Evaluation of an online "Train the Trainers" course for family physicians in Pakistan: Expectations vs reality

Madiha Ata¹, Faridah Amin¹, Shaista Saghir¹, Shafaq Sultana², Muhammad Imran¹, Salima Mehdi¹

¹Department of Family Medicine, Indus College of Family Medicine and Public Health, Karachi, Sindh, Pakistan, ²Department of HPE, Indus University of Health Sciences, Karachi, Sindh, Pakistan

Abstract

Aim: Pakistan is in dire need of trained family physicians to enhance the quality of primary health care. To build capacity, there is a need to train the trainers on a large scale through a feasible and accessible program. Therefore, for the first time, a three-month online course was designed and piloted, in collaboration with national and international family medicine faculty. The aim of this study was to determine the gap between the pre-course expectations and the post-program perceptions of the participants for* a unique family medicine "Train the Trainers" course. **Methods:** A longitudinal-observational study was conducted at a private college of Karachi after approval from the Institutional Review Board. The expectations and perceptions of all (31) participants were recorded through a pre- and post-course questionnaire. Data were analyzed through descriptive and analytical statistics on SPSS-26. The responses to the open-ended questions were analyzed by content analytical approach. **Results:** Out of 20 quantitative items on the questionnaire, four were associated with a positive gap between the expectations and perceptions. One item showed a negative gap, while the rest did not show any significant difference. The majority of the participants expressed that they expected to see an improvement in their teaching skills because of the online course. **Conclusion:** The online course was successful in meeting the participants' expectations. The course delivery can be revisited to further improve its quality according to the participant's feedback, including an opportunity to ask questions and incorporating some face-to-face sessions.

Keywords: Capacity building, family medicine training, online education, train the trainers

Introduction

Pakistan is a developing country with unacceptable health indicators and slow progress toward Universal Health Coverage (UHC) goals.[1] Enhancing the quality of primary healthcare (PHC) through a family medicine approach is an efficient and cost-effective intervention to improve health indicators.[2] To achieve this, there is a need to upscale capacity building in family medicine and train family medicine trainers who are residing within the locality to train general practitioners. With a handful of experts and trainers in Pakistan, especially in rural localities, the mode of training should be flexible, accessible, and on-job. Interestingly, during the COVID era online education emerged as a promising mode to improve the feasibility of teaching and training, hence now being used in all fields of education.[3]

With its advantages, there are challenges of online education that trainers and trainees must navigate through. Technical issues, such as poor internet connection, outdated software, and lacking computer literacy, can disrupt the teaching and learning process. Managing interaction, time management, student motivation,

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adaptability, conducting assessments, and maintaining equity are also key challenges.[4] Moreover, teaching and learning of skills online, being done for a long through interactive face-to-face encounter, seems like an intimidating prospect for the traditional trainer.[5]

However, a large number of skill-based courses are presently being conducted through purely online and blended models.[6] The key to executing these courses successfully is to modify the objectives, teaching strategies, and assessment to better suit the online environment. Well-planned online courses are likely to achieve the desired results and also attract more participants due to the advantages of being flexible and self-paced.[7] However, the success of such courses may be dependent on the trainee's mindset, expectations, and ability to cope with an online teaching program, hence the need to evaluate its utility in the local context.

Keeping in view the need and the challenges, an online "Train the Trainers" course was designed by the Advisory Board of Indus College of Family Medicine and Public Health (ICFMPH) in collaboration with the Department of Health Professions Education (HPE). This program brought together national and international family medicine and HPE trainers to develop teaching skills among physician trainers to teach other physicians. The course was purposefully designed to be completely online, to maximize the reach to trainers throughout the country.

To the best of our knowledge, this is the first online "Train the Trainers" program of this genre in Pakistan for the development of a Family Medicine specialty in the country for primary care. This is a pilot project with a vision to upscale it to a national level, to meet the need of family medicine trainers in all parts of the country. There was a need to critically evaluate the program, as the results of this study would help to identify the gap between the pre-course expectations versus the participants' perception about fulfillment of their expectations after program delivery.[8]

With this background, the study aimed to identify the gap between expectation and reality for modifications later on to make it more acceptable, accessible, sustainable, and efficient.[9] Therefore, the objective of this study was to evaluate the "expectations" of the participants' pre-program and their "perception" regarding their expectations being fulfilled after the course.

