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KNOWLEDGE AND ATTITUDE OF DENTAL UNDERGRADUATE AND POSTGRADUATE STUDENTS TOWARDS PLAGIARISM IN A PRIVATE DENTAL INSTITUTE

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ABSTRACT

The most common type of plagiarism is copying and pasting passages from previously published work into a paper by another researcher. These people may even claim they did not understand they were committing plagiarism. The aim of the study was to assess knowledge and attitude of dental undergraduate and postgraduate students towards plagiarism in a private dental college. A close ended, standard questionnaire containing 24 statements on a 5 point Likert scale for each statement was used to collect data which measures three attitudinal factors (positive and negative attitude and subjective norms) towards plagiarism. The positive attitude towards plagiarism reflects approval and justification of such behaviour. Negative attitude towards plagiarism expresses condemnation and disapproval of plagiarism. Subjective norm expresses common thinking about the prevalence of plagiarism and the acceptance of such behaviour in the academic and scientific communities. A total of 104 responses were received. Out of which 71% were females and 29% were males.60.38% of the respondents agreed that sometimes one can't avoid plagiarism and 13.21% disagreed and 26.42% of them were neutral. Among respondents 58.4% agreed that it is justified to use previous descriptions of method as it won't change. Chi square test

shows that this difference was significant (p=0.000). Within the limitations of the present study, the attitude of the dental students reflect good levels of seriousness and awareness with which plagiarism is perceived. Postgraduate students had moderately better knowledge on plagiarism when compared to undergraduates. Females showed better knowledge compared to males.

Keywords: Plagiarism, dental postgraduate students, faculty members, scientific misconduct

INTRODUCTION

Globalization and technology has numerous advancements so that even scholarly research could not keep itself at bay from it. Globalization has the capability of eroding or universalizing any contents. These colossal and rapid changes have affected researchers, institutions and publications around the world. The new world of scholarly research has become both compact and at the same time vast. It is compact because researchers can easily log onto a computer and gain instant access to any amount of data, association and funding sources **(Memon and Mavrinac, 2020)**. They are not bound anymore by the limited resources of their institutions, and now have comprehensive access and power. Scholarly research has become larger because now there are more participants in the turf, thereby ever increasing the levels of competition. Submission for publications as well as refutation and withdrawal, have become omnipresent in this scenario **(Lim and Huh, 2019)**. As global and scientific influence modifies the world of academic

research, the means and incentives for scholarly wrongdoing are increasing. Even though publishing has always been one of the motivating factors of scholarly research, it has now reached a new magnitude. The impending negative impacts of not getting published on a regular basis is pushing researchers to resort to unfair practices in order to increase their chances of acceptance into distinguished journals **(Singh, 2007)**.

Professional scientific work in the field of biomedicine requires great responsibility, total commitment and serious and honest lifetime work and learning. According to Robert Merton, an ideal quality of a scientist is to have a passion for truth. Scientific misconduct has been the focus of interest in recent years. Research misconduct usually includes fabrication, falsification, plagiarism, and other unethical behaviour in professional scientific research **(Sapatnekar, 2004)**.

Out of these, plagiarism is the most frequent type of misconduct. Plagiarism is defined as unauthorised appropriation of

another's work, ideas, methods, results or words without acknowledging the source and original can be attributed to the increased motivation towards plagiarism. The first and foremost is the wealth of information which could be accessed at our fingertips through the internet facility. This easy access has made the copy and paste technique to become more widely used in order to copy the ideas, words and works of others into one's own research work **(Green, 2002; Singh, 2007)**.

Another reason which could initiate the researcher to the conduct of plagiarism is the pressure within oneself to increase the number of publications as a credit of his own. The focus of the research regulation body and also the peer review board of the journals regarding the publications also has added to the reasons. Thus the quantity of work increased but not the quality.

Our department is passionate about child care, we have published numerous high quality articles in this domain over the past 3 years **(Govindaraju, Jeevanandan and Subramanian, 2017a, 2017b; Panchal, Gurunathan and Shanmugaavel, 2017; Ravikumar, Jeevanandan and Subramanian, 2017; Jeevanandan and Govindaraju, 2018; Nair *et al.*, 2018; Ravikumar *et al.*, 2018, 2019; Ravindra *et***

al.*, 2018, 2019; Subramanyam *et al.*, 2018; Vishnu Prasad *et al.*, 2018; Jeevanandan, Ganesh and Arthilakshmi, 2019; Ramadurai *et al.*, 2019; Ramakrishnan, Dhanalakshmi and Subramanian, 2019; Veerale Panchal, Jeevanandan and Subramanian, 2019; Vignesh *et al.*, 2019; V. Panchal, Jeevanandan and Subramanian, 2019; Samuel, Acharya and Rao, 2020). Previously our team has a rich experience in working on various research projects across multiple disciplines. **(Muthukrishnan and Warnakulasuriya, 2018), (Govindaraju, Neelakantan and Gutmann, 2017), (Chen *et al.*, 2019), (Priyanka *et al.*, 2017), (Sitharthan *et al.*, 2019), (Priyadharsini *et al.*, 2018), (Azeem and Sureshbabu, 2018), (Wu *et al.*, 2019), (Abitha and Santhanam, 2019), (Manohar and Abilasha, 2019), (Venu, Dhana Raju and Subramani, 2019), (Wang *et al.*, 2019), (Girija, Jayaseelan and Arumugam, 2018), (Sheriff, Ahmed Hilal Sheriff and Santhanam, 2018), (Dhinesh *et al.*, 2017)**. Now the growing trend in this area motivated us to pursue this project. With this inspiration we planned to pursue research on assessing the knowledge and attitude of dental undergraduate and postgraduate students towards plagiarism in a private dental college.

MATERIALS AND METHODS

The present study was a cross-sectional survey conducted in a hospital based university setting. The study was approved by the Institutional Ethical Committee. Dental undergraduate and postgraduate students who were willing to participate in the study were included. Students who were not willing to participate were excluded from the study.

The questions used in the present study were adapted from one of previous similar researches done by **Khaimar *et al.* 2019**. The questionnaire was a close ended, standard questionnaire containing 23 statements on a 3 point Likert scale (1 – disagree, 2 – neither agree nor disagree, 3 – agree) for each statement. There were 12 questions related to positive attitude towards plagiarism. There were 7 statements to check the negative attitude towards plagiarism. Subjective norms towards plagiarism were assessed by 4 statements. All the questions under each attitudinal factor were haphazardly arranged in order to avoid response bias.

