

Plagiarism and the medical fraternity: A study of knowledge and attitudes

Bushra Shirazi,¹ Aamir M. Jafarey,² Farhat Moazam³

Ziauddin Medical College,¹ Centre of Biomedical Ethics and Culture, SIUT,^{2,3} Karachi.

Abstract

Objective: To assess knowledge and perceptions of plagiarism in medical students and faculty of private and public medical colleges in Karachi.

Methods: A questionnaire based study was conducted on groups of 4th year medical students and medical faculty members. Group A consisted of medical students while group B comprised faculty members. The questionnaire contained 19 questions that assessed knowledge and attitudes of the respondents regarding various aspects of plagiarism.

Results: The total number of medical students (Group A) studied was 114 while the faculty number (Group B) was 82. Nineteen percent Group A and 22% of Group B displayed the correct knowledge about referencing materials from the internet or other sources. Seventeen percent of respondents in Group A and 16% in Group B had correct information about the use of quotation marks when incorporating verbatim phrases from external sources. Regarding Power Point presentations, 53% of respondents from Group A and 57% from Group B knew the appropriate requirements. There was a statistically significant difference among the two groups regarding the issue of self plagiarism, with 63% of respondents in Group A and 88% in Group B demonstrating correct understanding. Both groups showed a general lack of understanding regarding copyright rules and 18% of Group A and 23% of respondents in Group B knew the correct responses. Eighteen percent of respondents in Group A and 27% in Group B claimed to have never indulged in this practice.

Conclusion: There is a general lack of information regarding plagiarism among medical students and faculty members (JPMA 60:269; 2010).

Introduction

The term plagiarism can be traced to Marcus Valerius Martialis (died 103 AD) who first employed it for the theft of intellectual material without acknowledging the source.¹ Intellectual theft includes theft of ideas, works from literature and science, reports, assignments or presentations. Easy access to a vast pool of electronic resources has made plagiarism all the more easy and within reach of anyone with a computer with internet access. Various reasons can be ascribed for indulging in plagiarism including a fiercely competitive academic milieu, impossible deadlines and an increasingly hostile environment fostering a "publish or perish" culture. Judging by reports, plagiarism appears to be a

common issue in academic institutions across the world and is increasingly being reported from many Pakistani institutions as well.

The issue of plagiarism has been taken up vigorously by the news media also and several editorials have appeared in recent months highlighting the issue.² The extent of the problem can be gauged by the fact that faculty members of a reputable university have been reported charging each other of plagiarism.³ An apparent lack of emphasis by institutions in highlighting the problem has been quoted as one of the major reasons for rampant plagiarism.⁴

Apart from sporadic news reports and editorials, there is no scientific data analyzing the issue available from within

Pakistan. It has therefore not been possible to understand the true nature and extent of the problem in this country.

One of the main motivations for this pilot study was based on personal experience of two of the authors of this paper. While assessing essays submitted as a requirement for admission into a bioethics diploma programme, they noticed an alarming number of plagiarized submissions. Upon questioning the offending applicants, it appeared that most of them genuinely did not believe they had plagiarized their work and insisted that they had only attempted to strengthen their work with "research" from the internet. This level of ignorance about such an important aspect of scientific research and writing, and that too from mid career medical professionals, was of significant concern. This study was undertaken as a pilot, to gain a better understanding about plagiarism in the local context and to explore perceptions about various stakeholders on the issue.

Subjects and Methods

Between May and September 2008, a questionnaire based study was conducted in Karachi on selected groups of 4th year medical students and medical faculty members. Using convenience sampling, this interviewer led study involved participants from one government and two private sector medical colleges in the city.

A questionnaire, consisting of 19 detailed questions, was developed to assess knowledge and attitude of respondents about various forms of plagiarism and related issues such as copyright laws. This article presents a selection of results from the survey which we believe as most important to the prevailing situation in Pakistan. Portion of the questionnaire included in this paper are reproduced in Table-1.