Methods

This was a longitudinal observational study. After approval from the Institutional Review Board, data were collected from February to April 2023. A list of participants enrolled in "Train the Trainers" program was obtained from relevant authorities. All the participants enrolled in the online course were included in the study. An online consent was obtained through email and those who did not give consent were excluded. The data were gathered anonymously. The study was approved by the Institutional Ethics Committee of the institute.

A self-administered pre-course questionnaire was shared with the participants on Red-Cap to record their expectations from the course, before sharing the course outline. The questionnaire had 20 quantitative items for two domains, namely, "learning environment" and "learning experience." Each item was scored using a 5-point Likert scale (4—strongly agree, 3—agree, 2—unsure, 1—disagree, 0—strongly disagree). Additionally, there were two open-ended questions asking for their expectations from the course.[10,11]

After three months, a post-program survey was conducted to record the participants' perceptions regarding the program's quality through a modified version of the pre-course questionnaire. This questionnaire was similar to the pre-course questionnaire but had three open-ended questions inquiring about their experiences in the course.

Statistical analysis

Data were analyzed on SPSS version 26. Mean (SD) was reported for quantitative data and frequency and percentage were reported for categorical variables. Shapiro–Wilk test assessed the normality of data. Paired sample t test determined the difference between pre- and post-course scores. A P value < 0.05 was considered statistically significant.

Responses to open-ended questions were analyzed using content analysis which involved repeatedly reading the data, generating initial codes and developing, refining, and naming broader patterns evident in responses. The codes were finalized by the consensus of three researchers. These data provided greater insight into the expectations and perceptions of the course participants.

Results

The data collection tool showed good internal consistency for the learning environment and learning experience with Cronbach's alpha for the items being 0.89 and 0.90, respectively.

The demographic characteristics of the participants is shown in Table 1 and Figure 1. A comparison of each question regarding learning experience, expectations, and perceptions before and after the course is shown in Tables 2 and 3.

The results showed a significant increase in score for the following perceptions; "asking questions while learning," "presenting thoughts to the class," "presenting thoughts to facilitator" and

Table 1: Baseline Characteristics of Participants

Variables	n (%)
Total	31
Age (mean±SD)	46.62±7.97
Year of Experience [Median (IQR)]	15 (10–22)
Gender	
Male	15 (48.4)
Female	16 (51.6)

Table 2: Comparison of pre and post-program scores for the following question "To make my learning experience better, my expectations from this online course as compared to traditional classroom are"

	Strongly agree	Agree	Not sure	Disagree	Strongly disagree	Mean score	P
Clear learning objectives							
Pre-Course	18 (58.1)	13 (41.9)	0	0	0	3.58 (0.50)	0.500[a]
Post-Course	15 (48.4)	16 (51.6)	0	0	0	3.48 (0.50)	
Detailed Course outline							
Pre-Course	19 (61.3)	12 (38.7)	0	0	0	3.61 (0.49)	0.057[¤]
Post-Course	11 (35.5)	19 (61.3)	0	1 (3.2)	0	3.29 (0.64)	
Asking questions while learning							
Pre-Course	13 (41.9)	15 (48.4)	1 (3.2)	2 (6.5)	0	3.25 (0.81)	0.004[a*]
Post-Course	23 (74.2)	8 (25.8)	0	0	0	3.74 (0.44)	
Presenting thoughts to the class							
Pre-Course	11 (35.5)	16 (51.6)	4 (12.9)	0	0	3.22 (0.66)	0.016[a*]
Post-Course	18 (58.1)	12 (38.7)	1 (3.2)	0	0	3.54 (0.56)	
Presenting thoughts to the facilitator							
Pre-Course	12 (38.7)	15 (48.4)	4 (12.9)	0	0	3.25 (0.68)	0.043[a*]
Post-Course	17 (54.8)	13 (41.9)	1 (3.2)	0	0	3.51 (0.57)	
Practicing problem-solving							
Pre-Course	16 (51.6)	15 (48.4)	0	0	0	3.51 (0.50)	0.476[a]
Post-Course	15 (48.4)	14 (45.2)	2 (6.5)	0	0	3.41 (0.62)	
Engaging assignment							
Pre-Course	10 (32.3)	19 (61.3)	2 (6.5)	0	0	3.25 (0.57)	0.161[a]
Post-Course	16 (51.6)	13 (41.9)	2 (6.5)	0	0	3.45 (0.62)	
Timely feedback from facilitator							
Pre-Course	15 (48.4)	15 (48.4)	1 (3.2)	0	0	3.45 (0.56)	0.374[a]
Post-Course	18 (58.1)	12 (38.7)	1 (3.2)	0	0	3.54 (0.56)	
Timely feedback on assignment							
Pre-Course	19 (61.3)	11 (35.5)	1 (3.2)	0	0	3.58 (0.56)	0.001[a*]
Post-Course	10 (32.3)	14 (45.2)	2 (6.5)	5 (16.1)	0	2.93 (1.03)	
Formative assessment							
Pre-Course	12 (38.7)	16 (51.6)	3 (9.7)	0	0	3.29 (0.64)	0.407[a]
Post-Course	11 (35.5)	15 (48.4)	3 (9.7)	2 (6.5)	0	3.12 (0.84)	