Questionnaires were distributed among the students using an online platform (Google forms). The response data obtained was compiled systematically in Microsoft Excel sheet and subjected to statistical analysis was performed using SPSS version 22 by IBM Corporation. Chi-square test was done to assess any association of gender or course degree with the response obtained from the students. A p-value of <0.05 was considered statistically significant.

RESULTS AND DISCUSSION

The total responses obtained for the present study were 108. Among the respondents 71.7% were females and 28.3% were males **(Figure 1)**. Among 108 responses received 39.62% were postgraduates and 60.38% were undergraduates **(Figure 2)**.

Positive attitude towards plagiarism:

About 60.38% of the respondents agreed that if sometimes one cannot avoid using other people's words without citing the source because there are only so many ways to describe something **(Figure 3)**. Among the respondents, 58.4% agreed that if it is justified to use previous descriptions of a method because the method itself remains the same **(Figure 4)**. A total of 50.94% of respondents agreed that self plagiarism is not punishable as it is not harmful (Figure 5) About 41.5% of the respondents agreed that plagiarized parts of a paper may be ignored if the paper is of great scientific value **(Figure 6)**. About 49.06% of the respondents believed that self plagiarism should not be

punishable in the same way as plagiarism **(Figure 7)**. Among the respondents, 45.2% agreed to the fact that young researchers should get milder punishment for plagiarism **(Figure 8)**. Among respondents, 49.06% of them disagreed that one cannot write well in a foreign language (e.g., English), it is justified to copy parts of a similar paper already published in that language **(Figure 9)**. About 37.74% of the respondents disagreed that one cannot write a scientific paper without plagiarizing **(Figure 10)**. About 49.06% of the respondents agreed that short deadlines give them the right to plagiarize **(Figure 11)**. Among the respondents 41.51% of them agreed that they can translate a part of a paper when they don't know what to write **(Figure 12)**. About 47.17% of the respondents disagreed that it is justified to use one's own previously published work without providing citation in order to complete the current work **(Figure 13)**. Among the respondents, 56.60% of the respondents agreed that if a colleague of theirs' allows to copy his/her work it is justified because they have their permission **(Figure 14)**.

Negative attitude towards plagiarism:

About 64.15% of the respondents agreed that plagiarists do not belong to the scientific community **(Figure 15)**. Among

the respondents, 47.17% of them agreed that the names of the authors who plagiarized should be disclosed to the scientific community **(Figure 16)**. About 43.40% of the respondents disagreed that in times of moral and ethical decline, it is important to discuss issues such as plagiarism and self-plagiarism **(Figure 17)**. About 39.62% of the respondents disagreed that plagiarism is as bad as cheating in the exam **(Figure 18)**. Among the respondents 45.28% agreed that plagiarism improves investigative spirit **(Figure 19)**. About 11.32% disagreed that a plagiarized paper does no harm to science **(Figure 20)**. About 43.40% of the respondents agreed that as plagiarism is taking other people's words rather than tangible assets, it should not be considered as an offense **(Figure 21)**.

Subjective norms towards plagiarism:

Among the respondents, 47.17% disagreed that authors say that they don't plagiarize but in fact they do **(Figure 22)**. About 41.51% disagreed that those who said that they never plagiarized are lying and 41.51% of them remained neutral **(Figure 23)**. Among the respondents, 41.51% of them disagreed that sometimes they are tempted to plagiarize because of peers **(Figure 24)**. About 52.83% of the respondents agreed that

they keep plagiarising because they have not been caught yet **(Figure 25)**.

Comparisons based on gender and course of study:

On comparing the gender of respondent with response to the statement that if it is justified to use previous descriptions of a method because the method itself remains the same, a higher percentage of females agreed (77.42%), while a higher percentage of males disagreed (60%) **(Figure 26)**. This difference was statistically significant (Chi-square test, p=0.000). On comparing the course degree and response to the statement that if it is justified to use previous descriptions of a method because the method itself remains the same, a higher percentage of postgraduate students neither agreed nor disagreed (52.94%), while a higher percentage of undergraduates agreed (67.74%) **(Figure 27)**. This difference was statistically significant (Chi-square test, p=0.000).

