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MEDICAL GRADUATES?;
RESULTS OF A CROSS-SECTIONAL STUDY

Dr. Fatima Mukhtar[1], Abuzar Aziz[2], Shayan Rashid Khawaja[3], Akasha Amjad[4], Alina Haider[5]

1. MBBS, DTM&H (U.K), M.Phil
Associate Professor,
Department of Community Medicine,
LMDC, Lahore.
2,3,4,5
4th year student
LMDC, Lahore.

Correspondence Address:
Dr. Fatima Mukhtar
7-Aziz Bhatti Road
Lahore, Cantt.

fatimamukhtar@doctor.com

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ABSTRACT... A universal challenge faced by developing countries these days is the inequitable distribution of health professionals, which compromises the capacity of the health system to deliver efficient and effective health care. Availability of reliable data on medical graduates is important for health planning and development of policies and plans dealing with health workforce labour market. **Objectives:** To determine the proportion of medical graduates who remained affiliated with the profession three to six years after graduation from a private medical school, To find out the specialty selection and practice location of these graduates, and to determine the association between their gender and affiliation with the profession. **Methods:** A cross-sectional study was undertaken at the Lahore Medical & Dental College from March to May 2014 selecting graduates through convenience sampling. The graduates were contacted through e-mail, Facebook and telephone. After obtaining voluntary informed consent from the respondents, a pre-tested structured questionnaire was used to collect information.The data was recorded and analysed using the statistical package for social sciences version 16.0. Chi-square test is used to test statistical significance between respondent's gender and their affiliation with the medical profession at $p \leq 0.05$. **Results:** A large proportion 98(88%) of medical graduates remained affiliated with the profession. Those who didn't pursue it were all females ($p \leq 0.05$). Majority 86(88%) were located in Pakistan. A greater proportion worked in the tertiary health care facilities 65(94%). The popular specialty being pursued was medicine 24(24%). **Conclusion:** Female medical graduates should be provided opportunities for part time work.Medical schools should provide early and prolonged exposure of students to primary health care facilities, in order to increase their uptake of rural postings.

Key words: Medical graduates, specialty selection, career destination, practice location.

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INTRODUCTION

The health of a country's population plays a significant role in its social, economic and political development. A healthy population in turn is the product of a skilled, committed, competent and hardworking health workforce[1]. The term "health workforce" has been defined by the World Health Organization (WHO) as "all people engaged in the promotion, protection or improvement of the health of the population"[2]. The requirements and expectations from this health workforce are rapidly changing given the epidemiological and demographic transitions most countries are experiencing, in addition to the advent of new medical technologies, outbreaks of new emerging infectious diseases in the form of epidemics, pandemics, natural disasters, and emergencies[3].

A universal challenge faced by developing countries these days is the inequitable distribution of health professionals. This accrues both as a result of the movement of doctors from developing to developed countries and from rural to urban areas within a country; posing problems for the health systems of these nations.Developing countries like Pakistan are affected the most, and this health manpower shortage created by brain drain and a propensity to work in the urban areas is envisaged to hinder Pakistan's achievement of the Millennium Development Goals (MDG) by year 2015[4-6]. Medical migration to the United Kingdom, Canada, United States of America, and Australia accounts for 11% of the medical doctors being trained in Pakistan[7]. Additionally, female graduates are seen to leave the medical profession after completion of their house job, further worsening

the crises. According to some specialists, 50% to 80% of female graduates abandon the medical profession. There is no followup of medical graduates by medical colleges or by the Pakistan Medical & Dental Council, which would provide evidence to such claims[8]. Now with an increase in the number of both private and public medical colleges in the province of Punjab, and majority of entrants to these colleges being females it is of paramount importance that medical colleges keep track of their medical graduates, vis-a-vis their specialty, training and location[9].

Also, having reliable data on medical graduates is important for health planning and development of policies and plans dealing with health workforce labour market[6]. This study is therefore being undertaken to determine the proportion of medical graduates who remained affiliated with the profession three to six years after graduation from a private medical school, find out the specialty selection and practice location of these graduates and determine the association between their gender and affiliation with the profession.