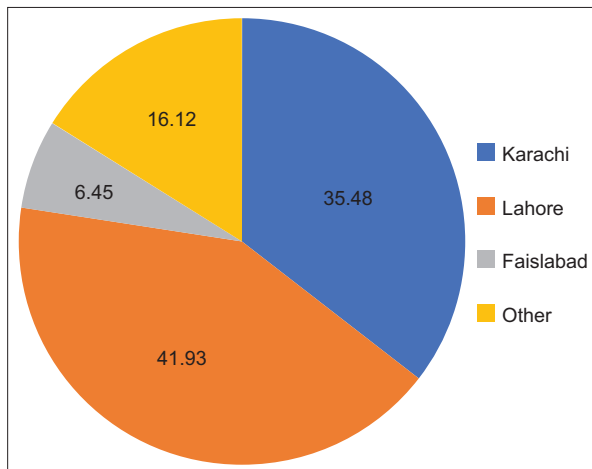[a]Paired Sample *t*-test. *Significant *P*

Figure 1: Distribution of participant location

"complete assignment in due time" after the course. However, there was a significant decrease in the score for "timely feedback on assignment" after the course. For the rest of the questions, there was no difference in the expectations of the participants before the course and their perception about it being met.

The content analysis of the responses to the open-ended questions showed that at the time of joining the course, most of the participants (53%) expressed their expectations to become a better trainer/teacher. These were expressed as "Polish my teaching skills," "Enhance my skills of training," "to become a better trainer," and "have more confidence in my training skills." After the completion of the course, the respondents felt that their expectations were met and that their teaching practices will be improved as a result of attending the course. Some of the responses included "This course helped me a lot in understanding teaching at post-graduation level," "Be more confident in imparting trainings in future," and "this course definitely improved (my) teaching and training skills."

Prior to the course, 26% of participants felt that practical skills such as "conducting assessments," and "practical examination" will be difficult to learn online while 16% expected to find acquiring the soft skills challenging online. The anticipated difficulty in learning to conduct assessments was reflected in the post-course perceptions as well. When asked which skills did they find most difficult to master online the participants reported "conducting Mini-CEX and DOPS," "OSCE preparation," "Work

