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An effectual analytics and cross sectional study on plagiarism among dental post graduates of Bangalore city

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Abstract

Background: Plagiarism is the deliberate use of someone else's thoughts, words or ideas as one's own, without clear attribution of their source. It is a serious offense in academia and a major ethical concern in scientific writing. Despite an increased awareness of the dangers of plagiarism in academic circles and in the media plagiarism is present in scientific writing.

Objectives: To assess the knowledge and attitude regarding and correlate age and academic year with knowledge regarding plagiarism among post graduate dental students of Bangalore city.

Methods: An observational cross-sectional study conducted among the post graduate students of all dental college in Bangalore City, to assess the knowledge and attitude regarding plagiarism among post graduate students in Bangalore city. The study was conducted for duration of 3 months (from June 15th to September 15th 2015). A self-structured close ended questionnaire was used; the questionnaire was designed to collect the knowledge and attitude of post graduate students towards plagiarism. The data was collected compiled & analysed using SPSS software.

Results: In the present study out of 452 participants, 156(34.5%) of them were males and 296(65.5%) were females. Among the study participants 41.2% were having very good knowledge followed by 40.5% with good knowledge and only 18.4% with excellent knowledge and 87.8% had uncertain attitude, followed by 9.7% with positive attitude and only 2.4% with negative attitude. Strong positive correlation was seen between overall knowledge and age ($r=0.90, p=0.00$), week positive correlation was seen between overall knowledge and academic year ($r=0.56, p=0.00$)

Conclusion: It was concluded that post graduate have very good knowledge about plagiarism but most of them had uncertain attitudes which reflects their neglect towards the topic and which may have cause problem in the health care field.

Keywords: Dental Studies, Plagiarism, Post graduate Students

Introduction

Ethics and morals relate to right and wrong conduct. They are the principles deciding what is right and wrong for an individual or a group of people. These morals and ethics are interwoven in the values developed by an individual in a society, academic institute hold the primary responsibility to inculcate the right values in to the students. Scientific misconduct has been the focus of interest in the recent years, it can seriously damage people's health and even life, which usually includes fabrication, falsification, plagiarism, and other unethical behaviour in professional scientific research. Out of these, plagiarism is the most frequent type of misconduct. "To plagiarize" comes from the Latin word "plagiare" which means, "to kidnap." The prevalence of plagiarism has been increasing in the recent years. There are many reasons which can be attributed to the increased motivation towards plagiarism [2]. The first and foremost is the wealth of information which could be accessed at our fingertips through the internet facility. The implementation of computer technology and the availability of scientific papers and books in electronic form have facilitated plagiarizing by allowing simple "copy-and paste" procedures [3]. On the other hand, the same technology has also enabled the development of plagiarism detection software [4]. Thus, plagiarism is regarded as one of the electronic crimes and intellectual thefts from others documents. Digital documents being the major carriers of information require extreme authentication in terms of their origins and trustfulness.

The quest for achieving an accurate and efficient image forgery detection method in digital documentation is never ending. Developing a robust plagiarism detector by overcoming the limitations associated with human intervention is the key issue [5] and many Software/services to detect plagiarism have been developed [6]. After finishing graduation, medical and dental students may be interested in pursuing higher education. Doing research and publishing articles is mandatory in the post-graduate curriculum of many universities all over the world. Since postgraduate students and faculty members are often under the pressure to publish articles, they may be tempted to copy and paste from the internet, where a huge amount of information is easily available [7]. In India, there has been effort, to educate students on ethical issues involved in the practice of science [8]. But on the process of writing article, procedure to be followed towards citations, referencing, formulating and publishing a research paper is still unclear. Plagiarism is one such issue which needs to be taken up as part of ethical teaching. Thus there is a need to assess the knowledge and attitudes of researchers towards plagiarism and scientific misconduct. Hence this study was conducted with the aim to assess the knowledge and attitude regarding plagiarism among post graduate students in Bangalore city.

Material and methods

An observational cross-sectional study was conducted in the month of June to August 2015 [3 months] among all the dental post graduate students of all dental college in Bangalore City, with an aim to assess the knowledge and attitude regarding plagiarism among dental post graduate students.

