

Is Future of Medicine Safe in the Hands of Young Medical Practitioners? Perceptions of Medical Students Regarding Academic Misconduct

Samreen Misbah, Syed Fawad Mashhadi, Fatima Ayaz Zuberi, Elia Ali, Seerat Fatima, Khinshan Haider, Nasir Saeed, Muhammad Umar Riaz

Army Medical College/National University of Medical Sciences (NUMS) Rawalpindi Pakistan

ABSTRACT

Objective: To assess the self-reported attitude and behavior of MBBS students towards academic misconduct and to identify the differences of responses.

Study design: Analytical cross-sectional study.

Place and Duration of study: Army Medical College, Rawalpindi Pakistan, from May to Sep 2022.

Methodology: MBBS students from first to final year of both genders who consented to participate were included in the study while excluding unwilling students. Data were collected from 396 medical students by convenience sampling using a validated questionnaire by the University of Dundee. After formal ethical approval responses were obtained on 14 scenarios. Data were analyzed by using IBM SPSS Statistics version 26. For descriptive statistics frequency and percentages were identified, and Pearson's Chi-Square test was used to find out the differences in responses among all year ($p < 0.05$).

Results: Among participants with mean age 20.93 ± 1.57 , there were 285 (72%) males and 111 (28%) females. In attitude response a significant difference was found for year one students as copying answers or asking about OSCE, copying from published papers, and submitting already submitted work were not considered wrong. In behavior response a significant difference was found for final year students in copying answer or discussing OSCE for degree exam.

Conclusion: Participants of this study were morally alert when it involves patients' well-being, however there is vulnerability to commit academic misconduct in all years. Perspective of medical students on cheating, plagiarism, signature forgery is same regardless of seniority and gender. Students' own consideration along with institutional policies may help creating culture against academic dishonesty.

Keywords: Attitude, Fraud, Medical, Plagiarism, Professional misconduct, Students.

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INTRODUCTION

Academic morality is an integral component of medical professionalism at the undergraduate level. It demands honesty in academic work that is necessary for personal and professional development of students, as well as avoiding practices that may be unacceptable. These central human values are known to maximize the credibility of medical practitioners, exercised into their characters since their student days.¹ Examples of unethical academic practices may include marking false attendances on behalf of fellow students, using improper means to attain questions before exam, cheating in exams or copying assignments, insufficient citations or direct plagiarism, or other fraudulent practices which create inequality among learners.²

It has been reflected by students that mostly academic overload and competitions to get good scores are related to cheating behaviors.³ Studies have shown that students who are able to score well in exams

plagiarized less as compared to those who were failed or scored less.⁴ The skills required to become a physician are on vast grounds, ranging from medical knowledge to a high ethical standing. For medical students it is more vital as in future the academic integrity is converted into professional integrity.⁵ This integrity must be promoted by students and faculty as well, and should be inculcated from very beginning. Dundee poly-professionalism inventory-1 based on 45 items explore students' perceptions as recommended by General Medical Council GMC in areas of fraud and dishonesty and has also been validated for South Asian countries to evaluate professionalism.^{6,7}

Few studies has also suggested that students were careful in their conduct about patient care or cheating during exams, still they show careless behavior for clerkship tasks and classes. Evidence has shown that students thought that copying colleague's work without consent is misconduct but if it is with knowledge than it is not.⁸ Need for medical professionalism education for undergraduate medical students is

Correspondence: Dr Samreen Misbah, Department of Community Medicine, Army Medical College, Rawalpindi, Pakistan

understandable as academic dishonesty has been considered a strong predictor for decreased professional integrity in later life.⁹ Studies have shown that directed efforts to expose students to formal ethic curriculum, knowledge of hidden curriculum and role modelling may help developing culture of integrity.¹⁰ Academic institutions may involve students to play active role in developing and implementing those values that promote broader insight into ethical issues as awareness about medical ethics is increasing not only among medical students and doctors but patients as well.

