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Training Report

Training Workshop on "Basics of Research" for Undergraduate Healthcare Students: Participants' Feedback

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ABSTRACT:

Background and Objectives: The training workshop on the basics of research is vital to inculcate research skills among novice undergraduate medical students. For this purpose, Bilawal Medical College, Jamshoro, Sindh, Pakistan, organised a one-day training workshop. Assessing the feedback of the participant students is critical for better organization of such training workshops in future.

Materials and Methods: This descriptive cross-sectional study was conducted in August 2025. The objectives of this study were to 1) report a brief account of the Training Workshop and 2) assess the feedback of the participants. A valid self-administered questionnaire was used for the feedback. The data was analyzed using SPSS version 23.

Results: The perceived level of knowledge and understanding of participants regarding "Research", "Primary and Secondary Research", "Quantitative and Qualitative Research", "Research Study Designs", and "Steps for Conducting Research" has significantly ($p<0.05$) enhanced after participation.

Conclusion: Participants' perceived reaction to attributes of the workshop and group work session was positive. The training workshop enhanced research capacity perceived by the participant students.

Keywords: Basics of research, feedback, training workshop, undergraduate medical students

INTRODUCTION

Undergraduate medical students have revealed a low confidence in all basic research skills; it is documented in the literature [1]. For inculcating research skills among undergraduate medical students, training on the basics of research is essential. This is to ensure that future clinicians become competent researchers and do evidence-based practice [1,2]. Learning basic research skills promotes students' critical thinking skills [3,4] and encouraged them to pursue research and get involved in the research projects [5,6]. Practical teaching pertaining to research and its methods at the undergraduate students' level is random in Pakistan [3].

To train undergraduate medical students, Bilawal Medical College (BMC), Liaquat University of Medical and Health Sciences (LUMHS), Jamshoro, Sindh, Pakistan organized a one-day "Training Workshop on Basics of Research". The objectives of this study were to: 1) document a brief account of the training workshop and 2) assess the feedback of the participant students.

MATERIALS AND METHODS

This is a descriptive cross-sectional study conducted at Bilawal Medical College (BMC), Liaquat University of Medical and Health Sciences (LUMHS), Jamshoro Sindh, Pakistan. The key objectives of this study were to 1) report a brief account of the 'Training Workshop on Basics of Research' for Undergraduate Students of Healthcare and 2) assess the feedback of the participant undergraduate medical students who participated in the training workshop.

Objective Number 1 of the study

Brief Account of the "Training Workshop on Basics of Research" for Undergraduate Students of Healthcare: A one-day Training Workshop on Basics of Research for Undergraduate Students of Healthcare (a pre-conference workshop of Medical Undergraduate Research Conference -MURC-2025) was organized by the Medical Education Department of BMC, LUMHS, Jamshoro, Sindh on Tuesday August 12, 2025. It was held at the Medical Education Hall of BMC.

The topics covered in interactive tutorial of training workshop were: 1) Overview on research, 2) Primary and Secondary Research, 3) Quantitative and Qualitative Research, and Research Study Designs, and 4) Steps for Conducting Research

Twenty-nine students from different years studying MBBS at BMC participated in the training workshop. Participants were invited by academic year for registration of participation against 30 allocated seats on first come first register basis. Thirty participants registered themselves; one couldn't turn up. The principal author was the main resource person who facilitated the training workshop and the second, third and fourth authors co-facilitated the workshop, especially group work.

Process of Group Work Practice

Participants were divided in six groups on simple random basis. The task steps were; identify the problem, find out the gap, write research question, write hypothesis, and choose the study design for research. The time allocated for group work was 30 minutes and for group work presentation 30 minutes (5 minutes for each group presentation).

Objective Number 2 of the study

Assessment of the feedback of the participant students participated in Training Workshop: The written feedback was taken from the participants utilizing a validated questionnaire after taking informed consent from the participants. The feedback questionnaire was comprised of three parts:

First Part- Rating of the Participants on attributes of training workshop

This part contained one question, i.e. "rating training workshop" on a scale of 1 to 10 (1=poor; 10=excellent) for usefulness, content, relevance, delivery, facilitation and overall.

Second Part- Rating of the Participants on the practice session (group work) conducted in the training workshop

This part contained just one question rating the practice session (group work) of a training workshop on scale 1 to 10 (1=poor; 10=excellent).

Third Part- Feedback of the participants on the Level of Knowledge and Understanding after participation in training workshop

This part contained a retro-pre-questionnaire having five questions on the level of knowledge and understanding before and after participation on five related statements at Likert scale 1 to 4 (1=little; 4=very-good). The questions were level of knowledge and understanding regarding "Research"; "Primary and Secondary Research"; "Quantitative and Qualitative Research; Research Study Designs"; and "Steps for Conducting Research"

As the data of retro-pre-questionnaire was distributed normally, a paired-samples t-test was used for comparing the means of the responses of the participants on five statements of retro-pre questions before and after participating in the training workshop. Shapiro-Wilk test was used to test for normality of the retro-pre score differences. Ethical Approval was taken (No: BMC/Principal/2025/1139, dated August 11, 2025), and informed consent was obtained from the participating students.