Bangalore city hosts 16 dental colleges and with around 600 post graduate dental students. All of them were considered for the study. The study proposal was submitted for approval and clearance was obtained from the ethical review board of Bangalore Institute of Dental Sciences and hospital & post graduate research centre. All Post graduate students of all years in dental colleges of Bangalore city were included and Post graduate who were not present during the time of study, students who did not give their consent for the study were excluded from the study. A self-administered questionnaire was designed to collect the knowledge and attitude of post graduate students towards plagiarism. The questionnaire was pretested by dental faculty of various dental specialties to assess the validity, reliability and internal consistency of the questionnaire. Kappa statistics were done for the questions which revealed a value of 0.83. A pilot study was conducted among 27 dental post graduate students, who were selected randomly, to pretest the data collection methods and for the clarity and meaning of the questions. Investigator distributed the questionnaire to all the eligible post graduate in all the specialties, the purpose of questionnaire was explained. Implicit verbal consent was obtained from the patients by disclosing the study objectives and only those who satisfied the inclusion & exclusion criteria were given the questionnaire.

The questionnaire was divided into 3 parts with close ended questions. A total of 31 multiple choice questions were included. First part for recording the demographic details of the study subjects, which included name (optional), age, gender, academic year. The second part included 25 question and was regarding the knowledge towards plagiarism, which ranged from their knowledge about its definition, types, referencing, citation, copy right laws in India, software to

detect plagiarism. The third part included 10 questions assessing the attitude of participants towards plagiarism. After the questionnaire was distributed, filled questionnaire was collected at the end of the day or the next day. Those colleges in which all the departments were not covered in the same day, the college was visited next day and completed. The questionnaire was distributed to the participants by a single investigator. The questionnaire included multiple choice questions and after receiving the full explanation of how to fill the questionnaire, the participants were asked to select one of the most appropriate choices from the provided options. The study was conducted by a single investigator and any doubts arising during the survey were clarified by the investigator himself who was always available during the study. A total of 486 questionnaires was distributed out of which only 474 people returned the questionnaire & among them 452 was completely filled and this was considered for analysis with high response rate of 93%.

Statistical analysis

The data was entered in Microsoft Excel sheet and the data analysis was done using statistical software SPSS version 19. Descriptive statistics included means and standard deviation of the respondent's knowledge and attitude scores. Chi-square test for frequencies, Pearson's correlation was used to establish relationships between variables. Values less than or equal to 0.05 was considered to be statistically significant.

Results

The present study is an observational cross-sectional study conducted among the post graduate students of all dental college in Bangalore City, to assess the knowledge and attitude regarding plagiarism among post graduate students in Bangalore city. A total of 452 students of all years were included in the study. Questionnaire was used to collect the required data

Table 1: Distribution of study participants based on gender

Gender	N (%)
Male	156(34.5%)
Female	296(65.5%)
TOTAL	452(100%)

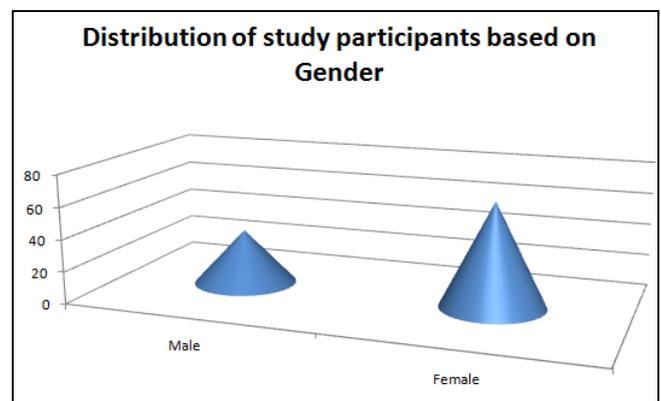


Fig 1: Distribution of Study Participants

Knowledge when assessed among the study participants 41.2% were having very good knowledge followed by 40.5% with good knowledge and only 18.4% with excellent knowledge. (Table-5) (Figure-4)