Our institution is passionate about high quality evidence based research and has excelled in various fields **(Pc, Marimuthu and Devadoss, 2018; Ramesh *et al.*, 2018; Vijayashree Priyadharsini, Smiline Girija and Paramasivam, 2018; Ezhilarasan, Apoorva and Ashok Vardhan, 2019; Ramadurai *et al.*, 2019; Sridharan *et al.*, 2019; Vijayashree Priyadharsini, 2019; Chandrasekar *et al.*, 2020; Mathew *et al.*, 2020; R *et al.*, 2020; Samuel, 2021)**. We hope this study adds to this rich legacy.
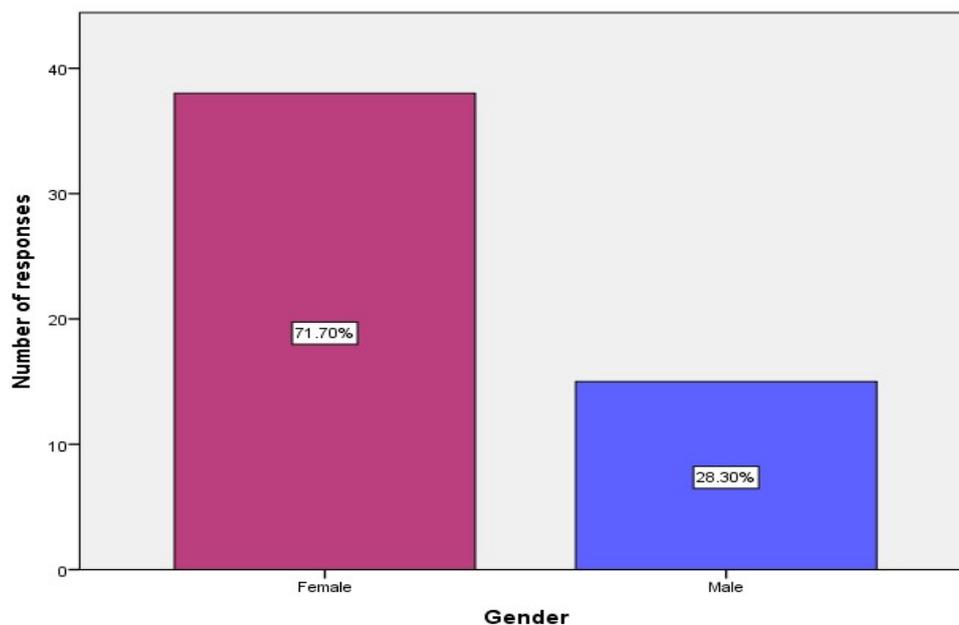
Figure 1: Bar graph represents the distribution of the respondents based on gender. Among 108 responses received 71.7% were females (pink) and 28.30% were males (blue).
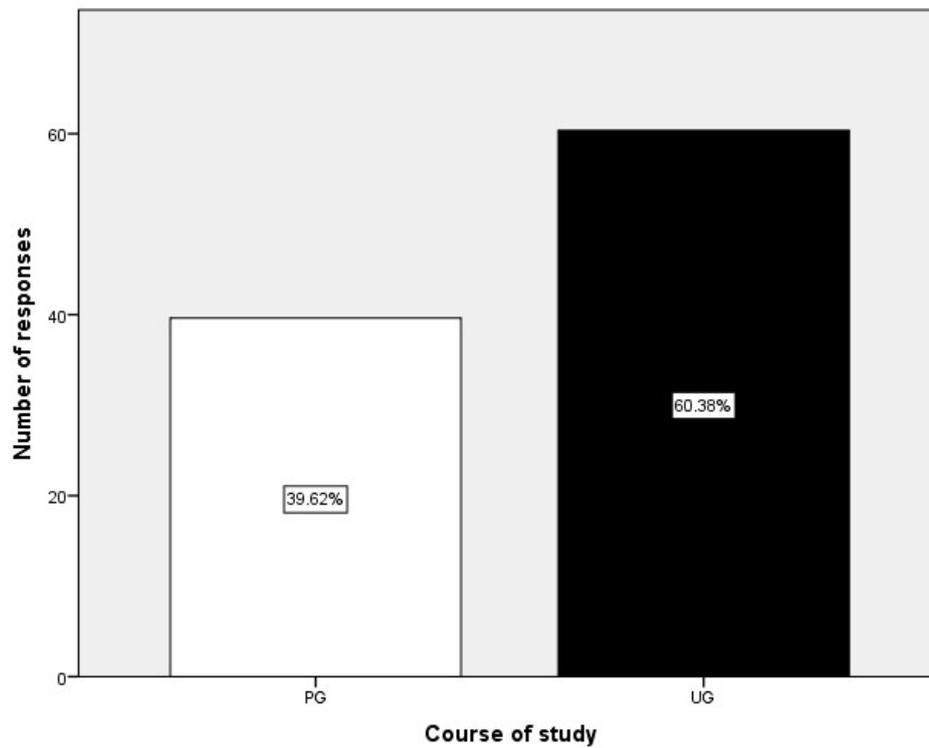
Figure 2: Bar graph represents the distribution of the respondents based on course of study. Among 108 responses received 39.62% were postgraduates (white) and 60.38% were undergraduates (black).
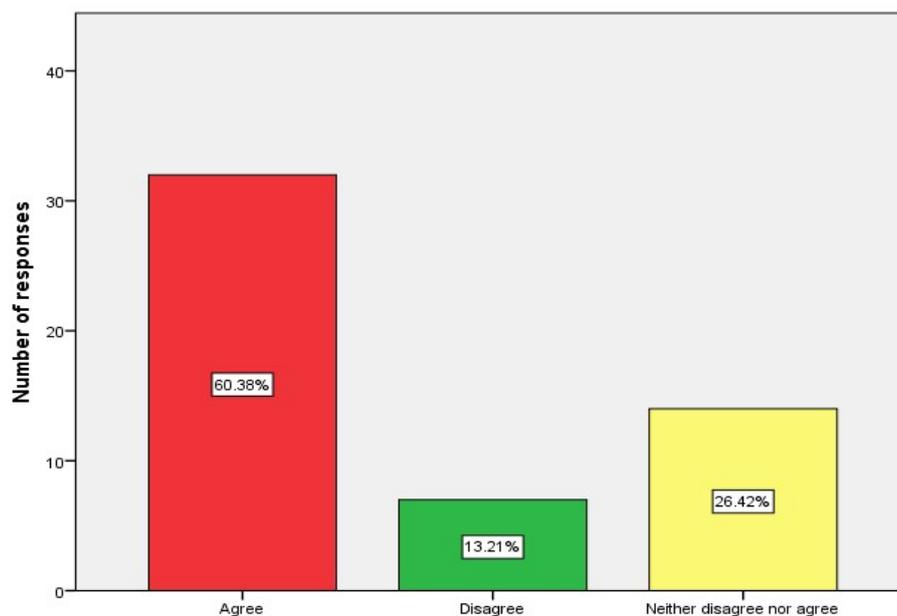