It is an issue widespread across both developed and developing nations. Medicine has robust requirements of a good sense of morality and equity not paralleled by professionals of other fields. The major responsibility that comes with the white coat demands doctors to be reliable and trustworthy to both colleagues and patients.⁹ The holistic field of Medicine leaves no room for fraud and deceit because medical students and doctors deal with human lives. This study has been conducted to assess students' attitudes regarding academic misconduct in the milieu of classrooms, examination halls, and clinical rotations along with the self-reported frequency of the matter. Evaluating medical students' perceptions may be the first step in the identification of loopholes in our system which need to be removed to ensure trust in doctors and patient-safety in the future.

METHODOLOGY

This analytical cross-sectional study was conducted among MBBS medical students of Army Medical College, Rawalpindi Pakistan from May to September 2022. Keeping margin of error 5%, at 95% confidence interval for unknown population, 396 sample size by non-probability convenience sampling was calculated using Raosoft calculator.¹¹

Inclusion Criteria: Students ranging from the first year to the final year of study, willing to participate and who gave informed consent were included.

Exclusion Criteria: Medical students who were not willing or did not fill out the questionnaire completely were excluded.

The study began after clearance from the ethical review committee (reference number ERC/ID/22/01). Data were collected by using questionnaire of University of Dundee (Survey of Fraud and Plagiarism).¹² To identify the attitude and behavior of MBBS students from all years about academic misconduct the data

were collected using 14 scenario based questionnaire taking example of a fictitious student "John". Scenarios related to forged signatures, cheating in exam, falsifying patient information, copying assessment, submission of previously submitted assignment etc. were involved. Responses were obtained on "Yes", "No" and "Not sure" options. Almost 5-7 minutes were required to fill the questionnaires based on both open and closed-ended questions. Questionnaire was explained to participants and the subjects gave informed consent for inclusion of data in final result compilation keeping confidentiality and anonymity that was ensured. Data was analyzed by using IBM SPSS Statistics version 26. Descriptive statistics to find out frequency and percentages, and Pearson's Chi-Square test of independence to find out the differences in responses among all year students was used keeping critical value of significance <0.05.

RESULT

Among 396 MBBS students, 27(6.8%) were first-year students, 161(40.7%) second-year students, 81 (20.5%) third-year students, 89(22.5%) students from fourth-year, and 38 (9.5%) from final year. Comprising of 285(72%) males and 111(28%) females, the mean age was 20.93±1.57 years with minimum 17 and maximum 29 years age. For nine scenarios a significant difference was found in attitude response among all years Table-I. For seven of these scenarios that is copying answers in exam, asking about OSCE during exam, copying from published papers, copying clinical presentation, sharing of done work and doing assignment for others and submitting work already submitted by senior was not considered wrong by more of year one students. While forging doctor's signature and submitting thesis from previous degree was considered wrong more in final and first year students.

For most of the scenarios no significant difference was found in behavior response among all years, Table-II. For six scenarios a significant difference was found. For two of these scenarios that is copying answer for degree exam, discussing OSCE during exam, more of final year students considered doing it. More of the fourth year students will lend their work to copy. More first year students will submit work already submitted by seniors. For copying clinical presentation, more of first and final year students did not consider doing the alike. For copying from published sources without acknowledging was considered more by third year students.

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Table-I: Attitude difference among five years for answering “Whether you feel that John is wrong”