Using a uniform system, two of the authors administered the questionnaire in selected medical institutions to groups of 4th year medical students at the end of regularly scheduled classes. This particular level of students was chosen for the sake of convenience since one of the authors had direct access to this group at her institution. Similar level students were selected at all three survey sites to maintain participant uniformity. Of the three institutes, one was from the government and two from the private sector. After explaining the objectives of the study and obtaining a verbal informed consent, each question was read out aloud and participants given time to write their responses before moving on to the next question. Consenting groups of medical faculty were similarly surveyed using the same methodology following multidisciplinary academic meetings. Faculty participants included a mix of junior and senior consultants from the disciplines of Basic Biomedical Sciences, Internal Medicine, General Surgery, Urology, Obstetrics and Gynaecology, Paediatrics, and Neurology. To encourage frank answers, participants were assured of anonymity and only their

specialty and institutional affiliation were recorded.

Following completion and collection of questionnaires from each group, a brief educational session was conducted for participants to discuss various aspects of plagiarism along with a questions and answers session to clarify any confusion about the subject.

The responses were assessed against a pre-formed correct response key and the main outcome measure was the level of correlation between the responses to various questions and the key. A response indicated adequate knowledge of the respondent if the response matched the key.

The study was reviewed and approved by the Ethical Review Boards of the institutions in which it was conducted.

Results

The total number of medical students (Group A) studied was 114 while the faculty number (Group B) was 82. Overall, only 22 respondents (19%) in Group A and 18 (22%)

Table-1: Questionnaire.

Select the appropriate answer, more than one may be correct (correct responses are highlighted).	
1	While accessing information from internet based source, is it acceptable to: a) Cut and paste the relevant portions i) Within quotations ii) With reference to the original source b) Paraphrase the relevant portion and i) Within quotations ii) With reference to the original source
2	Regarding what material requires to be referenced in your paper: a) All the material that is used in your paper needs to be referenced. b) Well known facts (e.g. Islamabad is the capital of Pakistan) require to be referenced. c) The material that is used as a direct quote should be referenced. d) Only material from printed sources needs referencing. e) Since this is a paper for institutional use only, there is no need for referencing anything.
3	Is it acceptable to access a relevant presentation, cartoon/ pictures/ video clips available easily on web and: a) Use it as it is, without modification i) Reference the original source ii) Not include any reference as no copy rights mentioned b) Modify and use it i) Reference the original source ii) Not include any reference as no copy rights mentioned c) Reference only material that has a copy right symbol © d) Not use any material that has copyright symbol © e) Not use anything from the internet
4	Have you ever plagiarized
5	Did you take any action if your noticed a colleague of yours plagiarize

in Group B had appropriate knowledge about standard referencing criteria incorporation into one's work. Forty nine (43%) respondents in Group A and 44 (54%) in Group B gave

Table-2: Results.

#	Area assessed	Group A	Group B	P-Value
1	Correct understanding for need for referencing	n = 22 (19%)	n = 18 (22%)	0.73
2	Correct understanding of methodology for incorporating materials as paraphrases	n = 49 (43%)	n = 44 (54%)	0.16
3	Correct understanding of methodology for incorporating materials verbatim	n = 19 (17%)	n = 13 (16%)	0.99
4	Correct understanding of methodology for incorporating web based clips/cartoons in their own Power Point presentations	n = 55 (48%)	n = 37 (45%)	0.78
5	Correct understanding of methodology for incorporating PowerPoint presentations available on the web	n = 60 (53%)	n = 47 (57%)	0.68
6	Correct understanding of the concept of self plagiarism	n = 72 (63%)	n = 72 (88%)	0.01
7	Correct understanding of the concept of copy rights	n = 21 (18%)	n = 19 (23%)	0.49
8	Never plagiarized work themselves	n = 21 (18%)	n = 22 (27%)	0.18
9	Have observed colleagues plagiarize work	n = 84 (74%)	n = 56 (69%)	0.54
10	Took action against plagiarists	n = 12 (10%)	n = 11 (13%)	0.66

correct answers regarding appropriate methodology for incorporating paraphrased material into their work. Even more strikingly, only 19 (17%) people in Group A and 13 (16%) in Group B had correct information about the use of quotation marks when incorporating verbatim phrases from books and journals.