METHODOLOGY

A cross-sectional study was undertaken at the Lahore Medical & Dental College (LMDC), Lahore. The study was completed in three months after approval of the proposal from the institutional ethical review board. A list of doctors who graduated from LMDC between years 2008 and 2011 was obtained from the college office. The graduates were recruited using convenience sampling technique. We also employed the snow-ball approach by which respondents helped identify the whereabouts of their other class-mates. We were able to trace 113 medical graduates. Theywere contacted through e-mail, telephone and throughFacebook. After obtaining voluntary informed consent from the respondents, a pre-tested structured questionnaire was used to collect information on demographics, affiliation with the medical profession, specialty selection and location of work. The questionnaire was emailed and in boxed to respondents contacted through email and Facebook respectively. Medical graduates contacted through email/ Facebook were given two weeks to return the filled in questionnaire. Respondents failing to do so were sent reminders and given another week to fill out the questionnaire. An attempt was made to contact the non-responders via telephone calls, and datawas collected through a telephonic interview for respondents successfully contacted through telephone.

Data was analysed using SPSS 16.0. Data is described in the form of frequencies and percentages. Chi-square test is used to test statistical significance between respondents' gender and their affiliation with the medical profession at $p \leq 0.05$.

RESULTS

A total of 113 medical graduates were traced and they participated in the study, but two questionnaires were incomplete, therefore, 111 of them were entered and analyzed. There was a majority of females61(55%) as compared to male respondents 50(45%). Of the total respondents, 103 medical graduates mentioned their marital status, which showed 57(55%) were married, 42(41%) were never married and 4(4%) belonged to the "other" category of divorced/widowed. A large number of graduates resided in Pakistan 104(93%). Of the total respondents 5(4.5%) had graduated in 2008, 37(33%) in 2009, 50(45%) in 2010 and 19(17%) in 2011. (Table no. I)

Variables	Number	Percentage
Gender n=111		
Male	50	45
Female	61	55
Age in years n=99*		
25-27	48	48
28-30	44	44
Above 30	7	8
Marital Status n=103*		
Single	42	41
Married	57	55
Other	4	4

Country of Residence n=111		
Pakistan	104	93
Ireland	1	1
United Kingdom	1	1
United States of America	3	3
United Arab Emirates	2	2
Year of Graduation n=111		
2008	5	5
2009	37	33
2010	50	45
2011	19	17

Table-I. The socio-demographic profile of the respondents

** Those who responded out of a total of 111 respondents*

The graduates of LMDC were asked about their affiliation with the medical profession and 98(88%) were found to be pursuing it, however 13(12%) were not affiliated with the profession. (Figure No. 1)

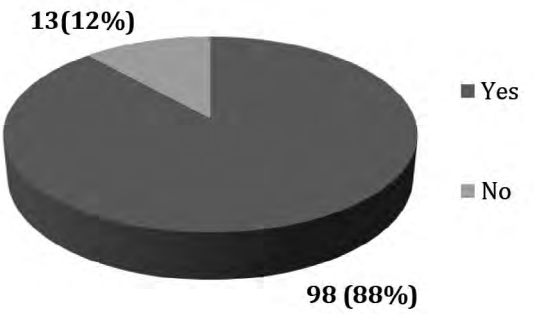

Fig. No.1: Medical graduates affiliated with the profession

As depicted in table-II all the respondents who were no longer pursuing the medical field were females ($p \leq 0.05$). The reasons cited by the female graduates for not continuing with the medical profession were family matters, marriage, and childbirth.(Figure 2).

	Affiliation with the medical profession Yes	No	Total
Gender Male	50 (100%)	0 (0%)	50 (45%)
Female	48 (79%)	13 (21%)	61 (55%)
Total	98 (88%)	13 (12%)	111 (100%)

