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**ORIGINAL ARTICLE****Study of Changes in Knowledge of Primary Health Care among Medical Interns Attending the Community Medicine Posting***Shekhar Padhyegurjar<sup>1\*</sup>, Kiran Makade<sup>2</sup>, Manasi Padhyegurjar<sup>1</sup>, Gladius Jennifer<sup>1</sup>**<sup>1</sup>Department of Community Medicine, Karpaga Vinayaga Institute of Medical Sciences, Madhuranthagam - 603308, (Tamil Nadu) India, <sup>2</sup>Department of Community Medicine, SRM Medical College, SRM University, GST Road, Potheri - 603202, Kancheepurum District, (Tamil Nadu) India***Abstract:**

*Background:* Internship is the best period for acquiring practical knowledge and skills in community medicine to become a successful primary health care physician. Effectiveness of internship has been questioned in many research papers. Internship in India is clinically oriented with inadequate community experience. *Objectives:* This study was conducted among medical interns with the objective of assessing the base line knowledge about application of principles of primary health care and the change in knowledge about the same at the end of the Community Medicine posting. *Methods:* All the interns attending the community medicine posting were included in the study. A structured questionnaire related to principles and elements of primary health care was self administered before and after the Community Medicine posting. Marking system was devised and Wilcoxon Singed rank test, Paired 't' test and Pearson's correlation coefficient were applied wherever appropriate. *Results:* Among 9 questions related to the theory aspect only two showed statistically significant improvement. All the six questions related to practical aspect did not show any significant change. *Conclusion:* Internship training of two months in Community Medicine has failed to create a positive impact on the post test scores, indicating no gain in

knowledge during this period. Framework of internship training, especially in Community Medicine needs to be restructured. Further research needs to be directed to understand the felt needs of the medical interns and reasons for their poor performance.

**Key Words:** Internship, Community Medicine, Effectiveness

**Introduction:**

Internship is the last phase of training of a medical graduate in India. During the four and half years of medical teaching, the theoretical and practical aspects of various subjects are covered. Objective of internship is to train the medical graduates in application of these theoretical aspects in hospital and community settings. It is oriented towards training students to undertake the responsibilities of a first contact physician [1].

The current estimated doctor population ratio in India is 1:1700 as compared to a world average of 1.5: 1000. To address this issue many medical colleges have been opened in India in last few years. Today, India has the highest number of medical colleges in the world [2]. Till date the official MCI Website indicates, 355 medical colleges, creating a total of 44050 seats [3]. An exploding number of medical colleges leading to staff deficiencies and merit devaluation are some of the problems plaguing

the medical education in India [4]. As per Dr Charles Boelen (WHO), the concept of the “five-star doctor” having five sets of attributes namely, care provider, decision maker, communicator, community leader and manager is proposed globally as an ideal profile of a physician [5]. Are our medical students trained enough to work as per global standards?

Another important issue is that medical education in India is western-style, hospital-based, urban-oriented and little action has been taken to make it more community-based [6]. Community based learning largely remains neglected aspect of Indian Medical Education system. Considering these aspects, the current study was conducted among interns of a Medical College in Kancheepuram district, with the objectives of assessing the base line knowledge about practical application of principles of primary health care and the change in knowledge about the same at the end of the Community Medicine posting.

### **Material and Methods:**

The study was conducted among interns in a Medical College in Kancheepuram district of Tamil Nadu. The study was conducted over a period of one year including all interns posted in Community Medicine Department. Institutional Ethics Committee approval and informed consent from the interns were taken before the study. A structured questionnaire was devised related to practical aspects of principles and elements of primary health care by the principal investigator. The questionnaire included topics on health education, health problems, nutrition, environment, maternal and child health care, essential drugs, modifiable diseases, health indicators, immunization and re-

ferral system. Questionnaire consisted of 15 items with open ended response based on the above mentioned topics. Marking system was devised based on ideal answers.

The questionnaire was filled by interns on the first day of Community Medicine posting, supervised by the investigators. No interaction was allowed. Time allotted was 30 minutes. Community Medicine posting consisted of one month at the Urban Health Centre and one month at the Rural Health Centre which were attached to the Department. The same questionnaire was filled by the interns at the end of 2 months of posting under same conditions.

### **Results:**

The study was conducted over a period of one year. 112 interns were posted in the department of Community Medicine over the period of one year and all of them were included in the study. A scoring system was developed. The data was analysed using SPSS version 16. Total aggregate score, score for theory, practical as well as individual item were calculated. Pre and post test scores were compared. Wilcoxon Signed rank test, Paired ‘t’ test and Pearson’s correlation coefficient were applied wherever appropriate.

Table 1 showed that the average grand total of pre test score was 29.68 with a standard deviation (SD) of 10.15 and average grand total of post test score was 31.66 with SD of 9.95. However this improvement was not statistically significant ( $t=1.713$ ,  $p=0.09$ ). The average score of theory increased from 18.82 (SD = 6.64) to 20.02 (SD = 6.96). This difference was not statistically significant ( $t=1.468$ ,  $p=0.14$ ). The average score of practical related aspects also increased from 10.86 (SD=4.47)

**Table 1: Aggregate and Individual Scores of Interns**

No.	Category (N=112)	Pre Test Mean Scores	Post Test Mean Scores	Test of Significance
1	Theory	18.82	20.02	t=1.468, p=0.14
2	Practical	10.86	11.64	t=1.52, p=0.13
	Grand Total	29.68	31.66	t=1.713, p=0.09