Medical students and faculty displayed insufficient knowledge, with little difference between the two groups, regarding the use of web based materials including ready made presentations, clips and cartoons (Table-1).

When respondents were assessed on their understanding of self plagiarism, 72 (63%) of Group A and 72 (88%) of group B respondents gave correct answers. This was the only area where there was a statistically significant ($p < 0.01$) difference in the responses of the two groups. In contrast, only 20 (18%) and 19 (23%) respondents in Group A and Group B respectively demonstrated correct understanding about the concept of copyrights.

Ensuring anonymity of participant identity, we also attempted to explore personal attitudes towards plagiarism. A majority from both groups admitted to having plagiarized material at one time or the other. Moreover, 84 (74%) of Group A respondents and 56 (69%) in Group B reported knowing of a colleague who had plagiarized work while only a very small number from both groups stated that they had taken steps for action against the plagiarist, but our study did not include questions about the nature of steps taken (Table-1).

Discussion

To the best of the authors' knowledge, this is the first study of its kind in Pakistan analyzing the issue of plagiarism. Although limited to Karachi, it sheds light on the nature and extent of the problem that afflicts academia and the student body in Pakistan. The results of our study, although conducted in three institutions of Karachi, are however reflective of the extent of a problem that exists countrywide within our medical communities. Answers to our questionnaire, turned in anonymously, revealed that more than half of the respondents

lacked knowledge about some of the most basic principles that constitute plagiarism. Even more concerning, but logical, was our finding that this paucity of knowledge appeared to be equally distributed among medical students and the medical faculty responsible for their education. It was only in the area of self plagiarism where faculty displayed better understanding than students perhaps due to their experience with prior publications.

Roughly only half of the medical students and faculty in this study knew the requirements for correctly referencing and citing material from written sources whether used in the form of a paraphrase or as direct, verbatim quotes. This was no different from the low level of knowledge about the correct use of web based material, including clips and cartoons, for Power Point presentations. Information was especially low in both groups (Group A 17%, Group B 16%) when it came to proper usage of quotation marks for verbatim portions obtained from published sources to distinguish these from their own words in the written text. Our survey findings lead us to believe that neither group has had the benefit of receiving appropriate education about what constitutes plagiarism, an increasingly complex issue with the explosion of easily available internet sources, and that this lack of knowledge may be a major underlying cause of this problem in Pakistan.

Plagiarism is becoming an increasing concern around the world and we believe there may be multiple causes behind this practice. In a 2007 study from Florida by Forrester, 56% of medical students were reported to have copied material word for word providing references but without using quotation marks.⁵ Our study however reveals this lack of knowledge about the need for quotation marks also among faculty members, leading us to speculate that this form of plagiarism may be inadvertent rather than done consciously. However authors reporting a study done in Croatia suggest that in countries where the national language is not English and command over it is poor, people may be more inclined to include materials verbatim without delineating them in quotation marks.⁶

A majority of the respondents from both groups in our study confessed to have indulged in plagiarism themselves and also to have known their colleagues to plagiarize their work at one time or the other. Among our participants, 18% of group A and 27% of group B claimed to have never plagiarized. Plagiarism is of course not unique to Pakistan and researchers from countries within developing and developed regions of the world have reported cases of plagiarism occurring in schools and universities. In one study on dental students in Iowa, 43% of students admitted to cheating at least once.⁷ In another study from Croatia looking at the prevalence of plagiarism among medical students, only 9% of students were found to have never been involved in this practice.⁸