Figure 3 : Bar graph represents the distribution of responses when asked if sometimes one cannot avoid using other people's words without citing the source because there are only so many ways to describe something. X-axis represents the 3-point Likert scale of responses and Y-axis represents the number of responses. About 60.38% of respondents agreed to the statement (red).
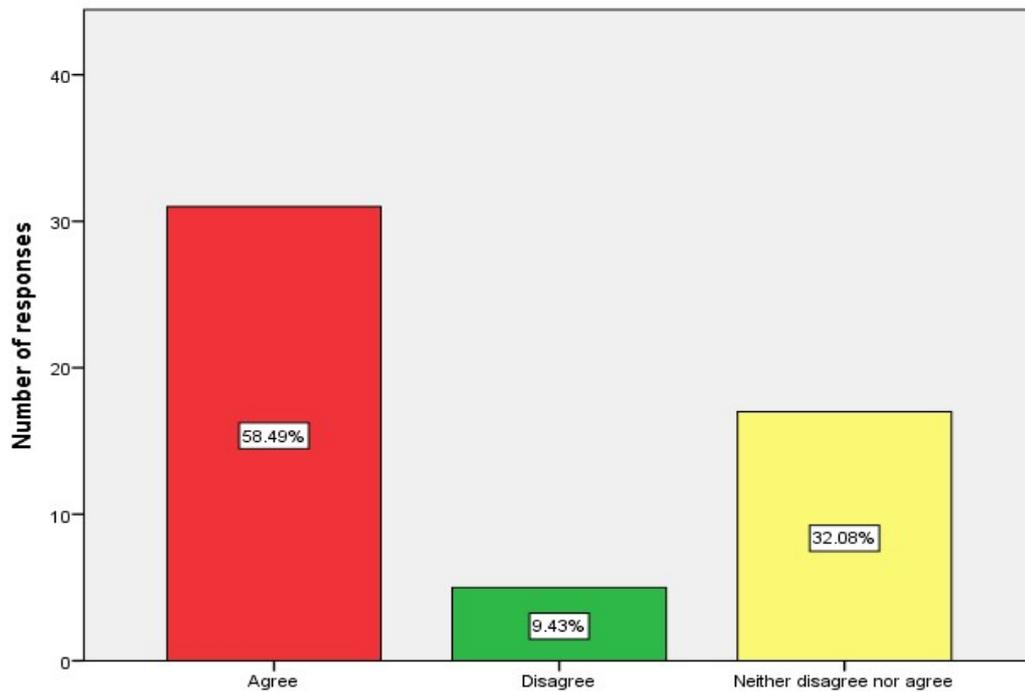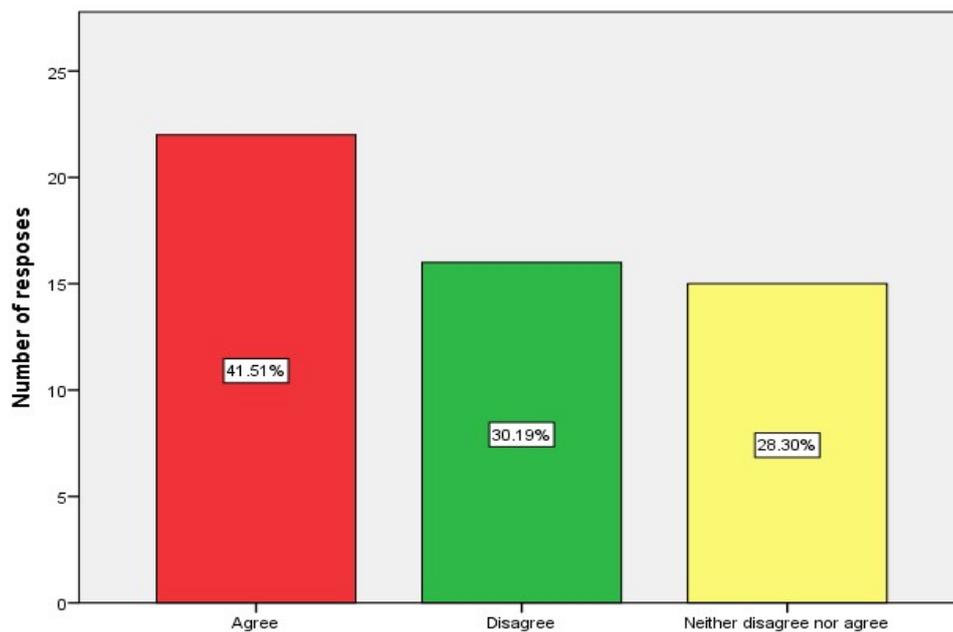
Figure 4: Bar graph represents the distribution of responses when asked if it is justified to use previous descriptions of a method because the method itself remains the same. X-axis represents the 3-point Likert scale of responses and Y-axis represents the number of responses. About 58.49% of respondents agreed to the statement (red).
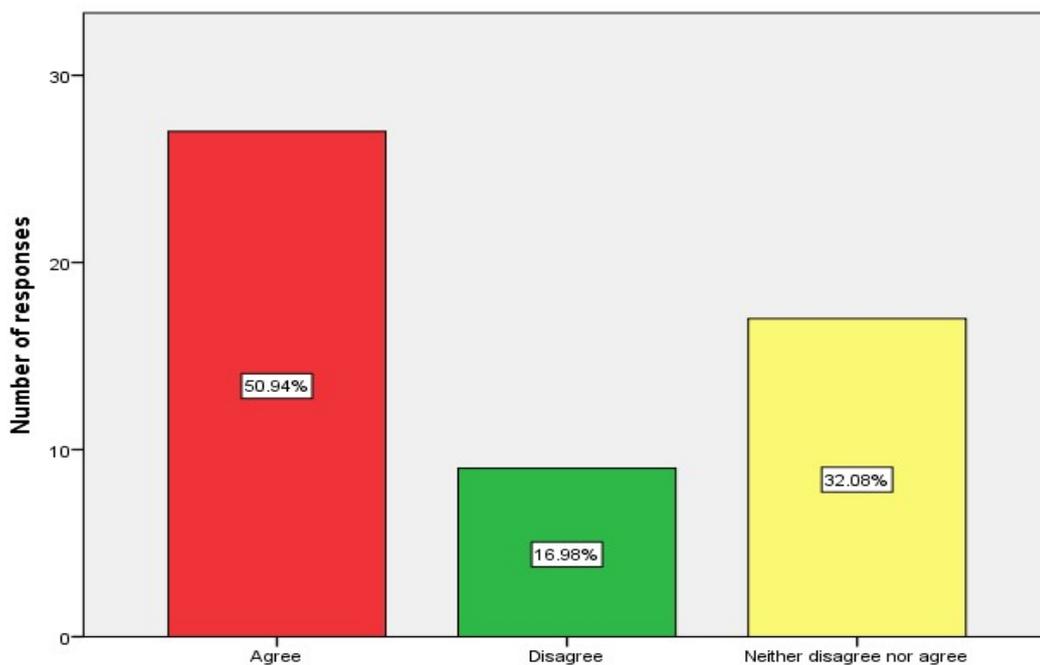
Figure 5: Bar graph represents the distribution of responses when asked if self-plagiarism is not punishable because it is not harmful. X-axis represents the 3-point Likert scale of responses and Y-axis represents the number of responses. About 50.94% of respondents agreed to the statement (red).

