

# Change in Knowledge and Perceptions about Primary Health Care in First Professional MBBS Students of Rehman Medical College, Peshawar after Visiting a Model Basic Health Unit

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**ABSTRACT**

**Introduction:** Inadequate attention is paid to Primary Health Care (PHC) in the MBBS curricula of Pakistan. At Rehman Medical College (RMC), Peshawar, an early interaction of undergraduates with a Basic Health Unit (BHU) is implemented to develop an understanding and interest in PHC that can be built upon in senior professional MBBS years.

**Objective:** To assess the effectiveness of a planned curricular visit to a model BHU in changing knowledge and perceptions about Primary Health Care in First Professional MBBS students of Rehman Medical College (RMC), Peshawar.

**Materials & Methods:** The study was conducted in the Department of Community Medicine, RMC in November 2016 on 96 newly admitted First Year MBBS students, by having them visit a model BHU in the department for a one-hour curricular session. Written Pre and Post tests were conducted to assess knowledge and perceptions of students about PHC; changes in responses were assessed by descriptive data analysis using SPSS 15.0; paired samples T-test was used to compare responses, keeping  $p \leq 0.05$  as significant.

**Results:** The mean ages of 52(54.2%) males and 44(45.8%) females were  $18.85 \pm 0.94$  years. Most students did not have parents/relatives in the medical profession, nor had any close contacts or themselves interacted with a BHU. Results of Pre and Post tests showed significant improvements in performance for 9/10 (90%) test items (most  $p$  values  $< 0.001$ ), with no appreciable gender differences.

**Conclusion:** Visit to a model BHU markedly improved the knowledge and perceptions of first professional MBBS students about Primary Health Care.

**Keywords:** Primary Health Care; Basic Health Unit; Immunization; Maternal & Child Health; Students, Medical; Medical Curriculum.

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**INTRODUCTION**

Primary healthcare (PHC) has been defined as, "A set of universally accessible first-level services that promote health, prevent disease, and provide diagnostic, curative, rehabilitative, supportive and palliative services".<sup>1</sup> Primary health care is comprehensive health care accessible and acceptable to all individuals and families in a community. This care is essential and ranges from promotion and prevention to treatment and palliative care.<sup>2</sup> The generic structure of PHC not only includes health initiatives at first level health facilities, but also selective health care package for low income populations.<sup>3</sup> Provision of health facilities to such grass root level involves multi-sectorial involvement. A greater systemic emphasis on primary healthcare can be expected to improve health outcomes.<sup>4</sup>

The health system responds to needs of low income community through setting up of Basic Health Units (BHUs). A BHU is an extensive outreach program catering for the health needs of about 5000 -10000 population. It is headed by a medical officer, dispenser, a lady health visitor, midwives and health technicians. They provide preventive services like EPI vaccination, family planning, antenatal and postnatal care, and health promotive services like awareness and health education regarding endemic diseases and mental health.

They are also involved in secondary prevention, early diagnosis and prompt treatment of endemic and local diseases and provision of essential drugs.<sup>5</sup> In Pakistan, the health condition of general population is not up to the mark; three tiers of health system are well defined but, but due to governmental inattention along with lack of amenities and equipment, the goals for comprehensive health coverage are not achieved.

A relative lack of PHC centers and primary care physicians is well recognized in the country.<sup>6</sup>

For improvement of general health status of Pakistan, PHC looks more and more like a smart way to get health development back on tract.<sup>7</sup> In this matter, medical students are the most important asset, as their knowledge about PHC and its implementation in career choices also impact health policy regarding human resource management.<sup>8</sup>

Current education policies stress a focus on community based medical education (CBME), as this will not only make medical students aware about PHC conditions, but will help them to reflect on strategies to solve these problems in the field. Being important stakeholders, their interaction with patients at BHU level increases their professionalism and also their ability to better opt for specializations after undergraduate education.<sup>9,10</sup>

There is a dearth of literature on this topic especially in our part of world. PHC is part of the undergraduate medical curriculum in Pakistan but the knowledge of students about this important health initiative has not been adequately assessed. Hence, there is a need for studies to explore medical students' knowledge of PHC which can be a positive influence on their decisions to pursue careers in family medicine.

As first year medical students are naïve, exposing them early to ground realities can distort their concept of PHC, because of the insufficiencies mentioned above. Hence, a model BHU is set up as part of community medicine curriculum for first year MBBS students at Rehman Medical College, Peshawar. There is dearth of studies on model BHU rotation and its impact on students.

The objective of this study was to assess the effectiveness of a planned curricular visit to a model BHU in changing knowledge and perceptions about Primary Health Care in First Professional MBBS students of Rehman Medical College (RMC), Peshawar.