Table 2: Distribution of knowledge among study participants

Knowledge	N (%)	Mean ± s.d
Good knowledge	183(40.5%)	6.947 ± 3.3524
Very good knowledge	186(41.2%)	
Excellent knowledge	83(18.4%)	
Total	452(100%)	

Scores
 1-5 = good knowledge
 6-10= very good knowledge
 11-15= excellent knowledge

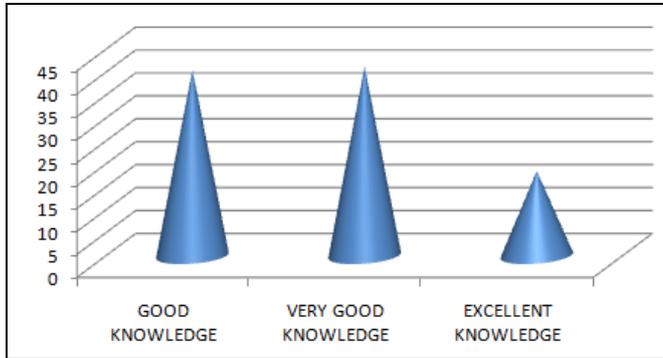


Fig 2: Distribution of Knowledge



Fig 3: Distribution of Knowledge

Attitude when assessed among the study participants 87.8% had uncertain attitude, followed by 9.7% with positive attitude and only 2.4% with negative attitude. (Table-6)(Figure-5)

Table 3: Distribution of attitude among study participants

Attitude	N (%)	Mean ± s.d
Negative attitude	11(2.4%)	29.491 ± 3.0831
Uncertain attitude	397(87.8%)	
Positive attitude	44(9.7%)	
Total	452(100%)	

Score
 14- 23= Negative attitude, 24- 33 = Uncertain attitude, 34 – 42 = Positive attitude

Strong positive correlation was seen between overall knowledge and age which means that there was an increase in knowledge as the age increased and this was statistically significant. ($r=0.90, p=0.00$)

Week positive correlation was seen between overall knowledge and academic year which means as the participants progressed in academic year they also have better knowledge and this was statistically significant. ($r=0.56, p=0.00$)

Very week positive correlation was seen between overall knowledge and attitude, which means as knowledge increases they have more positive attitude towards plagiarism. ($r=0.015, p=0.75$). (Table-7)

Table 4: Correlation among age and academic year with overall knowledge regarding plagiarism

Correlation	r	p
Over all knowledge* Age	0.802	.000**
Over all knowledge*academic year	0.561	.000**
Over all attitude*over all knowledge	0.015	.75

**Highly statistically significant

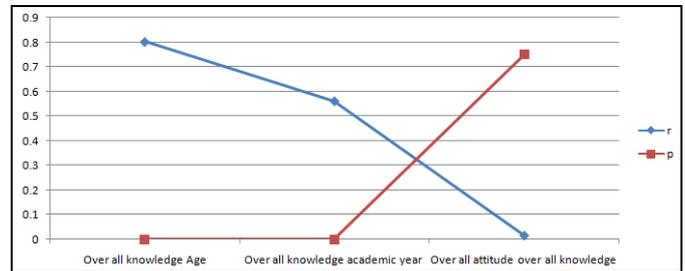


Fig 4: Correlation Analysis

Discussion

Plagiarism is the usage of ideas, text, data, etc. without acknowledgment of the owner of the intellectual property. The common types of plagiarism include use of data from an earlier publication, publish similar data repeatedly, publish same/similar article in a local and also in an international journal with same/different authorship. Studies of academic dishonesty amongst students have often focused on the types of behaviors and practices they are likely to engage in, but study to assess their knowledge and attitude are sparse, hence this study was undertaken with the aim to assess the knowledge and attitude of dental post graduate students towards. A cross-sectional observational study, with a self-structured, close ended pretested and validated questionnaire was used. Hence a study was conducted to assess the knowledge and attitude regarding plagiarism among dental post graduate students in Bangalore city.