Figure 6: Bar graph represents the distribution of responses when asked if plagiarized parts of a paper may be ignored if the paper is of great scientific value. X-axis represents the 3-point Likert scale of responses and Y-axis represents the number of responses. About 41.51% of respondents agreed to the statement (red).
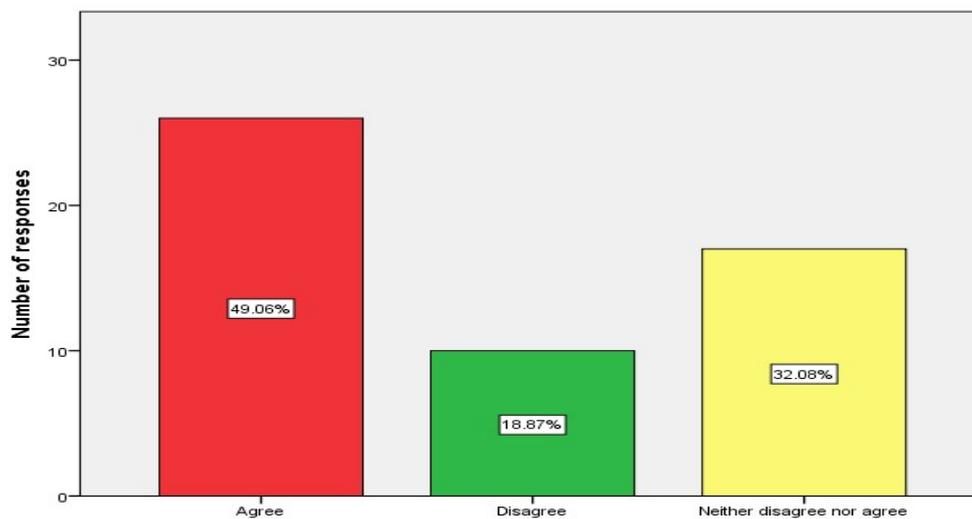

Figure 7: Bar graph represents the distribution of responses when asked if self plagiarism should not be punishable in the same way as plagiarism. X-axis represents the 3-point Likert scale of responses and Y-axis represents the number of responses. About 49.06% of respondents agreed to the statement (red).
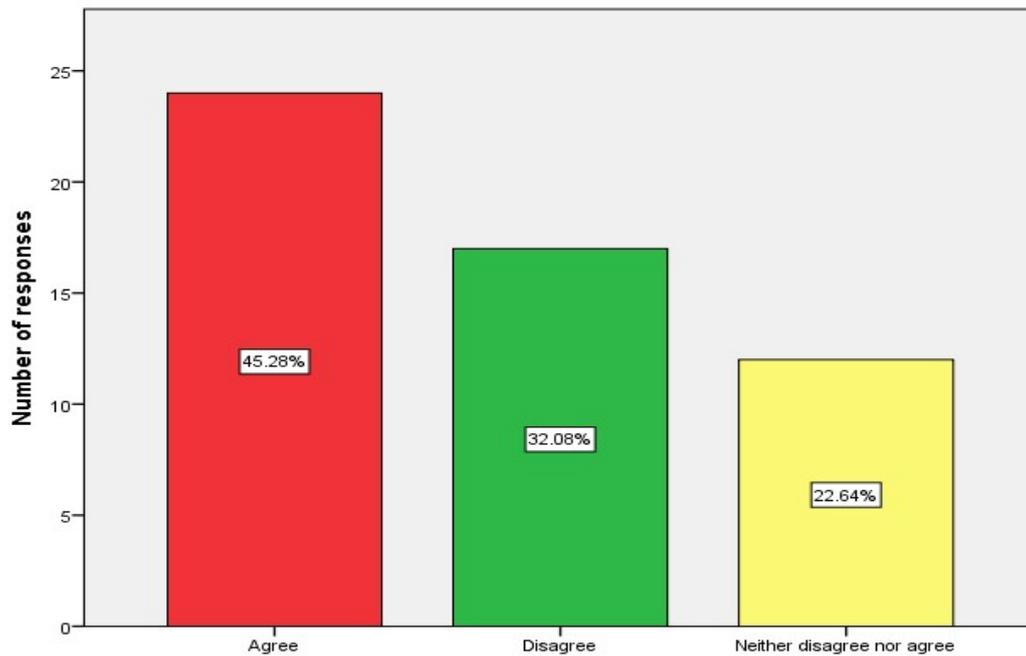
Figure 8: Bar graph represents the distribution of responses when asked if young researchers should get milder punishment for plagiarism. X-axis represents the 3-point Likert scale of responses and Y-axis represents the number of responses. About 45.28% of respondents agreed to the statement (red).
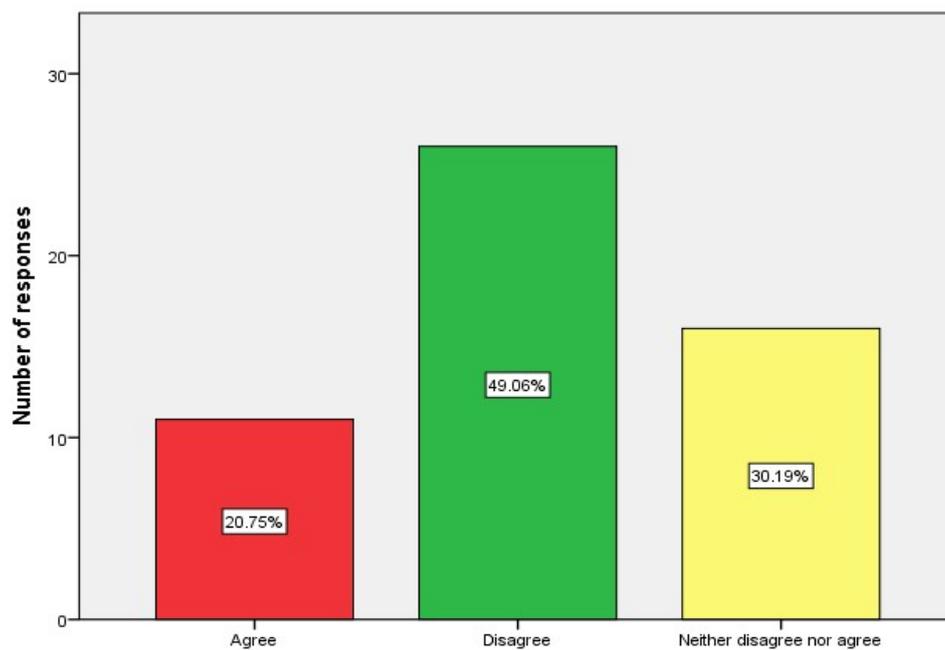