Although no previous studies such as ours have been carried out in Pakistan, newspapers have been reporting increasing instances of cheating among students. Some note this to be occurring as early as in secondary school levels and some teachers have been found justifying the use of unfair means by students in order to pass annual examinations.⁹ We suspect that societal nonchalance towards using unfair means to ensure success in examinations is leading to increasing tolerance towards plagiarism. This may help to provide an explanation for our disconcerting finding that even when participants observed some one plagiarizing, only a few considered this important enough to take an action against the offender (10% and 13% of Groups A and B respectively). This failure to act on the part of the majority reflects a growing tolerance towards plagiarism leading to internalization and acceptance of clearly unethical academic conduct.

Other factors may also be responsible for reluctance to report incidences of plagiarism. In a study from the Middle East exploring attitudes towards academic integrity, utilizing a self-administered questionnaire to medical students and interns, plagiarism was seen by many as a minor offense when compared to misuse of authority and power. When it came to reporting misconduct, many students believed that this was not their responsibility, and also feared repercussions from peers if they were to do so. Our suspicion that our study suggests increasing tolerance for plagiarism is supported by the Middle Eastern study in which participants reported that "everyone else is doing it."¹⁰

The fact that both students and faculty in our study had poor knowledge about copyright laws, with the latter scoring only marginally better than the former, is of obvious concern. It has been suggested that due to the high cost of obtaining copyrighted educational material in developing countries, some do not consider it morally objectionable to infringe copyright laws. The justification commonly given by people is that without doing so even seminal works in different disciplines are beyond the reach of students from less affluent countries. This is not an area we explored in our study but one that requires further investigation in Pakistan.

There appears to be no international consensus on the punitive actions to be taken against students, faculty, and professionals who plagiarize. A study from Canada involving dental faculty and students reveals opinions varying from verbal reprimands to failing students in a semester if caught plagiarizing.¹¹ There are some examples of severe professional consequences for plagiarists. In England, a well known psychiatrist was suspended for three month because of plagiarism, a punishment he claimed to be out of proportion to his offence.¹² In USA, cases have been reported of expulsion and dismissal of students and professors from institutions including Harvard University.¹³

In Pakistan, although the Higher Education Commission (HEC) does not provide a uniform policy for punishing plagiarists, it does offer a set of broad guidelines for institutions. This is in the form of a "Little Book of Plagiarism," a document adapted from guidelines of the Leeds Metropolitan University.¹⁴ In addition to providing the definition of plagiarism and describing its different forms, the document also suggests punitive measures that may be taken against offenders. A wide variation however exists on this matter among educational and administrative groups in Pakistan. Recent events in the Punjab University (PU) are a case in point. When it was determined that some PU teaching faculty had been involved in plagiarism, the PU Syndicate decided to let the offenders off with little more than a warning although HEC had recommended their dismissal. The Syndicate's action however led to an uproar prompting HEC to put a hold on PU grants, and the ensuing tussle reflected the divergence of opinions on this matter within academic circles.^{15,16} Moreover, with the recent cutback in Pakistan government's funding for HEC, and thus a curtailment of its grants giving powers, it remains to be seen whether its attempts to enforce strict action against plagiarists within universities in Pakistan can continue.¹⁷

There are sufficient reasons to believe that plagiarism within Pakistani academic institutions is commonplace rather than a rarity. Our study suggests that in many cases this may be due to lack of information and education, rather than malice, on the part of students and faculty as to what constitutes plagiarism. We believe this to be an area that must be addressed through education, and on an urgent basis. Institutions must also assume a zero tolerance policy towards plagiarism; make this policy well known to students, faculty and staff, and deal promptly and decisively with those who deliberately breach this policy. Plagiarism detection software must also be made available to universities and teaching institutions. Until recently HEC provided services of an online plagiarism detection site free of cost to public institutions. This free facility was withdrawn this year due to lack of funding, and it is highly unlikely that many institutions will be able to afford the subscription fee now

required by HEC for this service.

