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Original Research Article

Study on decision making patterns and parameters among doctors of pre-clinical and para clinical departments of GMKMC, Salem, Tamil Nadu

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ABSTRACT

Background: Many studies and research articles in our medical field focus on decision making in the clinical set up, but this study only focused on decision making on pre-clinical and paraclinical settings. The objective was to study patterns and parameters of decision making among the doctors of pre-clinical and para clinical departments of GVMCH, Salem.
Methods: This cross-sectional study was conducted among 45 doctors across 7 pre and para clinicals departments of Government Medical College Salem in Tamil Nadu. Mean, median, mode and standard deviation were used for quantitative data and Pearson chi square test and logistic regression was used for qualitative data using Epi Info 7.
Results: The mean score was 7.2±2.8 with mean scoring percentile of 28.8±11.5. There was Pearsons's chi square significance for variables like external resources related to decision making, books related to decision making, UG and PG pursued at, exposure to workshops or CMEs related to decision making, and age group <35. But on running logistic regression we got statistical significance for external resources related to decision making and age group >35 years.
Conclusions: Variables like external resources related to decision making, age group >35 years showed statistical significance and better inferences compared to other dependent and independent variables in this pre and para clinical department set ups.

Keywords: Decision making, Salem, Teaching faculties of pre-clinical and para clinical departments

INTRODUCTION

Research shows that individuals who focus on life skills are successful in their workplace and real-life situations early on.[1] Life skills encompass a wide ranging, unstructured set of skills and attitudes that is difficult to define or code or categorise.[2] Decision making is one of the five component of WHO band of "five-star doctor"- care provider, communicator, decision maker, manager and community leader.[3]

Life skills have been defined and categorized in different contexts. The comprehensive Hilton Pellegrino framework has categorized 21st century competencies into three domains, with the hypothesis that these three areas are essential to be successful in education, workplace, health and in civic participation.[4]

Learning outcomes in India remain abysmally low is no longer a debate, with the rate of progress over the years appearing to be negative.[5] Even in our medical literature, lot of research and studies are only focusing on clinical

decision making and the other areas of decision making is not addressed effectively. Cognitive achievement and life skills are strongly interdependent, with academic achievement relying heavily on abilities like self-discipline and motivation.[6]

There are several behaviours, skills, attitudes, and strategies- beyond content knowledge and academic skill- necessary for sustained and significant improvements in learning outcomes in this modern medical field that needs to be focused and improved.[7]

This study focused on the decision-making patterns and parameters among the doctors of pre-clinical and para clinical departments of GMKMC- Salem.

METHODS

This study was a cross sectional study. This study was conducted among 45 doctors of 7 departments (anatomy, physiology, bio chemistry, pathology, microbiology, pharmacology and forensic medicine) of Government Medical College Salem during the period of October to December 2023.

Inclusion criteria

All the willing doctors, particularly the teaching faculties in all cadres were included in the study.

Exclusion criteria

Those who did not give consent and not willing were excluded.

Sampling technique

Convenient sampling technique was employed for this study.

Study tool

A pre structured questionnaire on basics of decision making in multiple choice questionnaire format with scores for each response.

Data collection

Participants were strictly advised not to refer or google the answers while filling and answer keys was given at their submission of filled data forms along with reference to standard books (life skills education in India- central square foundation) with keys.

The pre structured questionnaire with 25 objective type multiple choice question format, carefully framed questions on decision making domain alone was selected. Total of 25 marks allotted and the percentile also calculated to 100.

Data analysis

Epi Info-7 was used for statistical software. All the quantitative variables were calculated as mean±standard deviation, Pearson Chi square test was used to assess the statistical significance.

P value of less than or equal to .05 indicates significance. Logistic regression coefficient of beta (r^2) was also done as multi variate analysis.

RESULTS

Mean age group of this study subjects was 40.8±6.4 (mean±2SD) in years.

Mean years of service or teaching experience of study subjects was 9.2±5.4 (mean±2SD) in years.

Table 1: Gender distribution among study subjects.

Gender	Frequency	Percentile
Male	26	65
Female	14	35
Total	40	100

On gender distribution pattern in this study- males constituted 65% (n=26) and females constituted 35% (n=14).