Figure 9: Bar graph represents the distribution of responses when asked if one cannot write well in a foreign language (e.g., English), it is justified to copy parts of a similar paper already published in that language. X-axis represents the 3-point Likert scale of responses and Y-axis represents the number of responses. About 49.06% of respondents disagreed to the statement (green).
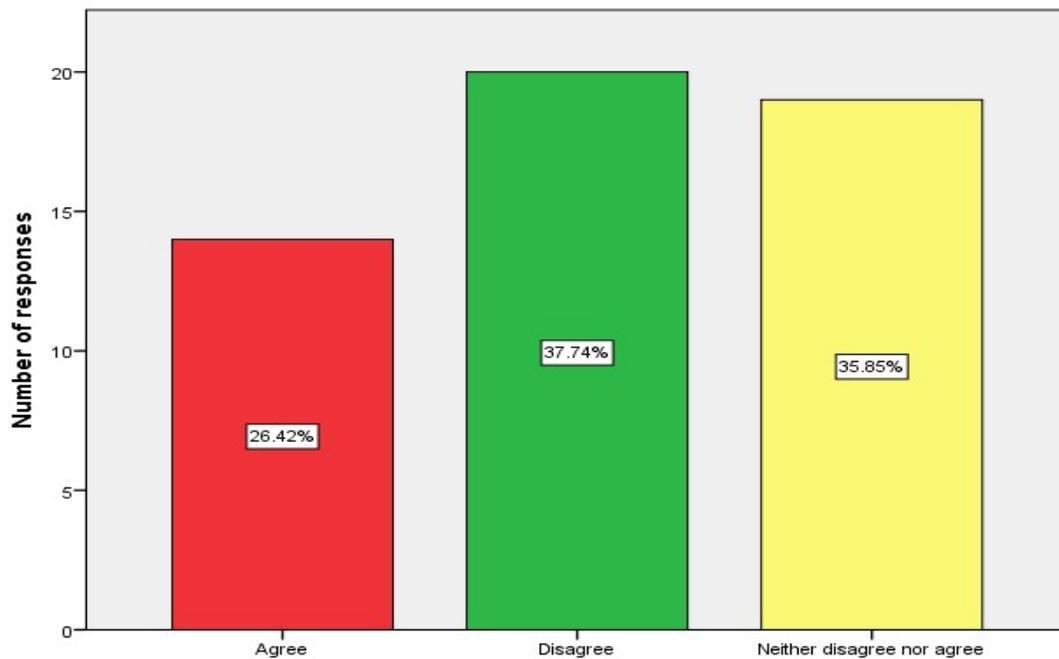
Figure 10: Bar graph represents the distribution of responses when asked if one could not write a scientific paper without plagiarizing. X-axis represents the 3-point Likert scale of responses and Y-axis represents the number of responses. About 37.74% of respondents disagreed to the statement (green).
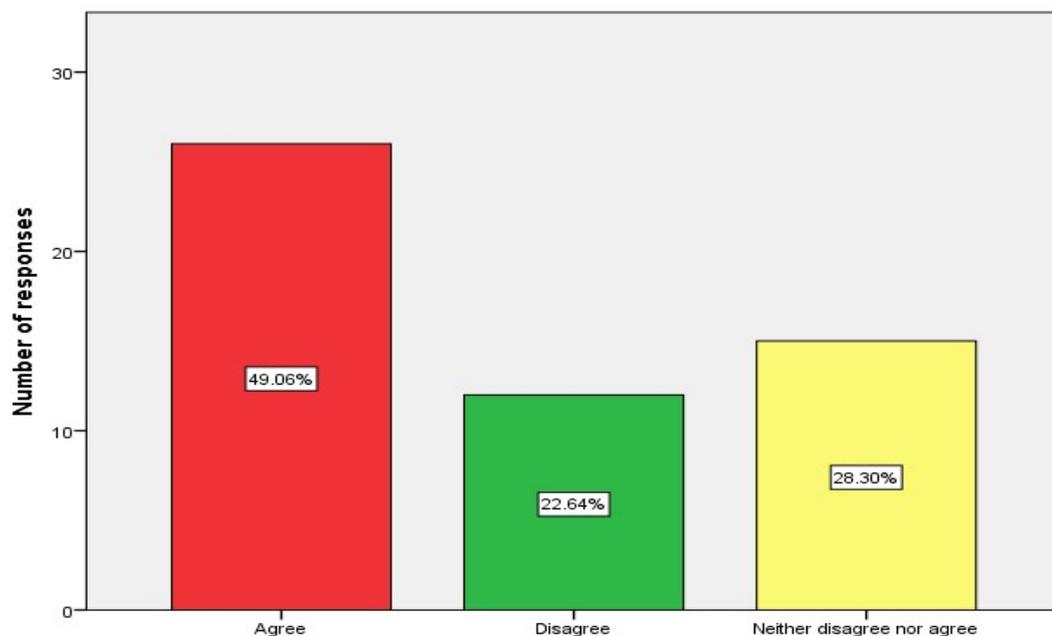

