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Do medical students really understand plagiarism? – Case study

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Abstract

In the last decade, more and more medicine students are involved in research, either in the form of a research project within specialized courses or as a scientific article to be presented at student international conferences or published in prestigious medical journals. The present study included 250 2nd year medical students, currently studying within the University of Medicine and Pharmacy of Craiova, Romania. There were collected 239 responses, with a response rate of 95.6%. In our study, the results showed that foreign students within the University of Medicine and Pharmacy of Craiova did have some issues understanding plagiarism with fewer foreign students (34%) than Romanian students (66%) recognizing that simply changing words does not avoid plagiarism. In our opinion, there should be put more emphasis upon plagiarism implications and its aspects, as well, with a permanent order to try to prevent future attempts of plagiarizing among medical students as future researchers within the medical science field.

Keywords: plagiarism, medicine, students, academic, research.

⊟ Introduction

"Academic honesty and respect of intellectual property are areas of considerable concern to tertiary institutions worldwide" [1].

Generally speaking, research is known as the investigation of ideas and uncovering of useful knowledge. It should personally reward the researcher and also beneficial from the social point of view. Unfortunately, there may be abuses as far as research is concerned. Thus, propaganda, usually considered information intended to persuade, is too often mistaken by what is called objective research. Legitimate scholars should not use this as it can become harmful for people who use such information without being aware of the implications.

Good research should follow certain paths, such as:
▪ reflecting a sincere desire to determine an overall truth, based on available information;
▪ involving discernment and honesty, by acknowledging possible errors or limitations;
▪ being cautious about drawing conclusions and careful in identifying uncertainties or exaggerated claims.

As opposed to good research, a bad research activity meets some general aspects, like:
▪ it starts with a conclusion and only presents facts taken out of the context;
▪ it often assumes that association proves causation, by jumping into logic or misleading arguments;
▪ it manipulates and mispresents information by supporting a particular conclusion, even though it makes use of accurate data.

In his book "On bullshit", philosopher Harry Gordon Frankfurt [2], referring to manipulative misrepresentations, argues that "a bullshitter's fakery consists not in misrepresenting a state of affairs but in concealing his own indifference to the truth of what he says. The liar, by contrast, is concerned with the truth, in a perverse sort

of fashion: he wants to lead us away from it." Of course, that a certain issue may be interpreted from various perspectives, but whoever justifies misrepresented information or denies the value of truth is actually bullshitting.

In the last decade, more and more medicine students are involved in research, either in the form of a research project within specialized courses or as a scientific article to be presented at student international conferences or published in prestigious medical journals. The question arising here is whether medicine students are familiarized or not with issues of scientific misconduct, such as plagiarism or self-plagiarism. Various factors leading to possible plagiarism have been identified all over the world, such as:
▪ lack of proficiency in English (in non-English speaking countries) [3];
▪ social benefits;
▪ lack of respect for intellectual properties [4].

⊟ Students and Methods

Various studies regarding plagiarism by students are undertaken by asking them whether they have cheated or plagiarized at any stage of their studies. This kind of approach may be difficult in determining the actual extent of plagiarism, also being quite useless in helping teachers during the process of discouraging this phenomenon. In the present study, we used the Romanian version of a previously used questionnaire and information sheet provided by Marshall & Garry [5]. This questionnaire, besides soliciting basic demographic information (such as age and gender), provided students with a variety of possible behaviors that might or might not involve plagiarism so as to test what they actually understood plagiarism to be (Table 1), alongside with a variety of behaviors that are considered as potential plagiarism instances and also acceptable practice. The questionnaire

included 14 questions assessing how serious the behavior presented was on a scale from 0 (no issue at all) through to 5 (extremely serious) for themselves. They were also asked to estimate how it might be regarded by other students, the University and the general public. Finally, they were asked to indicate whether and how frequently they had engaged in similar behavior themselves [5].

The present study included 250 2nd year medical students, currently studying in the University of Medicine and Pharmacy of Craiova, Romania. There were collected 239 responses, with a response rate of 95.6%. The results were collected anonymously, by the students, without any teacher present in the room.

⊟ Results

Plagiarism broadly covers definitions including the use of ideas or organization, copying of citations up to an entire reproduction of a scientific work. One of the most formal definitions states that plagiarism represents the resubmission of one's own work; other definitions are less detailed and focus on the key aspects of deception and fraud.

Generally speaking, there is a lot of confusion and disagreement that is present within academia, therefore a variety of justifications is accepted for plagiarism's occurrence in different contexts [6]. As a consequence, it is barely surprising that students are confused when, in some cases, it appears that plagiarism is acceptable provided it is done well. Carroll notes that the formal definition of plagiarism provided to students in many cases varies according to the discipline, the context, and the expectation of what is meant by common knowledge, institutional regulations, and professional codes of ethics [7].