Conclusions and Recommendations

The results of this study suggest that a major reason for plagiarism in the medical fraternity is because both medical college teachers and the students share a high level of ignorance regarding the issue. They simply do not know that they are plagiarizing. The study however also indicates a degree of apathy. Even among those who do have some awareness about the issue admit to have plagiarized their work at one time or the other. Furthermore, there is also a noticeable level of general reluctance to report this offense to the authorities.

The level of complacency demonstrated in this study is of concern, especially so because it seems to have been effectively transferred down the generation. This study provides enough evidence to warrant a greater, in depth look at plagiarism around the country. There is also a dire need to devise an educational strategy aimed at raising awareness of individuals and institutions about plagiarism. Additionally, institutions need to evolve policies to detect and counter this menace, provide practical guidelines to its personnel and empower them by providing education in this important area. HEC support in this regard will be beneficial, but institutions could also collaborate in devising and implementing policies in partnership, share resources including plagiarism detection mechanisms and help create and nurture an ethical ethos.

References

1. Marsh B. The plagiarism debate: History and context. In: *Plagiarism: Alchemy*

and Remedy in Higher Education. Albany: Suny Press, 2007, pp 31-48.

2. Plagiarism at KU. Dawn, Oct 30, 2009.

3. Malik M. Plagiarism: accused UET teacher becomes accuser. Dawn, Oct 30, 2009.

4. Shah B. Battle against plagiarism. Dawn, Oct 27, 2009.

5. Cole AF. Plagiarism in Graduate Medical Education. *Family Med* 2007; 39: 436-8.

6. Sri Kantha S. Nobel prize winners for literature as palliative for scientific English. *Croat Med J* 2003; 44: 20-3.

7. Fuller JL, Killip DE. Do Dental Students Cheat? *J Dent Educ* 1979; 43: 666-9.

8. Bilic-Zulle L, Frkovic V, Turk T, Azman J, Petrovecki M. Prevalence of plagiarism among medical students. *Croat. Med J* 2005; 46: 126-31.

9. Baloch F. Cheating galore at schools turned into exam centre for their own students. *The News*, April 1, 2009. Available from URL: <http://www.interface.edu.pk/students/April-09/Exam-centres-cheating-galore.asp>.

10. Elzubeir MA, Rizk DE. Exploring perceptions and attitudes of senior medical students and interns on academic integrity. *Med Educ* 2003; 37: 589-96.

11. Teplitsky PE. Perceptions of Canadian dental faculty and students about appropriate penalties for academic dishonesty. *J Dent Educ* 2002; 66: 485-95.

12. Sturcke J, Wainwright M. Disgraced Raj Persaud quits as consultants at leading hospital. *The Guardian*, October 24, 2008. Available from URL: <http://www.guardian.co.uk/lifeandstyle/2008/oct/24/raj-persaud-psychiatry-maudsley>.

13. Rimer S. When plagiarism's shadow falls on admired scholars. *New York Times*, November 24, 2004. Available from URL: <http://www.nytimes.com/2004/11/24/education/24harvard.html>.

14. HEC Plagiarism Policy and The Little Book of Plagiarism. (Online) Cited 2009 Aug 12. Available from URL: http://publisher.hec.gov.pk/QALI/Quality_Assurance/QA_Div.html@157.

15. Syndicate lets guilty PU teachers off the hook. Dawn, April 3, 2007. (Online) 2007. Available from URL: <http://www.dawn.com.pk/2007/04/03/nat7.htm>.

16. Ghumman K. HEC Stops Funding Punjab Varsity: Failure to Check Plagiarism. Dawn, April 4, 2007. (Online) 2009. Available from URL: <http://www.dawn.com/2007/04/04/top17.htm>.

17. HEC winds up coordinating unit for lack of funds. *The Daily Times*, Jan 5, 2009. (Online) 2009. Available from URL: http://www.dailytimes.com.pk/default.asp?page=2009\01\05\story_5-1-2009_pg7_20.