/minimal interaction with residents.

Data collection

FGDs will be conducted in person and keynotes will also be taken during this time. Surveys will be administered through a centralised email address designated for the study to all the participants. Hardcopies of the forms will be given to patients in outpatient and inpatient settings.

Data analysis

Data analysis for this study will be primarily carried out using a mixed-methods approach. Quantitative data will be analysed using the software Stata (V.16). For quantitative data, repeated measures analysis of variance will be used. Values of p less than 0.05 will be considered statistically significant. Qualitative data will be analysed using NVivo and thematic analysis will be conducted by two independent members of the research team. For triangulation, the qualitative findings will be compared with the quantitative findings from the survey and previous literature on communication skills training curriculums to describe the results in a holistic manner.

Patient and public involvement

Patients or the public were not involved in the design, conduct, reporting or dissemination plans of our research.

Operational leadership

The leadership team will consist of the Programme Directors, University and Hospital leadership. Three groups will handle the overall programme administration and monitoring: (1) Programme Managing Committee, (2) Programme Advisory Committee and (3) Research Committee. The Programme Managing Committee has been formulated to develop a synergistic, multidisciplinary team programme that will focus on the implementation and achievement of programmatic goals (see figure 3).

Figure 3 Operational leadership and team structure. PGME, Postgraduate Medical Education.

ETHICS AND DISSEMINATION

Ethical considerations

The study has received ethical approval from the Ethical Review Committee (ERC) at the AKU, Karachi (2021-6041-17126). Since this is an observational study, it will require informed consent that will be considered mandatory for participants to be eligible for the study. In the consent form, all aspects of the study will be clearly stated for the participants, and only, if they consent, will they be included in the study. The consent form also contains details about the option to withdraw at any point in the study. Furthermore, to protect the identity and personal details of participants at all points during the study, each participant will be assigned a de-identified ID number. Only the research team will have access to data collected as a byproduct of the above modalities. Filled consent and questionnaire forms will be automatically stored in an online password-encrypted Excel file, behind a firewall-protected server. Access to this data will only be shared with members of the research team running the data analysis. There are no identifiable risks associated with the participation of physicians and patients in this study. An incentive for participation in the FGDs will be provided in terms of food and has been approved by the ERC. Should there be evidence of any emergent or existing risks after the protocol has got the ERC approval, the ERC shall be informed completely, duly and immediately.

Dissemination of results

The results will be presented in the form of research manuscripts. In addition to this, the analysis of these findings will serve as a basis for the Delphi consensus and the development of the curriculum for improving the communication skills of residents.

IMPACT STATEMENT—FUTURE DIRECTIONS AND IMPLICATIONS

Through this study, we can develop educational modules and devise educational interventions to create a more holistic postgraduate residency training curriculum at the AKU. This study will deliver groundbreaking knowledge regarding the impact of an innovative communication skills training programme on resident knowledge, attitudes and skills and patient-reported satisfaction. If successful, this programme will be disseminated for implementation across all the postgraduate residency training programmes across Pakistan, thereby affecting the training of thousands of residents each year and the millions of patients they serve.

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Contributors All persons listed as authors met the International Committee of Medical Journal Editors (ICMJE) authorship criteria. All authors have made significant contributions and revisions to the final manuscript and have provided complete assent for publication. Each author is responsible for the content and has read and approved the final manuscript. No author has any conflict of interest and/or disclosure to state for this manuscript. This includes financial, institutional, consultant and other relationships. AH and MT are senior authors who conceived the study. HS conceptualised and designed the protocol. AAN, AAHM, MI, AAK, NQ, NA, IM, KAR and RA contributed to the writing of the introduction, methodology, strengths and limitations. NQ, NA and KAR finalised, formatted and referenced the paper. All authors reviewed and approved the manuscript.

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