Table 3: Comparison of pre- and post-program scores for the following question "I expect that in comparison to traditional classroom, this web-based course should enable me to"							
	Strongly agree	Agree	Not sure	Disagree	Strongly disagree	Mean score	*P*
Be actively involved in the learning process							
Pre-Course	16 (51.6)	11 (35.5)	4 (12.9)	0	0	3.38 (0.71)	0.861[a]
Post-Course	16 (51.6)	10 (32.3)	5 (16.1)	0	0	3.35 (0.75)	
Address my questions and concern							
Pre-Course	15 (48.4)	15 (48.4)	1 (3.2)	0	0	3.45 (0.56)	0.625[a]
Post-Course	16 (51.6)	15 (48.4)	0	0	0	3.51 (0.50)	
Voice my opinion and viewpoints							
Pre-Course	13 (41.9)	14 (45.2)	4 (12.9)	0	0	3.29 (0.69)	0.258[a]
Post-Course	14 (45.2)	17 (54.8)	0	0	0	3.45 (0.50)	
Understand the course material							
Pre-Course	18 (58.1)	11 (35.5)	2 (6.5)	0	0	3.51 (0.62)	0.073[a]
Post-Course	8 (25.8)	23 (74.2)	0	0	0	3.25 (0.44)	
Stimulate my interest in the subject							
Pre-Course	19 (61.3)	10 (32.3)	2 (6.5)	0	0	3.54 (0.62)	0.129[a]
Post-Course	12 (38.7)	17 (54.8)	2 (6.5)	0	0	3.32 (0.59)	
Relate the subject matter to other areas							
Pre-Course	10 (33.3)	16 (51.6)	4 (12.9)	0	0	3.20 (0.66)	0.677[a]
Post-Course	11 (35.5)	16 (51.6)	4 (12.9)	0	0	3.26 (0.64)	
Put effort into nonassessed work							
Pre-Course	9 (29.0)	16 (51.6)	6 (19.4)	0	0	3.09 (0.70)	0.745[a]
Post-Course	10 (32.3)	12 (38.7)	9 (29.0)	0	0	3.03 (0.79)	
Control when and where to learn							
Pre-Course	12 (38.7)	16 (51.6)	3 (9.7)	0	0	3.29 (0.64)	0.129[a]
Post-Course	7 (22.6)	19 (61.3)	5 (16.1)	0	0	3.06 (0.62)	
Learn the materials in less time							
Pre-Course	12 (38.7)	14 (45.2)	4 (12.9)	1 (3.2)	0	3.19 (0.79)	0.500[a]
Post-Course	8 (25.8)	19 (61.3)	3 (9.7)	1 (3.2)	0	3.09 (0.70)	
Complete assignment in due time							
Pre-Course	7 (22.6)	10 (32.3)	9 (29.0)	4 (12.9)	0	2.66 (0.99)	0.018[a]*
Post-Course	9 (29.0)	20 (64.5)	1 (3.2)	1 (3.2)	0	3.20 (0.66)	
Use written communication in learning							
Pre-Course	7 (22.6)	16 (51.6)	8 (25.8)	0	0	2.96 (0.70)	0.677[a]
Post-Course	8 (25.8)	16 (51.6)	7 (22.6)	0	0	3.03 (0.70)	

[a]Paired Sample *t*-test. *Significant *P*

place-based assessment needs to be practically demonstrated" and "MCQ building." At the completion of the course, however, 26% of participants reported that none of the components was difficult to master online. One participant responded "I think it's equally effective as physical and more convenient with job" while another suggested "overall it fulfills its all objectives."

Moreover, content analysis of the participants perceptions regarding anticipated changes in their practices after the course revealed that 33% of participants perceived an overall improvement in their professionalism/leadership qualities. This was expressed as "(I) Can arrange and lead academic activities," "lead my juniors by example," "improve in both professionals and leadership capabilities," and "be more confident in exhibiting professionalism at work."

Discussion

"Train the Trainers" was a unique program for preparing family medicine trainers to build capacity for specialty and primary care. The aim of the program was to reach potential trainers throughout the country, regardless of their geographical location, hence the online mode of delivery. However, the fact that the program objectives were largely skill-based raised concerns about its successful delivery through the relatively new online teaching pedagogy.

This study examined the effectiveness of a three-month online course in meeting the expectations of the participants. The quantitative results showed that there were statistical differences in only four items between the participants' expectations and post-program perceptions, thus reflecting that the online program met the participants' expectations in the majority of the fields. Through the qualitative analysis of the open-ended questions, it was concluded that most participants expected to see an improvement in their training skills as a result of attending this course.