Figure 11: Bar graph represents the distribution of responses when asked if short deadlines give them the right to plagiarize. X-axis represents the 3-point Likert scale of responses and Y-axis represents the number of responses. About 49.06% of respondents agreed to the statement (red).
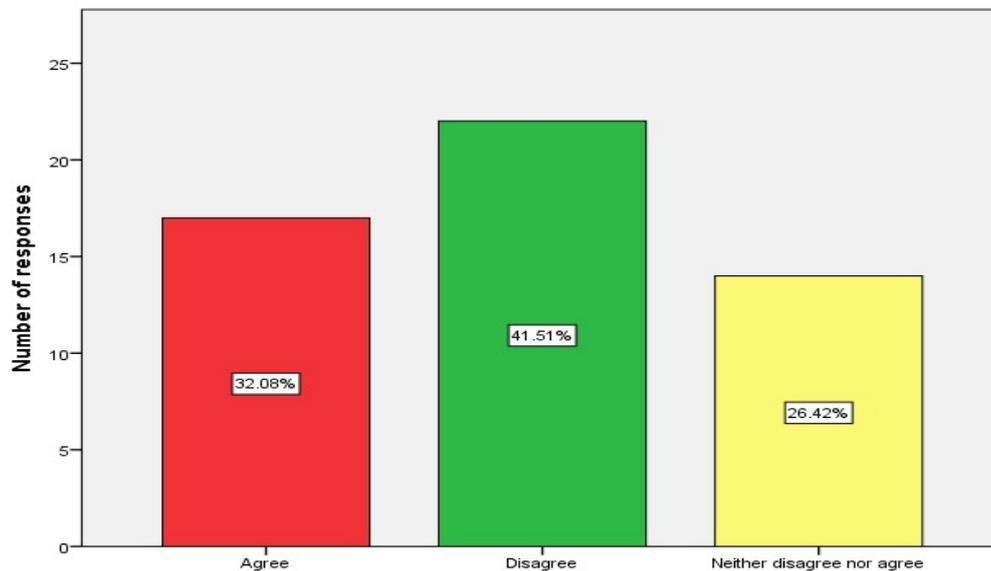
Figure 12: Bar graph represents the distribution of responses when asked if one would translate a part of paper when he doesn't know what to write. X-axis represents the 3-point Likert scale of responses and Y-axis represents the number of responses. About 41.51% of respondents disagreed to the statement (green).
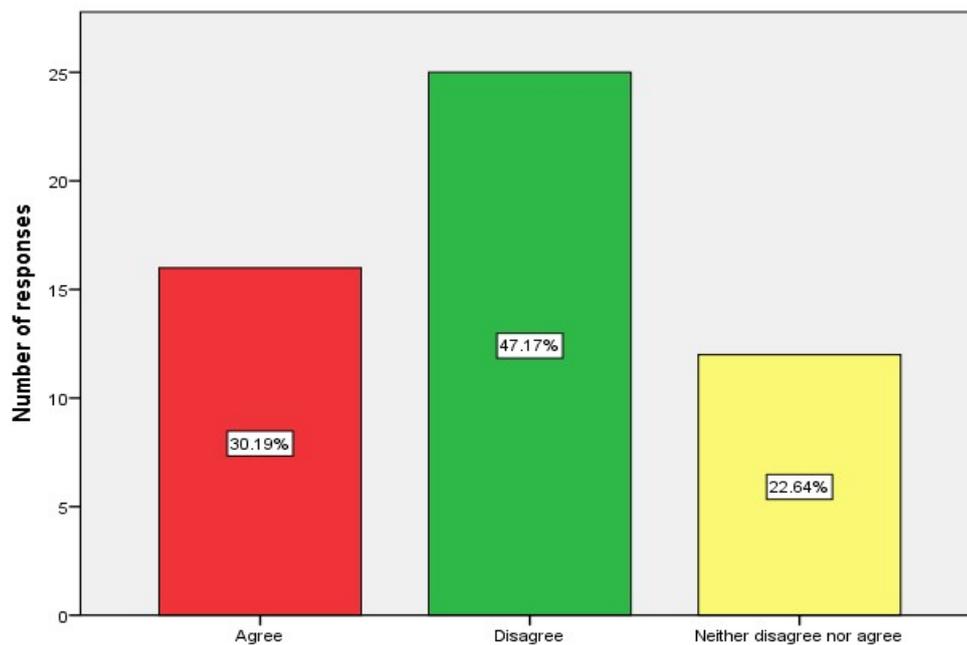

Figure 13: Bar graph represents the distribution of responses when asked if it is justified to use one's own previously published work without providing citation in order to complete the current work. X-axis represents the 3-point Likert scale of responses and Y-axis represents the number of responses. About 47.17% of respondents disagreed to the statement (green).
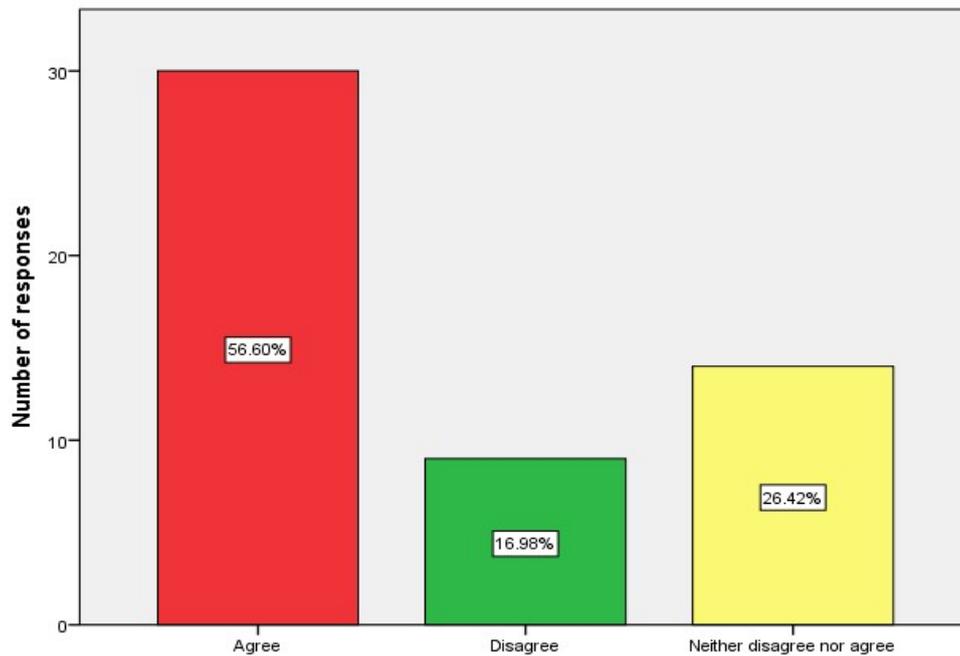
Figure 14: Bar graph represents the distribution of responses when asked if a colleague of theirs allows them to copy their work is that justified as they will have their permission. X-axis represents the 3-point Likert scale of responses and Y-axis represents the number of responses. About 56.60%% of respondents agreed to the statement (red).
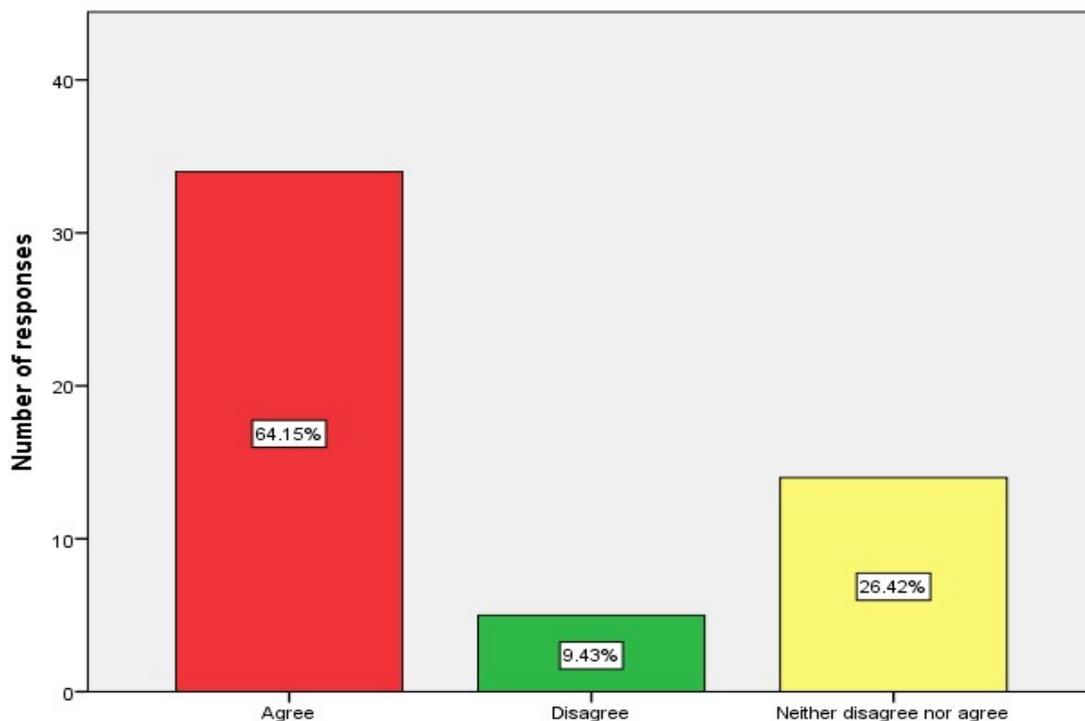