Scenarios Interpreting Attitudes	Response	Percentages						p-value
		Year 1	Year 2	Year 3	Year 4	Year 5	Total	
“John forges Dr.Cloony’s signature on piece of work”	Yes	70.4	80.1	81.5	76.4	92.1	80	*0.037
	No	22.2	12.4	16	9	5.3	12.4	
	Not Sure	7.4	7.5	2.5	14.6	2.6	7.6	
“John Copies answers in a degree exam from Jean”	Yes	48.2	71.4	74.1	77.5	73.7	72	*0.001
	No	14.8	18	19.8	18	15.8	17.9	
	Not Sure	37	10.6	6.2	4.5	10.5	10.1	
“John chats to Jean about the OSCE, Jean has just completed and John is about to go into.”	Yes	25.9	36	50.6	46.1	52.6	42.2	*0.008
	No	63	40.4	28.4	28.1	39.5	36.6	
	Not Sure	11.1	23.6	21	25.8	7.9	21.2	
“John copies from textbooks or published papers and lists them as references.”	Yes	26	45.3	42	45	55.2	44.2	*0.030
	No	33.3	41	42	42	36.9	40.4	
	Not Sure	40.7	13.7	16	13	7.9	15.4	
John copies directly from textbooks or published papers without acknowledging the source.	Yes	63	61.5	65.4	76.4	76.3	67.2	.383
	No	18.5	23	19.8	14.6	10.5	18.9	
	Not Sure	18.5	15.5	14.8	9	13.2	13.9	
“John copies Jean’s work (e.g. patient presentation, SSM report, case discussion)”	Yes	44.4	59.6	70.4	73	63.2	64.1	*0.011
	No	22.3	26.7	17.3	9	21.1	19.9	
	Not Sure	33.3	13.7	12.3	18	15.8	15.9	
“John lends Jean his work to look at, and she copies it without telling him”	Yes	51.9	51.6	53.1	55.1	68.4	54.3	.109
	No	22.2	29.2	33.3	36	13.2	29.5	
	Not Sure	25.9	19.3	13.6	9	18.4	16.2	
“John lends Jean his work to copy.”	Yes	25.9	41.6	51.9	36	52.6	42.4	*0.007
	No	66.7	42.9	39.5	38.2	39.5	42.4	
	Not Sure	7.4	15.5	8.6	25.8	7.9	15.2	
“John writes a piece of work (e.g. patient presentation etc.) for Jean”	Yes	29.6	47.2	54.3	42.7	50	46.7	*0.015
	No	66.7	31.7	32.1	37.1	42.1	36.4	
	Not Sure	3.7	21.1	13.6	20.2	7.9	16.9	
“John writes Central Nervous system examination normal when he has not performed the procedure”	Yes	74.1	70.8	76.5	77.5	86.8	75.3	0.661
	No	18.5	19.3	14.8	13.5	5.3	15.7	
	Not Sure	7.4	9.9	8.6	9	7.9	9.1	
“John resubmits already submitted work for a different part of the course.”	Yes	59.3	57.1	56.8	55.1	71	58.1	.100
	No	18.5	26.7	16	20.2	5.3	20.5	
	Not Sure	22.2	16.1	27.2	24.7	23.7	21.5	
“John submits his thesis from a previous degree for his special study module”	Yes	81.5	54	56.8	52.8	81.6	58.8	*0.003
	No	3.7	29.8	19.8	23.6	10.5	22.7	
	Not Sure	14.8	16.2	23.4	23.6	7.9	18.4	
“John submits work submitted the previous year by his senior”	Yes	37	61.5	65.4	76.4	65.8	64.4	*0.010
	No	25.9	24.8	14.8	10.1	10.5	18.2	
	Not Sure	37.1	13.7	19.8	13.5	23.7	17.4	
“John and Jean submit the same SSM report”	Yes	44.4	49.1	57.5	64	60.5	54.9	0.172
	No	44.4	30.4	22.5	19.1	21.1	26.4	
	Not Sure	11.2	20.5	20	16.9	18.4	18.7	

Students when asked about the most serious misconduct among all scenarios, 197(49.7%) of them considered the scenario 10 “John writes Central Nervous system examination normal when he has not performed the procedure” the most grievous misconduct. Almost 75% of students from all years had considered this wrong and 73% did not consider doing it.

About 274(69.2%) students considered that students should inform faculty if they are aware of other student’s misconduct but only 172(43.3%) would themselves had done so. Among male students, 199(69.8%) of 285 thought students should inform faculty and 131(46%) considered themselves informing

faculty if they knew about the misconduct. Among female students 75(67.6%) of 111 thought students should inform faculty and 41(36.9%) considered themselves informing faculty if they knew about the misconduct.