Table-II. Medical graduates' affiliation with the medical profession by gender

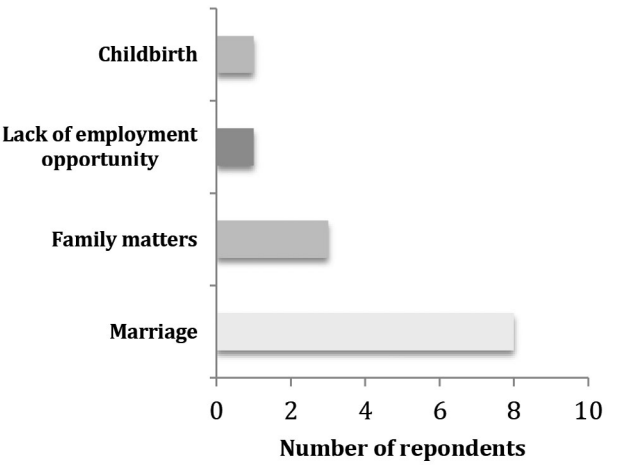

Fig-2. Reasons cited by female graduates for discontinuing medical profession

Of the graduates affiliated with the profession, a greater proportion preferred to work in the clinical health sciences 86(88%) as compared to the basic health sciences 12(12%). The specialty preferences of the graduates as showing in figure 3, shows medicine ranked highest in preference 24(24%), followed by an equal proportion of graduates opting for surgery 11(11%) and also gynecology 11(11%). The specialty of radiology followed close, which was chosen by 10(10%) graduates.

Of the 98 medical graduates who opted to pursue the medical profession, 86(88%) were located in Pakistan. A majority of respondents 77(78%) were currently working while 21(22%) respondents were preparing for a postgraduate examination. A predominant number of graduates who were currently working were employed at a tertiary care health facility 65(94%), whereas a meagre number were posted at the basic health

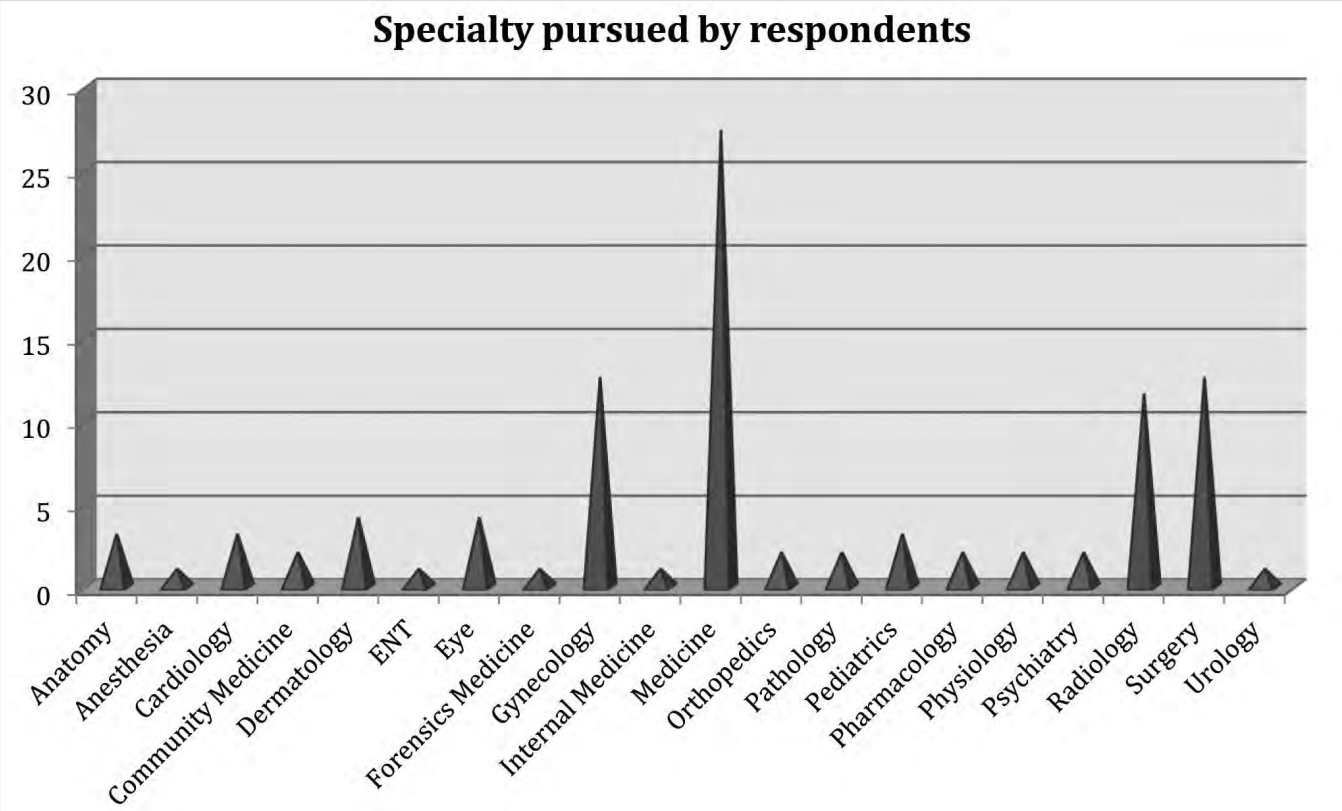

Fig. No.3: Specialty pursued by the medical graduates

unit 2(3%), district headquarter hospital 1(1.5%) and tehsil headquarter hospital 1(1.5%). None wereworking at the rural health center. (Table-III)