Table 2: Distribution of residence among study subjects.

Place of residence	Frequency	Percentile
Urban	20	50
Rural	06	15
Not clear	14	35
Total	40	100

On the distribution of residence pattern in this study- subjects from urban constituted 50% (n=20) and subjects from rural constituted 15% (n=06).

Table 3: Distribution of designation of study subjects.

Designation	Frequency	Percentile
Professor	7	18
Associate	11	28
Assistant	18	44
Tutor	04	10
Total	40	100

On the distribution of designation or cadre wise of study subjects from the professor cadre constituted 18% (n=7), the associate professor cadre constituted 28% (n=11), assistant professor cadre constituted 44% (n=18) and tutors constituted 10% (n=04).

Table 4: Distribution of completing under graduation-MBBS of study subjects.

Under graduation	Frequency	Percentile
Same state (Tamil Nadu)	26	65
Allied state	12	30
Overseas	2	05
Total	40	100

65% (n=26) of the study subjects completed their under graduate MBBS in their own home state (both government and private universities). The 30% (n=12) of the study subjects completed their under graduate MBBS in their allied or nearby states (both government and private universities).

Table 5: Distribution of completing post-graduation-MD, diploma of study subjects.

Post graduation	Frequency	Percentile
Same state (Tamil Nadu)	21	52.5
Allied state	15	37.5
Overseas	0	0
Nil	04	10
Total	40	100

52.5% (n=21) of the study subjects completed their post graduate MD of their respective specialty in their own home state (both government and private universities). 37.5% (n=15) of the study subjects completed their post graduate MD of their respective specialty in their allied or nearby states (both government and private universities).

Table 6: Books imbibed or read related to decision making pattern among the study subjects.

Response	Frequency	Percentile
Yes	6	15
No	34	85
Total	40	100

Only 15% (n=6) of the study subjects has read books and articles related to decision making context.

Only 10% (n=4) of the study subjects had exposed to external resources related to decision making context. Here the external resources included are videos, talk show, conclave, panel discussion, role play, combined medical education, or any other forms of training activity.

Table 7: Other external resources exposed related to decision making pattern among the study subjects.

Response	Frequency	Percentile
Yes	4	10
No	36	90
Total	40	100

Table 8: Scoring marks of study subjects.

Response	Frequency	Percentile
Less than 8	26	65
More than 8	14	35
Total	40	100

Out of the total 25 multiple choice questions related to decision making in pre and para clinical settings. Each right answer carried one mark and maximum total per subject was 25. 65% (n=26) scored less than 8 marks and 35% (n=14) scored more than 8 marks.

Table 9: Univariate analysis for study variables with Pearson's chi square significance (p value).

Study variables	DF	P value
Exposure to external resources related to DM	1	0.02
Books read related to DM	1	0.04
Under graduation at same state verses allied state	2	0.05
Post graduation at same state	2	0.03
Masters verses diplomas verses allied state	2	0.03
Age >35 verses age <34	2	0.05

Table 10: Multi variate analysis for study variables with statistical significance on logistic regression.

Study variables	Df	P value	R^2- beta coefficient	95 % confidence interval (CI)	
				Lower	Higher
Exposure to external resources related to DM	1	0.03	0.75	0.40	0.92
Under graduation at same state verses allied state	2	1.05	0.36	0.2	2.6
Age >35 years verses age <34 years	2	0.05	0.81	1.0	3.4
books related to DM	1	2.45	0.31	0.45	1.88
Post graduation at same state verses allied state	2	0.09	0.40	0.30	1.88
Masters verses diplomas	2	2.85	0.22	0.9	2.56

On running the multivariate analysis for study variables with statistical significance on logistic regression was seen for two variables- exposure to external resources and age more than 35 years. Variables that lost statistical significance were exposure to books, under graduate and post-graduation at same state and designation of masters (MD) verses diploma (DPH).