DISCUSSION

The fundamental component of medical professionalism is in academic integrity. Assessing students’ academic honesty provides a titer to assess their professionalism as well. The current study was conducted to assess medical students’ aptitudes, behaviors, and moral reliability when academic misconduct came into play in classrooms, exam halls,

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Table-II: Behavior differences among five years for answering “Have you done or would consider doing the same”

Scenarios Interpreting Attitudes	Response	Percentages						p-value
		Year 1	Year 2	Year 3	Year 4	Year 5	Total	
“John forges Dr.Cloony’s signature on piece of work”	Yes	18.5	19.9	27.2	20.2	13.2	20.7	.485
	No	81.5	75.1	69.1	71.9	84.2	74.5	
	Not Sure		5	3.7	7.9	2.6	4.8	
“John Copies answers in a degree exam from Jean”	Yes	14.8	16.8	23.5	18	26.3	19.2	*.021
	No	77.8	67.1	70.4	78.7	71.1	71.5	
	Not Sure	7.4	16.1	6.2	3.4	2.6	9.3	
“John chats to Jean about the OSCE, Jean has just completed and John is about to go into.”	Yes	14.8	32.3	27.2	30.3	42.1	30.6	*.034
	No	44.4	45.3	54.3	58.4	44.7	50	
	Not Sure	40.8	22.4	18.5	11.3	13.2	19.4	
“John copies from textbooks or published papers and lists them as references.”	Yes	14.8	28.6	39.5	37.1	21.1	31	.177
	No	70.4	52.2	49.4	47.2	65.8	53	
	Not Sure	14.8	19.2	11.1	15.7	13.1	16	
John copies directly from textbooks or published papers without acknowledging the source.	Yes	18.5	16.8	23.5	12.4	13.2	16.9	*0.023
	No	74.1	64.6	70.4	77.5	84.2	71.2	
	Not Sure	7.4	18.6	6.1	10.1	2.6	11.9	
“John copies Jean’s work (e.g. patient presentation, SSM report, case discussion)”.	Yes	7.4	20.5	23.5	19.1	7.9	18.7	*0.005
	No	51.9	64	64.2	69.7	63.2	64.4	
	Not Sure	40.7	15.5	12.3	11.2	28.9	16.9	
“John lends Jean his work to look at, and she copies it without telling him”.	Yes	11.1	20.5	21	20.2	15.8	19.4	0.176
	No	66.7	56.5	64.2	70.8	71	63.4	
	Not Sure	22.2	23	14.8	9	13.2	17.2	
“John lends Jean his work to copy.”	Yes	37.1	24.8	32.1	46.1	28.9	32.3	*.040
	No	40.7	54	56.8	39.3	55.3	50.5	
	Not Sure	22.2	21.1	11.1	14.6	15.8	17.2	
“John writes a piece of work (e.g. patient presentation etc.) for Jean”.	Yes	55.6	30.4	37	37.1	52.6	37.1	0.140
	No	37	57.8	53.1	48.3	39.5	51.5	
	Not Sure	7.4	11.8	9.9	14.6	7.9	11.4	
“John writes Central Nervous system examination normal when he has not performed the procedure”.	Yes	14.8	15.5	14.8	15.7	5.3	14.4	0.065
	No	51.9	73.9	72.8	74.2	81.6	73	
	Not Sure	33.3	10.6	12.4	10.1	13.2	12.6	
“John resubmits already submitted work for a different part of the course.”	Yes	25.9	21.1	25.9	21.3	18.4	22.2	0.962
	No	55.6	59	56.8	60.7	55.3	58.3	
	Not Sure	18.5	19.9	17.3	18	26.3	19.5	
“John submits his thesis from a previous degree for his special study module”.	Yes	11.1	16.7	21	19.1	5.3	16.7	.344
	No	77.8	64	63	69.7	78.9	67.4	
	Not Sure	11.1	19.3	16	11.2	15.8	15.9	
“John submits work submitted the previous year by his senior”.	Yes	44.4	16.8	13.6	13.5	15.8	17.2	*0.002
	No	44.4	67.7	69.1	80.9	76.3	70.2	
	Not Sure	11.2	15.5	17.3	5.6	7.9	12.6	
“John and Jean submit the same SSM report”.	Yes	14.8	15.5	21	24.7	18.4	18.9	0.073
	No	77.8	63.4	59.2	61.8	78.9	64.6	
	Not Sure	7.4	21.1	19.8	13.5	2.6	16.4	

and wards. The majority of the students acknowledged academic misconduct as actually wrong when given hypothetical scenarios and also considered not to do alike. However, few students do not consider these behaviors wrong and engaging of these students in such behaviors is worrisome.