RESULTS

The calculated Cronbach's Alpha of a 5-item retro pre Likert scale questions based on the standardized items for the reliability of the self-administered questionnaire was 0.868, the good reliability value. Out of 29 participated students, 25 consented and filled the feedback questionnaire. The response rate was 86.2%. The rating of the participant students on attributes of "Training Workshop on Basics of Research" for Undergraduate Students of Healthcare is mentioned in Table 1.

Table 1. Rating of the participating students on attributes of "Training Workshop on Basics of Research" for Undergraduate Students of Healthcare

Attribute	Score
Usefulness (1-10)	7.80 ±1.27
Content (1-10)	8.12 ±1.33
Relevance and delivery of content (1-10)	8.76 ±1.42
Facilitation (1-10)	8.76 ±1.59
Overall (1-10)	8.04 ±1.51

The level of knowledge and understanding before and after participation in the "Training Workshop on Basics of Research" for Undergraduate Students of Healthcare is documented in Table 2.

Table 2. Level of knowledge and understanding before and after participation in "Training Workshop on Basics of Research" for Undergraduate Students of Healthcare

Statement regarding knowledge item	Before participation	After participation	p-value
"Research" (Likert 1-4)	1.44±0.65	2.84±0.47	< 0.05
"Primary and Secondary Research" (Likert 1-4)	1.28±0.54	3.20±0.82	< 0.05
"Quantitative and Qualitative Research" (Likert 1-4)	1.48±0.71	3.04±0.84	< 0.05
"Research Study Designs" (Likert 1-4)	1.32±0.56	2.88±0.78	< 0.05
"Steps for Conducting Research" (Likert 1-4)	1.24±0.52	3.04±0.73	< 0.05

Rating on the "Group-work Session" conducted in training workshop on the scale 1-10 (1 poor, 10 Excellent) was 7.52±1.64; the rating was remarkable.

DISCUSSION

Enhancement of the research capacity of undergraduate medical students is one of the main aims of medical colleges nowadays. Research training on the basics of research for conducting research during the undergraduate medical education study period is essential for understanding medical literature, research methodology, data interpretation, and appraising scientific studies critically [7].

For this purpose, the "Training Workshop on Basics of Research" for undergraduate students of healthcare was organized and conducted. The brief account of the training workshop has been documented in the methodology section of this study.

The second objective of this study was to assess the feedback of the participant students which is critical for organizing such training workshops better in future [8]. The rating of the participants on the attributes of this training workshop i.e, usefulness, contents, relevance and delivery of content, facilitation, and overall was remarkable. The rating of the participants of our study on the "Group Work Session" was also remarkable 7.52±1.64 (1 poor, 10 Excellent). This finding is consistent with the findings of the African study "Training and assessing undergraduate medical students' research: Learning, engagement and experiences of students and staff" conducted by Mahomed S et al; more than 81% of students stated that group work helped them learn more and provided a safe learning space [2].

The level of knowledge and understanding of participants about “Research”, “Primary and Secondary Research”, “Quantitative and Qualitative Research”, “Research Study Designs”, and “Steps for Conducting Research” after participation in the training workshop was enhanced significantly (p value<0.05). Undergraduate medical student participants of a research methodology workshop conducted at the University of Alexandria, Egypt revealed high levels of satisfaction and gain from the workshop. The workshop was enjoyable, beneficial and valuable. Twenty-seven students attended the workshop; the sample size was nearly equal to our training workshop. The cross-sectional study design was used by researchers at the University of Alexandria, Egypt; the same as that of our study [9]. The undergraduate student participants of an online training program to enhance novice researchers’ knowledge and skills documented that the training content and format were appropriate in providing basic research knowledge and skills. The difference was that they conducted a pretest-posttest to assess students’ perceived gain in knowledge and skills, but we used retro-pre questions. The sample size was quite larger than ours [10]. Such a type of training workshop may motivate students and increase their engagement in scholarly activities. The findings of this study cannot be generalized as this study was conducted in one institute, sample size was less and sample was purposive. The data is based on the perceptions of the participants. The retro-pre questions were used rather than a pretest-posttest format, that me be one of the limitations of this study. However, such training workshops improve the research self-efficacy of individual undergraduate medical student.

CONCLUSIONS

Perceptions of participant undergraduate students of "Training Workshops on Basics of Research regarding attributes of the training workshop (usefulness, content, relevance and delivery of content, facilitation, and overall) and group work sessions were remarkable. Also, participants perceived that their level of knowledge of understanding with respect to “Research”, “Primary and Secondary Research”, “Quantitative and Qualitative Research”, “Research Study Designs”, and “Steps for Conducting Research” has improved significantly. Research training workshops facilitate learning in research skills and make the undergraduate students competent in understanding and conducting research, thereby improving critical thinking and analytical skills of students. The trained students may use their research skills later in their career.

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AUTHOR’S CONTRIBUTIONS

Concept-**RMP, SB;** study design- **RMP, NZ;** data collection: All authors; statistical analysis**- RMP, SB;** writing of the manuscript, editing of the manuscript- **RMP, ZPB, NZ, SB.** All authors reviewed and finalized the manuscript and approved the final version for publication.

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