DISCUSSION

In this study males out number females by participation, males contributed 65% and females were 35% only, but the intelligence quotient or any other unique technique among the gender perspective has not been applied in this study. But similar study by Tracy et al states that gender differences were perceived, female doctors were more likely to be influenced by psychosocial factors and expectation than male doctors in decision making in different scenarios.[8]

The mean age group of this study subjects was 40.8±6.4 (mean±2SD) in years, in this study two groups were made as age equal and above 35 years and other group of age less than 34 years. Doctors above 35 years of age showed good scores in the questionnaire tool and statistically also significance was seen compared to other groups of less than 34 years. Similarly, McKinley et al study also supports that greater the age of the medico, the more logical in decision making capacity.[9]

Even the time conceived for delivering the decisions also varies among the genders, whereas Bensing et al study explain that female take more time than males in many medical settings.[10] Also Franks et al study also emphasis the same concept of gender differences are there in decision making particularly among medicos.[11]

Cognitive factors such as intelligent quotient, emotional quotient, gravity of the situation, individual variations, past recuperations basic individual stereotypes like introvert, extrovert, ambivert exert influences over decision making and its outcomes.[12,13] But these domains were not covered and analysed in this study.

The study variable of residence of study subjects, both urban and rural did not show any difference to the outcome variable decision making.

Even the cadre or post wise divisions of study subjects also did not show any difference to the outcome variable-decision making.

The variable denoting MBBS studied in same state had statistical significance in univariate (p value <0.05) but not in multi variate analysis with the outcome variable.

Univariate analysis and significance (p value <0.05) was seen in five variables namely- external resources related to DM, books related to DM, UG studied at same state, exposure to workshops or CMEs related to DM, and age group <35 years.

Multi variate analysis and r^2 (exponent of beta value) significance was seen in only two study variables namely-exposure of study subjects to external resources (r^2=0.75) and age group equal to or greater than 35 years (r^2=0.81).

In the questionnaire and scoring only 35% (n=14) had more than 8 and only 65% (n=26) had less than 8 for total of 25 marks. This focuses on to improve decision making process and skill sets for handling different situations and productive outcomes in pre and para clinical set ups.

The self-structured questionnaire was piloted and tested with Crohn Bach alfa value more than 72%. Some of the situations for medical decision making in pre and para clinical departments includes- disturbing student in the class, one of the students wants to change his/her gender, habitual over speeding in his/her bike/car, students with poor financial background, alcohol addicted candidate-how to handle, one of your students wants to leave the course half way and is perplexed, habitual improper dress code/mood disorders/other forms of neurosis following guy/girl.

Even though these are some of the rarest occasions in our budding college side, the medical teacher should be sensitized at least the basic approach, not only the problem is identified- each scenario carries four ethical and logical options with scoring also.[14]

Now as per National Medical Commission India- mentor mentee program. Each faculty from the pre and para clinical department will be taking care of at least 5 students right from the start of the foundation course and will be followed up to final year MBBS. So in such academic bonding, more interaction and students pattern and behaviour will be interpreted by the medical teachers, on the other side transferring the life skills from the mentor to the mentee will be productive and effective in all ways to the budding medical students in all physical, mental, emotional and social dimensions.[15]

This study has some limitations. The total sample size was 45 and non-respondent rate was 11.1% (n=5), 3 of the study subjects did not returned the data sheet and 2 of the data sheet was not properly filled. Study variables like books imbibed and external resources on decision making component were not accurately recorded as the study subjects had a lot of recall and qualitative bias. Sample size can be increased by including clinical departments, but in that case the scenario changes, as clinical departments have different dimensions and different settings like breaking the bad news, handling an emotionally unstable attender or mob, conveying a morbid picture of patient etc. Motivating the study subjects to improve their decision-making skills is too cumbersome and a persistent one with different modalities.

CONCLUSION

Of all the different direct and indirect parameters of decision making in a medical college set up, in this study only two parameters namely exposure to external resources, and age more than 35 years of the study subjects has statistical significance and holds the vital parameters for DM among teaching faculties of pre-clinical and paramedical departments. To improve this component- doctors are recommended to participate or expose to external resources like CME, workshops, panel discussion, paper presentation, conferences, conclaves. Naturally aging also improves the decision-making component. The medical community must be aware of unconscious parameters that play a vital role in decision making in different set ups which will improve the outcomes of the future doctors and future generations in all dimensions and situations.

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