The competitive environment and lack of accountability also lead to such behavior. Evidence has suggested that students themselves have reported about misconduct and confess that they knew their fellow students were involved in some types of dishonest behavior as also suggested by participants of

this study.⁵ A study conducted in Malaysia reporting misconduct by students suggested proactive role of stakeholders of universities to address these issues.¹³ Many students of current study from early years have not considered different scenarios wrong of fictitious student. Faculty may play role by creating intrinsic motivation among students by creating such a learning environment that can link knowledge to practice from non-clinical to clinical exposure.¹⁴

Participants from final year and fourth year in current study have significantly reported that they have or will consider copying answer or discussing

OSCE during exam. Reduction of dishonesty among students require explaining adequate behaviors and more stress over learning process rather than assessments.¹⁵ A self-reported survey in Dundee University Medical School in all years highlighted the severity of the matter by indicating that most of the students in early years considered these scenarios wrong but in later years the trend was changed and many students reported that they were involved in certain type of dishonesty.¹²

Most of the participants proposed that such misconduct must be reported, but at the same time very few of them have themselves do so. Similar facts were shared by students in a study where they thought reporting of such events are for betterment of involved student, but at the same time they had fear of losing friendship or any untoward outcome.¹⁰ Another study conducted in Thailand has shown that although first year medical students reflected few scenarios of academic misconduct were wrong still they did not acknowledge other scenarios of academic misconduct, as reporting about someone who is cheating or not attending the class as wrong conduct. It demands further research to find out cause and effect of these behaviors.¹⁶ To develop culture for awareness of academic dishonesty and improvement of educational system, firm action against such behavior is required. Also there is a need to remove the difference of perceptions between faculty and students where students do not consider certain types of academic dishonesty very serious.¹⁷ Development of comprehensive policies for preservation of academic integrity also demands understanding, specifically consideration of students in this regard.¹⁸

The strength of this study is that it has identified perceptions of medicals students from all years to have an extensive understanding of the topic. A validated questionnaire has been used for this purpose.

LIMITATION OF STUDY

It was a single institutional study therefore generalizability of results is not ensured. Self-reported responses may have produced biased response. To find out the reasons of such behavior further qualitative exploration may be suggested.

CONCLUSIONS

This study revealed that students are more morally alert when it involves patients' well-being, however vulnerability to commit academic misconduct is present in all years of MBBS course. More or less the perspective of medical students on cheating, plagiarism, signature forgery is same regardless of seniority and gender. But for some

scenarios, there was significant disparity among the gender, where female counterparts were less likely to interfere in situations of academic misconduct and involving authorities. Also with seniority, medical students become desensitized to clinical malpractice as compared to juniors. The vantage point of students on copying assignments was quite casual, most of them did not even consider it an academic misconduct. Moreover, the conscientiousness of a bad deed does not discourage the students from committing it. Students' own consideration along with institutional policies in this regard may help creating culture against academic dishonesty.

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Author's Contributions:

Following authors have made substantial contributions to the manuscript as under:

SM: Design, Questionnaire review, Statistical Analysis, Final manuscript & approval for the final version to be published.

FM: Final Manuscript, Proof reading & approval for the final version to be published.

FA: Concept, Design, Statistical Analysis, Data Collection, Final Manuscript & approval for the final version to be published.

EA: Data Collection, Questionnaire, Introduction & approval for the final version to be published.

SF: Introduction, Discussion, Results & approval for the final version to be published.

KH, NS, MU: Abstract, Discussion, Questionnaire & approval for the final version to be published.

Authors agree to be accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved.

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