**Table 2: Pre and Post Test in Theory and Practical Related Questions**

No.	Theory Related Questions (N= 112)	Pre Test Scores	Post Test Scores	Test of Significance
1	Enumerate three methods of health education for a group of villagers.	1.3	1.68	$Z_w = 2.815$ $p = 0.005^*$
2	Enumerate five major health problems of India	3.59	3.57	t=0.109 p=0.9
3	Enumerate three community nutrition programmes which are implemented in Tamil Nadu.	1.75	1.79	$Z_w = 0.202$ p=0.84
4	Enumerate the three important aspects of ante natal advice	2.36	2.34	t=0.178 p=0.8
5	Enumerate five health problems which have standard treatment guidelines in a primary health care setting.	3.18	3.07	t=0.507 p=0.6
6	Enumerate the four criteria for essentials drugs.	2.23	2.5	$Z_w = 1.73$ p=0.08
7	Enumerate five commonly occurring notifiable diseases	1.75	1.57	$Z_w = 0.95$ p=0.3
8	Enumerate five indicators which can predict the health status of a specified population	1.82	1.96	$Z_w = 0.52$ p=0.6
9	Write in brief about sanitation barrier	0.84	1.54	$Z_w = 3.236$ p=0.001*
	<b>Practical Related Questions:-</b>			
10	Enumerate three appropriate methods of assessment of nutritional status of children in a community	1.23	1.36	$Z_w = 1.251$ p=0.2
11	Enumerate three techniques / methods of purification of household water	2.29	2.34	t=0.45 p=0.6
12	Specify correct timing of insertion of intra uterine contraceptive device	0.82	0.75	$Z_w = 0.418$ p=0.6
13	Enumerate equipments used to maintain the cold chain at Primary Health Centre Level	1.00	1.21	$Z_w = 1.57$ p=0.1
14	Write National Immunisation Schedule as per UIP	4.59	4.8	t=0.83 p=0.4
15	Briefly explain the referral system followed in India	0.93	1.18	$Z_w = 1.395$ p=0.1

$Z_w$  = Wilcoxon Signed rank test, t = paired 't' test, \*p<0.05-significant

to 11.64 (SD = 3.83). This difference was also not statistically significant ( $t=1.52$ ,  $p=0.13$ ). As per Table 2 analysis was also done separately for items related to theoretical and practical aspects. Out of theory related questions, the findings about methods of health education to villagers and sanitation ( $Z_w=2.815$ ,  $p=0.005$  and  $Z_w=3.236$ ,  $p=0.001$  respectively) were statistically significant. None of the changes were significant for questions based on practical aspects.

### Discussion:

The current study shows that among 15 questions only two showed statistically significant improvement. It should be noted that majority of the questions which have been asked test the lower cognitive areas of knowledge and recall. Affective and aptitude questions have not been included. In spite of this the intervention of community medicine internship shows no improvement in the scores.

This clearly indicates that internship programme in Community Medicine is not resulting in significant change in cognitive aspects related to Primary Health Care.

A very unsettling question that arises here is the reason behind this poor performance. Bansal RK has aptly stated that internship is one of the weakest links of the teaching programme [7]. Ananthakrishnan N has observed that one of the main reasons for the poor quality of PGs is that the period of internship is a total waste and thus, those entering the system of post-graduation are undertrained undergraduates [4]. Review of literature shows that numerous articles attribute the poor performance of the interns to the post-graduate entrance exams [4, 7, 8, 9, 10, 11, 12]. These examinations are

scheduled at the end of internship in India. These examinations are extremely competitive and require rigorous preparation. Thus it becomes difficult for an individual to concentrate on internship if they aim to get a good score.

It is also important to find out whether this phenomenon of poor performance is related to the subject of Community Medicine. Community Medicine and related public health are not the areas of interest of undergraduate students as our UG curriculum is clinical based. In a recent study (2011) conducted by Kumar and Dhaliwal on career choices of undergraduate medical students, Community Medicine was not a choice for post graduation for any of the students [13]. Apathy towards matters of public health importance has also been noted by Rangan and Uplekar in a study conducted in 1993 [6]. Even in other fields of integrated medicine similar findings have been observed. In a study conducted by Channa et al. 81% of the homoeopathic practitioners have had average knowledge of Public Health discipline [14]. However it should be noted that poor performance in internship is not limited to Community Medicine alone. In a study conducted by Bansal PK et al, it has been observed that four of the five new surgery residents had a below satisfactory overall performance. Poor performance has been noted on the procedural station indicating that these skills are not being adequately learnt during internship [8]. Lack of basic health information, gaps in their knowledge of curative care and rational prescribing was also observed by Rangan and Uplekar [6]. Many authors have also mentioned the fact that students from private medical colleges belong to rich and affluent class. Thus they have poor

community orientation and relative disinterest in factors affecting community health which are perceived to be non glamorous [6, 15, 16]. However, it should also be noted that internship issues are not related to private medical college alone. Rangan and Uplekar have conducted community health awareness among 342 recent medical graduates from Mumbai, from Govt. and Municipal Colleges and observed basic lack of information [6].

Thus the problem appears to involve the entire internship training programme in all specialities, in private as well as government colleges.

### Conclusion:

Internship period could be evaluated which can be taken into consideration for postgraduate entrance exams. This can be done by designating specific personnel to observe day to day work of interns. This should also be coupled up with small community based projects highlighting practical aspects of work. This will make good performance in routine work essential. We need to glorify community oriented fields as that is the need of the hour if we want rural India to benefit from our medical graduates. Medical education has undergone a lot of changes in the recent years. Making the internship interesting and relevant is one of the biggest challenges of the future.

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