## MATERIALS & METHODS

This descriptive study was carried out in November 2016 in Rehman Medical College (RMC), Peshawar on 96 newly inducted first professional MBBS students. A one-hour interactive tour to a Model BHU established in the Department of Community Medicine RMC was arranged, as part of curricular orientation. Approval was obtained from the Rehman Medical Institute Research Ethics Committee (RMI-REC) prior to start of the project.

The students were taken to Model BHU in groups of 25 students / hour on the same day. The Pre Test was administered at Clinical Skills Center, RMC, followed by a 10-minutes presentation in which information regarding PHC and BHU was given to the students. The students were then taken to the Model BHU, divided into sub-groups, and guided to the respective areas for orientation. All were rotated to five different areas viz. Reception / Registration, Medical Officer's room, Antenatal Room, Immunization Room & Pharmacy. Briefing was given at each area by faculty supervisors followed by the respective staff simulators. The rotation was of 08 minutes duration in each area, for a total session of 40 minutes per batch. The same Pre Test was

administered as the Post Test at the end of rotation in the model BHU.

The Test Questionnaire was designed indigenously for recording students' knowledge of PHC; it had 10 questions, 6 related to knowledge of PHC and 4 to BHU structure and function. The questions were scored with differential marks (total 20 marks). The Pre and Post Tests were assessed by the same person to assure uniformity and decrease chances of error. SPSS version 15.0 was used for data analysis; descriptive statistics were derived for both qualitative and quantitative variables; means and SD were derived for continuous numerical data. The Chi Square test and the Paired Samples T test were used to compare differences of frequencies and means respectively, keeping  $p \leq 0.05$  as significant.

## RESULTS

Basic demographic data are shown in Table 1; there were 52(54.2%) males and 44(45.8%) females, of ages 17-22 years (mean age  $18.85 \pm 0.94$  years). Most students (67.7%) did not have either parents or siblings in the medical profession; however almost 65% had a relative in the medical profession. Though 44% students had a BHU near their residence, most students (78.7%) had no personal contact with, or visited a BHU; they had no close contacts in any BHU (91.2%), nor had contact with BHU staff (97.8%).

#	Demographic Variables	Frequency	Percentage
1.	<b>Gender</b>		
	Male	52	54.2
	Female	44	45.8
2.	<b>Ages (years) (n=94)</b>		
	17 – 19	74	78.7
	20 - 22	20	21.3
3.	<b>Parent in medical profession</b>		
	Yes	31	32.3
	No	65	67.7
4.	<b>Sibling in medical profession (n=93)</b>		
	Yes	30	32.3
	No	63	67.7
5.	<b>Relative in medical profession (n=94)</b>		
	Yes	61	64.9
	No	33	35.1
6.	<b>BHU near residence (n=88)</b>		
	Yes	39	44.3
	No	49	55.7
7.	<b>Ever visited a BHU (n=89)</b>		
	Yes	19	21.3
	No	70	78.7
8.	<b>Parents / Siblings / Relatives linked to BHU (n=91)</b>		
	Yes	08	08.8
	No	83	91.2
9.	<b>Contact with BHU staff for any reason (n=91)</b>		
	Yes	02	02.2
	No	89	97.8

Table 2 provides data regarding the Pre and Post BHU visit tests of students. Responses to the ten questions are listed along with the marks obtained, and the total marks of both tests. It is seen that

students did poorly on the Pre Test, and improved significantly on the Post Test; improvement was seen in 9/10 (90%) items based on significant p values.

#	Pre and Post Test Questions	Pre Test Score (Mean ± SD)	Post Test Score (Mean ± SD)	p value
1.	The abbreviations BHU, RHC, EPI, MCH, LHV stand for?	0.66 ± 0.52	1.88 ± 0.57	<0.001
2.	The different components of BHU are?	0.07 ± 0.24	1.65 ± 0.57	<0.001
3.	List three functions of BHU	0.62 ± 0.86	2.54 ± 0.76	<0.001
4.	List three common diseases in Pakistan	0.91 ± 0.46	1.1 ± 0.38	<0.001
5.	List three vaccines included in EPI	0.32 ± 0.79	2.1 ± 0.88	<0.001
6.	Oral Rehydration Solution is given in which childhood condition (select one most important of four listed)	0.88 ± 0.33	0.98 ± 0.14	0.003
7.	In primary care of a wound which of the following prevents a fatal disease (select one out of four listed)?	0.63 ± 0.49	0.66 ± 0.47	0.52
8.	Name the program used for creating health awareness in the communities (select one out of four listed)	0.40 ± 0.49	0.52 ± 0.50	0.027
9.	Name few important functions performed by a doctor in BHU	0.35 ± 0.46	1.5 ± 0.60	<0.001
10.	Name the important services provided by Maternal and Child Health Center at a BHU	0.15 ± 0.33	1.27 ± 0.66	<0.001
Obtained Total Marks (out of 20)		4.94 ± 2.1	14.3 ± 2.2	<0.001

