LETTER TO THE EDITOR

Response to comment on Najia Karim Ghanchi et al (J Pak Med Assoc. 2017; 2: 627-9)

Perception of pathology as a future career choice among medical Students from Karachi, Pakistan: Experience from a private medical school

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The study was a cross-sectional evaluation of perceptions of students in different years of their medical education and may show trends which are specific to a particular cohort within the medical college.

This study was a snapshot of one medical college and we selected only Students of Aga Khan University. Although, their perceptions may be influenced by the working environment in their learning communities and thus this may not be representative to all Pakistani medical students in private and public sector medical colleges of Pakistan. Furthermore local and cultural issues may also have an impact which we could not determine. Upon extensive literature search, no study of a similar nature was found. Hence a pilot study had to be performed in order to calculate sample size. Thirty AKU students were selected at random. The satisfaction of pathology of perception were found (21/30=70%) respectively. Students enrolled at AKU were approached for this study as per sample size calculations (Supplementary data). All participants were randomly selected and none of them refused to participate in our study. 201/225 forms were evaluated; remaining 24 forms were excluded from study due to incomplete data provided by respondents the overall response rate were found 89%. Moderately satisfied responses were defined as scores from 50-60% and 52 (25.9%) students response were categorized under moderately satisfaction level.

The questionnaire of this was validated using following techniques before starting the data collection methods. Face validity techniques was used to validate questionnaire. Questionnaire was subjectively reviewed by researcher, pathologist, consultant and sociologist to see whether the items are understandable, clear to understand by the respondent and comprehensive enough to address and measure what the researcher wants to ask. The panelists were seeing whether there is a need of rephrasing, omission, or addition of questions. Based on review, the questionnaire was modified. In the second phase discriminant validity criteria was applied for conducting questionnaire survey referring to the distinctiveness of different constructs. From side to side the risk stratification were measure the main outcome variable i.e. students satisfaction criteria regarding pathology perception; and through checklist again then to see whether the questionnaire are correct or incorrect. In addition by applying statistical tools to calculate the percentage (%) of correctly responded questions for each student. If the percentage came around 90%, then may be criteria were accepted to be satisfactory score for the responses of each item/variable. If the response were below 90%, considered low and score may be counted as unsatisfactory. Finally the electronic data transfer and data security on the daily basis filled questionnaire were handed over to the data management unit. After data entry, the hard copies and electronic database were kept secure on the password protected online hub. On the basis of error checklist, an error list of missing data or doubtful or non-meaningful (if any) were developed on a daily basis. These errors were made clear on a daily basis. A weekly data entry report was also being developed.

We divided the sample into two parts/groups in order to check the bias inherent in the questionnaire. We developed two types of proforma questionnaire SET-I & SET-I for pilot testing to check the consistency of the questionnaire proforma. The first group consisted of students from Year 1 to year 3 in SET-I proforma questionnaire, the other group had medical students of years 4 to 5 in SET-II Proforma questionnaire. We continued to use the same format as phase two to collect data of students of year 1 to year 3.Scoring of satisfaction from both formats, ratings obtained were compared. Acceptability of the preferred type of SET format was determined with the help of a higher scoring point scale. We also determined research instrumental bias and respondent selection bias respectively. At the data level outlier cases were

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identified by respondents with random responses.

Furthermore respondents with high variation in responses and respondents with constant responses across the attributes were also noted and Mahalanobis distance was calculated for all respondents' measures values and multivariate normality or outlier was assessed using p-values of the Mahalanobis distances. All p-values of Mahalanobis distance were greater than 0.001, therefore, we inferred there were no multivariate outliers in the data. Multivariate Normality assumption was thus satisfied.

Construct reliability Cronbach's Alpha was calculated for each of the eight constructs of two theoretical frameworks. Cronbach's Alpha value for each of the individual construct is more than 0.6; hence, the constructs were reliable. We made sure that the researchers got the survey forms filled at the same time. If this was not possible than the researcher were given two weeks' time to get the questionnaire filled from the specific targeted medical students

In conclusion our estimation of definite students satisfaction data suggests that the most satisfied students may be the most likely to reply with appropriate responses.

Supplementary Material

Sample size of the study

Pilot study was conducted to calculate sample size and the satisfaction of student and pathology perception were found (21/30=70%) respectively.

Sample size calculated based on pilot study data

Proportion of satisfaction=69%

Confidence interval (C.I) =95%

Desired level=6.4%

Sample size=n=201 Students. Therefore we took 201 students

Following are the calculations: Mathematical Calculation

$n= 1.96^2\ p(1-p) / d^2$= Patients $n= 1.96^2 x0.7\ x(1-0.7) / (0.065)^2 = 197$

All participants were randomly selected and none of them refused to participate in study. 201/225 forms were evaluated; remaining 24 forms were excluded from study due to incomplete data provided by respondents the overall response rate were found 89%.