Responses presented in Table 1 indicate that while obvious forms of plagiarism such as directly copying words without acknowledgement are understood by most students (Table 1, Item 1 – 88% correctly identified), there is confusion about how to use materials from other sources correctly (Table 1, Items 5, 6 and 7 – 56%, 28% and 76% correctly identified as plagiarism). If the extent of misunderstanding is taken into consideration, these are disturbing results. The most obvious form of plagiarism is not recognized by 88% of students (Table 1, Item 1) while 73% (Table 1, Item 13) and 64% of students fail to recognize normal citation practices (Table 1, Item 2). Also, over two-thirds of the students (76%, Table 1, Item 7) think that changing the words is sufficient to avoid plagiarism. This high proportion of misunderstanding suggests that there is little value in simply asking students whether they understand what plagiarism is or if they have engaged in plagiarism themselves.

Table 1 – *Definitions of plagiarism*

Item No.	Definition	Plagiarism Y/N	Student's response (*n*=239)	
1.	Copying the words from another source without appropriate reference or acknowledgement.	Y	211	88%
2.	Copying the words from another source with an acknowledgement.	N	154	64%
3.	Resubmitting an assignment that was submitted in one course for assessment in another course.	N	199	83%

Item No.	Definition	Plagiarism Y/N	Student's response (*n*=239)	
4.	Creating a new piece of work structured according to a documentation standard, by referring to existing work of the same type.	N	110	46%
5.	Using a published work to identify important secondary citations that make a particular logical argument and then citing only those secondary sources to support your own use of the same logical argument.	Y	135	56%
6.	Copying the organization or structure of another piece of work without appropriate reference or acknowledgement.	Y	67	28%
7.	Changing the words of a material from another piece of work and representing it as your own.	Y	184	76%
8.	Buying a complete piece of work in order to submit it for an assignment.	Y	199	83%
9.	Copying the ideas from another piece of work without appropriate reference or acknowledgement.	Y	157	65%
10.	Copying a web site and putting your own words and name into the content part of the pages.	Y	69	28%
11.	Creating a new piece of work on the same theme as an existing one but in a new context and without copying the existing one.	N	134	56%
12.	Using another piece of work to identify useful secondary citations that you cite in your own work without reading the cited material.	Y	96	40%
13.	Quoting from an existing piece of work with a reference to the source.	N	176	73%
14.	Copying short sentences (less than 50 words) from another source without appropriate reference or acknowledgement.	Y	153	64%

Age

Age may have some influence in ethical judgments, as many studies present evidence that older respondents may have higher standards than younger ones [8–10]. Still, the present data is most generally very relevant or dependent on the context. In the academic context, there has been suggested that younger students cheat more often than older students, but it is not clear how age contributes to the decision to cheat or different forms of misconduct such as plagiarism. In the present study, age is not a reliable factor, due to the fact that all the students had more or less the same age, namely between 20 and 21 years old.

Gender

According to Adam, assessing the role of gender in ethical issues is challenging and reliable [10]. In the scientific context, there has been a tendency of males being generally more prone to ethically questionable situations than females [11]. Our study there presented a noticeable difference in male and female students regarding the understanding of the definition of plagiarism only in Item 6 (Table 1) – copying the organization or structure, with it being identified by 38% of males

compared with 62% of female respondents. Much more significant was the difference in copyright violations. Male students were for copying software much more than female students, with 80% of males *vs.* 20% of females. No other significant differences regarding the understanding of plagiarism definition were observed between males and females.

International students

According to various authors, students from cultures other than the Western one tend to commonly engage in plagiarism more often and more extensively than students raised within the Western cultures [12]. However, the extent is actually unclear, an excuse often given by students being the lack of fluency in expression, but, at least, apparently, a range of other cultural factors influence ideas about plagiarism. Students unfamiliar with academic writing may simply lack a good understanding of how to write coursework so as to avoid plagiarism [7].

A variety of explanations are provided in the literature and by students as to why they may have trouble complying with the rules of plagiarism, including:
▪ cultural norms requiring assisting a friend in need [13];
▪ cultural differences in type of required understanding: reproductive *vs.* analytical [14];
▪ fear of excessive loss of face and impact on family [13];
▪ language skills [15];
▪ moral perception of plagiarism [12];
▪ alienation [12].

In our study, the analysis upon the definition of plagiarism results that foreign students within the University of Medicine and Pharmacy of Craiova did have some issues understanding plagiarism with fewer foreign students (34%) than Romanian students (66%) recognizing that simply changing words does not avoid plagiarism (Table 1, Item 7) and, similarly, that websites could also be plagiarized (Table 1, Item 10 – 76% foreign students *vs.* 91% Romanian students). The present results are a concern and suggest that further attention should be paid to the needs of foreign students, this situation demanding to be placed in the context of the very high level of plagiarism observed overall. Therefore, academic specialists should try to facilitate the situation in which foreign students may benefit from the same strategies aimed at improving information use as the Romanian students do, by influencing the need for any initiatives that may continue to reinforce negative perceptions and stereotypes of these foreign students.