## DISCUSSION

The present study represents perhaps the first-ever study conducted to determine the effectiveness of a planned curricular visit to a model BHU in modifying medical students' knowledge and perceptions of Primary Health Care (PHC) in Pakistan. To some extent it is expected that the basic knowledge of First Professional MBBS students about PHC would not be adequate, but it can also be taken as a reflection of the state of Public Health Awareness of the population; in fact, medical students are expected to know more about health-related areas than the general population. Another aspect of the low importance given to PHC in Pakistan is indicated by the fact that though over 44% of sampled students had BHUs near their homes, only about 21% had ever visited a BHU. It may further reflect the poor use of BHU facilities by the general public, as these are inadequate for all essential health care needs of the public.<sup>5,6</sup> A strong advocacy for revamping the structure and function of BHUs is the need of the hour, so that the public feels that BHUs play essential roles in health care provision by the state.<sup>11</sup>

Based on obtained mean scores, it was seen that students performed slightly better on the six PHC questions compared to the four BHU questions; this is further supported by the fact that though all four (100%) BHU questions scores improved significantly in the Post Test, five out of six (83.3%) PHC questions improved significantly. Though knowledge had been provided to students in briefing prior to BHU visit, yet it was not sufficient to improve their score to the level of PHC scores. This may indicate that public awareness of common health issues can be obtained through media sources, but the BHU remains neglected from information sources.

A study on medical students from four medical colleges conducted in Karachi in 2014 showed a gradual improvement in knowledge of PHC from first to fourth year, with significant year-wise differences in 11/21 items.<sup>9</sup> A similar study showed that there were significant differences between public and private medical college students (significant differences in 7/21 items), with the private students having better knowledge about PHC.<sup>10</sup>

The lack of interest in PHC by medical students in the present study is in sharp contrast to a study on the attitudes of premedical students conducted in the USA,<sup>12</sup> where 91% students thought that Primary Care Physicians make important contributions to medicine, 84% agreed that PHC focuses on the whole patient, and 66% thought that Primary Care Physicians would always have a job. The emphasis on PHC and Public Health Awareness given in the USA is reflected in the choice of careers as Primary Care Physicians and that a lot of importance is given by such advanced nations to the preventive and promotive aspects PHC.

Regarding students' poor knowledge of BHU structure and function, it is not surprising, given that years of neglect to this important public health facility by the government has eroded it from public memory and relegated it to a low-level priority for the rural population;<sup>13,14</sup> recent attempts to reinvigorate this sector by the government through contracting out the facilities have not been successful.<sup>15</sup>

Early contact of medical students with PHC facilities are now encouraged increasingly in most curricula of developed nations.<sup>16</sup> A qualitative study from Sweden<sup>17</sup> provided feedback of students regarding their 10-weeks placement in a PHC program; students

stressed the role of supervisors in achieving their expectations and goals and in enriching their clinical learning experiences.

In Pakistan, the role of PHC and BHUs is only touched upon briefly in the medical curriculum, with an occasional visit to such facilities, meanwhile bogging students down with theoretical workload meant to clear their MBBS exams; thus very few graduates opt for a career in public health. This is in contrast to other developing nations where students actually spend time in rural PHC settings during their undergraduate years through Community Based Education (CBE) medical courses.<sup>18</sup> The effectiveness of such early exposure is well documented in a study from Japan,<sup>19</sup> where a one-day rural PHC exposure of First Year medical students led to significant differences in Pre and Post exposure findings; student interest in rural practice increased from 36% to 60%, and the understanding of roles of PHC physicians increased from 52% to 72%.

A similar result has been reported from Peshawar, Pakistan, where a one-day exposure of first professional MBBS students to a structured community outreach PHC program caused significant changes in knowledge about PHC.<sup>20</sup> Hence, early exposure of

medical students to PHC is preferable, as at this age they are more receptive than in later years, when they are more adapted to tertiary care hospitals.

## CONCLUSION

Early, supervised exposure of medical students to public health facilities through simulated community postings had significant effects on their knowledge and perceptions of public health care.

## LIMITATIONS

Students were briefly exposed to the model BHU and if extended to a full day session, would have achieved better effects. The study was based on immediate post-visit responses of students and does not account for long-term retention of knowledge and perceptions.

## RECOMMENDATIONS

Medical curricula should cater for early practical exposure of medical students to Public Health Care, so that future national health indices are improved through greater adoption of preventive and promotive strategies.

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