Facility	Number n= 69	Percentage
Basic health unit (BHU)	2	3
Rural health center (RHC)	0	0
District headquarter hospital (DHQ)	1	1.5
Tehsil headquarter hospital (THQ)	1	1.5
Teaching hospital/medical college	65	94

Table-III. The work location of medical graduates.

DISCUSSION

The present study was undertaken to assess the career destinations of medical graduates of Lahore Medical & Dental College. This study looked at the proportion of medical graduates who remained allied with the profession three to six year after graduating, and it was seen that majority were currently pursuing the medical field. The remaining who were not pursuing medical career were all females. A study in Goa, found 76.5% of the doctors remained affiliated to the profession five years after graduating. And 41% of the female graduates had quit medicine[4]. The female graduates in our study cited family matters, marriage and child birth for discontinuation of their profession. Other researchers have reported this challenge faced by female graduates[10]. However, for some women the commitment of pre-med and medical school followed by those of residency and fellowship, forces them to take childbearing for granted, which may result in unintended childlessness and consequently female doctors resorting to assisted reproductive techniques [11].

Majority of the respondents were practicing in Pakistan after graduation. This is a positive observation indicating that Pakistan's health sector offers ample opportunities to its medical graduates[12]. Another reason for graduates choosing to stay within the country might be increased competition for limited employment opportunities available abroad [13].

The present study shows a propensity of doctors working in the tertiary care health facilities as opposed to the secondary or primary level health care facilities. This maybe attributed to medical education in Pakistan exposing students to tertiary level teaching hospitals rather than rural health facilities[9]. Another reason for opting for the teaching hospitals can be availability of job opportunities, familiarity with the hospitals and big cities and close proximity to home. The choice of working at primary level health care facilities and rural settings has been shown to be due to early and prolonged exposure to such work places[14]. The specialty of medicine was the most popular choice. The results are consistent with a study conducted amongst Nepali medical students. Their choice of careers showed a similar trend in specialty selection [15].This inequitable distribution of health workforce has implications for the health of our population [8].

Our study had certain limitations, which may have affected the results. One, the study was conducted among the graduates of one private sector medical college, hence the results are not generalizable to all graduates. Secondly, a large proportion of medical graduates either didn't respond because of a change of their email addresses or face book accounts or we weren't able to contact them as their phones were either switched off, were not answered or the numbers we had were incorrect. However, this study is the first of its kind which followed up medical graduates of a private medical college.

CONCLUSIONS

A large proportion of medical graduates remained affiliated with the profession. Those who didn't pursue it were all females.Majority werelocated in Pakistan and working in the tertiary health care facilities. The popular specialty being pursued was medicine.

RECOMMENDATIONS

Further studies should be conducted among other private as well as public medical colleges to determinethe proportion of medical graduates pursuing the medical profession. It is suggested that female medical graduates should be provided opportunities for part time work. Additionally medical schools should provide early and prolonged exposure of students to primary health care facilities, in order to increase their uptake of rural postings.

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"You can avoid reality,
but you cannot avoid the consequences
of avoiding reality."

Ayn Rand (1905-1982)

AUTHORSHIP AND CONTRIBUTION DECLARATION

Sr. N.	Author-s Full Name	Contribution to the paper	Author=s Signature
1	Dr. Fatima Mukhtar	Identification of research area Determination of research methodology Literature review Development of questionnaire Data analysis Writing the article Final proof reading	
2	Abuzar Aziz	Literature review Data collection Data analysis	
3	Shayan Rashid Khawaja	Literature review Data collection Data analysis	
4	Akasha Amjad	Literature review Data collection Write-up discussion	
5	Alina Haider	Literature review Data collection Write-up discussion	