Our sample had 48.4% males and 51.6% females, this representation could prevent gender from affecting the study's

results as previous research found gender differences in perceptions.[12,13]

Most participants were from two big cities in Pakistan, namely, Lahore and Karachi, but a few belonged to smaller ones. This supports the program's vision to reach trainers in remote parts of the country to equip them with the skills required for training the family practitioners.

The pre-course "expectations" and the post-course "perceptions" showed statistically significant differences in a few domains. This implies that the online course largely met the expectations of the participants. The expectations were explored in comparison with the traditional classroom keeping in view the characteristics and needs of the adult learners who prefer a self-directed approach to learning and value clearly defined course outlines and objectives.[14] All participants expressed either strong agreement or agreement with the course meeting these expectations.

We found that the items related to the free expression of thoughts showed a statistically significant difference in terms of expectations and experience. The participants' perceptions exceeded their expectations for "expressing thoughts to the class" and "expressing thoughts to the facilitator." Since learner's interactions have a significant impact on their satisfaction with the learning experience as well as their academic achievement, this is a strong indicator of the success of the program.[15,16]

The experience of the participants in terms of asking questions during the sessions also exceeded their expectations. However, this is an established limitation of online teaching attributed mainly to the lack of self-confidence.[17-19] The fact that this course overcame this limitation is evidence of its effectiveness as an online course.

In this study, the participants had a lower expectation of being able to complete their assignments on time than the actual experience. This may be attributed to the flexible and online nature of the given assignments which suits the characteristics of adult learners who are self-directed and intrinsically motivated.[20] Also, the allocation of assignments in groups may also have contributed to the timely submission beyond their expectations.[21] However, the participants had a higher expectation of "receiving timely feedback on their assignments" than their experience. As feedback plays a crucial role in fostering independent learning and is an important factor in influencing learners' success, these negative perceptions can impact the overall successful learning cycle for the participants.[22]

The responses to the open-ended questions showed that pre-course the participants expected it to improve their teaching skills in general and soft skills and assessment skills in particular. While some of the participants did not expect to have any difficulty in the online mode of teaching, few thought that mastering practical and soft skills might prove difficult online. Studies show that adult learners anticipate difficulties in online learning due to self-perception of inefficiency in the use of technology.[23] However, the post-course survey revealed that a large number of the participants were satisfied with the course in teaching them soft skills and practical skills. This is a pertinent finding, as soft skills are an important part of the global competency framework of doctors and only the trainers with well-developed skills can be expected to transfer them to their trainees.[24] The participants viewed learning these skills online as difficult but not impossible; this supports the need to continue such programs, yet improvise them to address the challenges to optimize the learning experience for the participants.[25]

Limitation

Although this was a unique learning program with overall positive outcomes, yet there were certain limitations of this study. Due to the unavailability of a validated tool, we assessed participants' perceptions through a self-developed questionnaire. Though the inter-rater reliability was acceptable yet, this tool should have been further validated for better reliability of results.

We did not assess the baseline computer literacy of participants for this online teaching program which could have negatively affected the expectations versus reality of learning. However, the experience regarding "presenting thoughts" and "asking questions" during sessions exceeded participants' expectations, which may mean that computer literacy was not a barrier in learning.

Lastly, although all participants in the group consented to participate, yet a small sample size without much geographical variability may affect the generalizability of results.

Conclusion

The participants of this course are expected to train general practitioners from all over Pakistan. Their knowledge and expertise in various teaching and assessment modalities will prove useful in keeping other adult learners engaged and in conducting valid and reliable assessments. Only with competent trainers can the trainees be expected to reach the adequate level of mastery to fill in the gap in the primary healthcare system of the country.[26] So, the positive perceptions of our participants in this regard can be taken as an indicator of the efficacy of this program in achieving these goals.

The course is still in its infantile stages and will continue to evolve with each cycle. The findings of this study can be used to make amendments to the admission criteria to make it more inclusive. The study also highlights the need for the review of the curriculum to focus on aligning the learning outcomes, the teaching methodologies, and the subsequent assessment. Moreover, the learning activities can be modified to be more learner-centered by including innovative online teaching strategies to make the course more effective.

Conflicts of interest

There are no conflicts of interest.

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