A total of 486 questionnaires were distributed out of which only 452 questionnaires were considered for analysis with high response rate of 93% with whole sampling technique. Similarly in a study had a sample of 186 with a response rate of 72.1% with whole sampling technique [9]. In a study total of 196 study participants were taken with convenience sampling [10]. In a study 164 medical and dental post graduates were included in study [11]. In a stud, large sample size of 1,153 students were included to assess the degree to which academic integrity issues currently exist in the dental schools throughout the United States and Canada [12] Study was done on 198 second year medical students to determine the prevalence of plagiarism [13] In a study 155 senior residents (<3 years after post-graduation) and young faculty members (<10 years after post-graduation) with at least five previous publications were administered a structured questionnaire in medical college [14]. Study done by Vanja Pupovac *et al* was done on 146 first year students of Faculty of Pharmacy and Medical Biochemistry [15].

The structure of the dental profession provides unique opportunities for both male and female dentist to exercise a high degree of autonomy and flexibility and at the same time, enjoy the status awards associated with being a healthcare provider but among the 452 post graduates participated in the study, majority of the participants (65.5%) 269 were females and (34.5%) 156 were males, showing more number of female participants, this may be because an increasing number of female are entering the practice of dentistry, Increase in female enrollment in dental schools may be

attributed to the belief that females may be able to balance personal and professional life effectively in India, which was not in accordance with. In a study among 1,153 student respondents, 491 were female (42.6 percent), and 569 (49.3 percent) were male, with ninety-three (8.1 percent) providing no indication of gender^[12]

The results of the present the mean score of knowledge towards plagiarism (6.947 ± 3.3524) among post graduates, were in line with the finding of J Poorolajal *et al.*^[17] where the overall mean score of knowledge (5.94 ± 1.66), this may be as post graduates are still in the learning stage they may not consider plagiarism to be an important issue and few may even be ignorant about this concept.

In the present study the mean score of positive attitude ($5.80 \pm .473$) and Negative attitude ($10.61 \pm .696$) this was in contrast with the study Mary Shimi S *et al.*^[7] the mean of the scores for the questions under positive attitude (36.5 ± 6.7), negative attitude was (22.53 ± 3.3), Vanja Pupovac *et al.*^[15] moderate positive attitude (36 ± 7) indicate considerable percentage of students who justify and accept the act of plagiarism. Negative attitude was moderate to high (26 ± 4). This difference in mean value may be because faculty members were not included in the present study who have positive attitude towards plagiarism.

In the present study when attitude and knowledge were correlated, it was found that as knowledge increases there is positive attitude towards plagiarism ($r=0.015$), Strong positive correlation was seen between overall knowledge and age which means that there was a increase in knowledge as the age increased and this was statistically significant. ($r=0.90$, $p=0.00$). Weak positive correlation was seen between overall knowledge and academic year which means as the participants progressed in academic year they also have better knowledge and this was statistically significant. ($r=0.56$, $p=0.00$) this may be because as academic year progress, publication becomes compulsion and they come across plagiarism in the article reviewing by journals. It is the duty and moral obligation of the student writing that he/she does not copy from other sources, for this they should consult the instructor for guidelines and clarifications about the topic. A proper outline helps in drawing a line between one's own ideas and others' ideas, also helpful in taking of notes which helps in prevention of any misquotations and wrong citations. Overall the results suggest very good knowledge of basic elements of scientific writing but uncertain attitude. Since post-graduate students are going to become the future professionals in the health care field, attitude about plagiarism among them may have serious consequences, there by highlighting the need to address the issue of plagiarism among students. One possible reason for plagiarism could be the limited accessibility to literature in most of the dental institutions and hence the researchers are unable to explore the data completely. If the practice of plagiarism is not taken care of, scientific writing becomes a repetition of previous literature which lacks originality.

Limitations

- Dental postgraduate staff members were not included
- Questionnaire had more knowledge based questions as compared to attitude question.

Recommendations

- Appropriate guidelines should be given from the university and college regarding plagiarism to all post graduate students.

- Regular CDE program and workshops should be conducted on plagiarism to update the guidelines and to update the knowledge.
- Strict rules to be regulated against plagiarism to bring about positive attitude towards.

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