Context

Longenecker *et al.* stated that the way ethical issues are perceived depends on a previous exposure to ethical behavior [16]. In our study, the responses of the participants were analyzed, with an overview upon the correlation between admitting to engaging in an unethical behavior and how seriously that action was regarded. In most cases, the correlation was a positive one, indicating that students regarded activities they had not engaged in themselves as being more serious than the ones they had.

Item 10 in our questionnaire, referring to copying from a website and putting his/her own words and name into the content part of the pages, has described students as regarding web materials as free for anyone to use. The low number of students answering with "Yes" at this item (28%, respectively) shows us that the convenience of copying and reusing digital materials and this attitude have combined to normalize and legitimate plagiarism from the web in students. Thus, universities all over the world should consistently consider every form of misconduct as being more serious than any other group, including the general public, in a general context that students see the university as holding higher standards than society in general.

⊟ Discussion

Higher education institutes in Romania have lately begun to be aware of the problem of plagiarism in academic contexts, similar to other European countries. One of the fieriest issues is by no means the increasing number of students entering university today, who are involved in most academic practices and cultures. The higher and higher number of non-Romanian students attending courses in Romanian universities represents another important factor, which leads to greater expectations from students.

The present study analyzes the extent to which students within the University of Medicine and Pharmacy of Craiova understand plagiarism. The used questionnaire is the Romanian version of a previously used questionnaire and information sheet provided by Marshall & Garry, providing students with a variety of possible behaviors that might or might not involve plagiarism so as to test what they actually understand plagiarism, besides soliciting basic demographic information (such as age and gender) [5]. The main factors involved in this study are age, gender, nationality (Romanian *vs.* foreign students) and context. As far as the age factor is concerned, in the present study, there resulted that age cannot be a reliable factor, due to the fact that all the students are more or less the same age, namely between 20 and 21 years old. As far as the gender of the subjects involved, the tendency is for male students to be less aware of what plagiarism is than their female colleagues. The most striking difference can be noticed in the answers about copying from the Internet, namely 80% of male students do not recognize this as plagiarism, in comparison to only 20% of female students supporting this idea. As far as the nationality of the students involved, foreign students within the University of Medicine and Pharmacy of Craiova have some issues understanding plagiarism, with a lower number of foreign students (34%) in comparison to the Romanian students (66%) recognizing that simply changing words does not avoid plagiarism, and, also, that websites could also be plagiarized (76% foreign students *vs.* 91% Romanian students). Regarding the context that may be prone to plagiarism, 28% of the respondent students admitted that they do not consider it a plagiarism context when using copying and reusing digital materials from the Internet (Item 10).

The present study highlights the fact that the general understanding of medical students as far as plagiarism is

concerned is a rather poor one, with no clear boundaries of what constitutes or not plagiarism within their academic work and practice. This fact is considered rather disturbing, taking into consideration the importance of having a good scientific conduct nowadays.

An important study on plagiarism with similar results is the one performed by Ghajarzadeh *et al.*, showing a great prevalence of less correct answers to a negative attitude towards plagiarism questions among Iranian medical faculty members [17].

Also, our findings come to be supported by another survey carried out by Billić-Zulle *et al.*, who analyzed the tendency of plagiarizing among Croatian medical students studying at the Rijeka University School of Medicine [18]. The results showed an alarmingly high rate of plagiarized papers among medical students involved in the study.

In a previous study, we analyzed the attitude of medical students regarding plagiarism, where the students were asked to complete anonymous questionnaires regarding plagiarism [19]. The respective study highlighted the fact that the general attitude of medical students within the University of Medicine and Pharmacy of Craiova was more a positive one towards plagiarism.

In our opinion, there should be put more emphasis upon plagiarism implications and its aspects, as well, with a permanent order to try to prevent future attempts of plagiarizing among medical students as future researchers within the medical science field. Our belief is that exposing medical students to genuine quality research papers, as well as to the rules and methodologies of good research, could only lead to an effective result in decreasing plagiarism. This should be kept in mind, as present medical students will be tomorrow's researchers in medicine, either by embracing a scientific career, or as future MD title candidates, striving for completing a genuine MD Thesis.

⊟ Conclusions

Research has always been a herald of future progress in all fields of activity, including medicine. Consequently, medical research has greatly evolved in the past decades both at international and national levels. Our study revealed that the general attitude of medical students within the University of Medicine and Pharmacy of Craiova is a positive one towards the idea of plagiarism, which should be a warning both for the national authorities responsible for academic curricula and for medicine academic teachers, who should be the first in trying to inspire medicine students with quality research concepts, both through personal guidance and by their own academic example within medical research.

Conflict of interests
The author declares no conflict of interests.

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