Figure 15: Bar graph represents the distribution of responses when asked if plagiarists do not belong to the scientific community . X-axis represents the 3-point Likert scale of responses and Y-axis represents the number of responses. About 64.15% of respondents agreed to the statement (red).
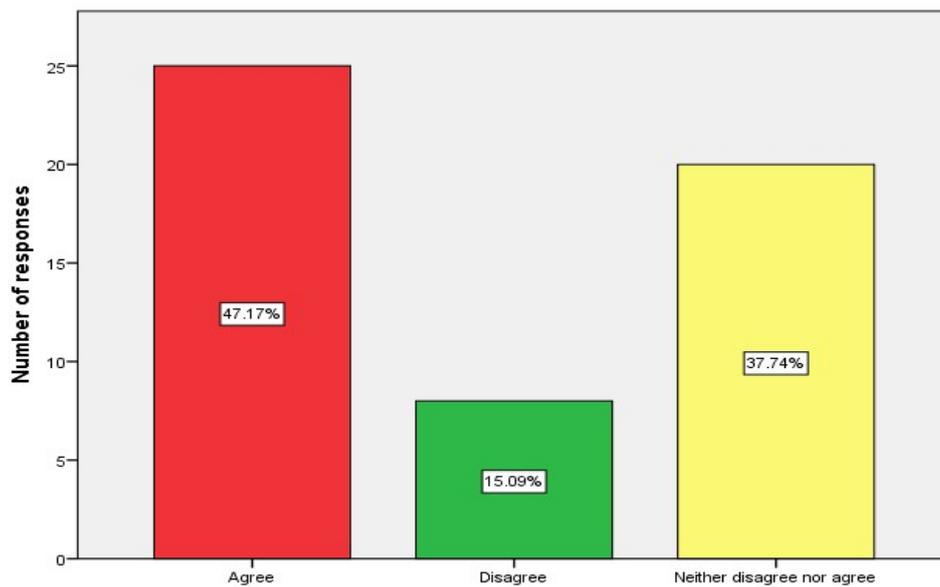
Figure 16: Bar graph represents the distribution of responses when asked whether the names of the authors who plagiarized should be disclosed to the scientific community. X-axis represents the 3-point Likert scale of responses and Y-axis represents the number of responses. About 47.17% of respondents agreed to the statement (red).
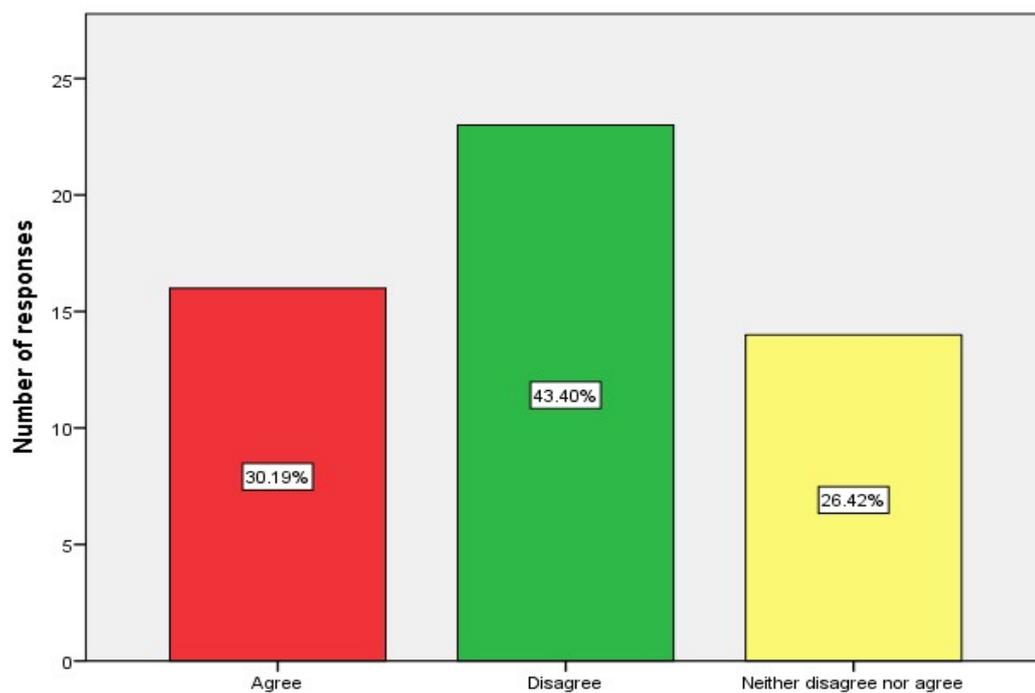

Figure 17: Bar graph represents the distribution of responses when asked if in times of moral and ethical deadline, it is important to discuss issues such as plagiarism and self-plagiarism. X-axis represents the 3-point Likert scale of responses and Y-axis represents the number of responses. About 43.40% of respondents disagreed to the statement (green).

Figure 18: Bar graph represents the distribution of responses when asked if plagiarism is as bad as cheating on an exam. X-axis represents the 3-point Likert scale of responses and Y-axis represents the number of responses. About 39.62% of respondents disagreed to the statement (green).

Figure 19: Bar graph represents the distribution of responses when asked if plagiarism improves the investigative spirit. X-axis represents the 3-point Likert scale of responses and Y-axis represents the number of responses. About 45.28% of respondents agreed to the statement (red).

Figure 20: Bar graph represents the distribution of responses when asked if a plagiarized paper does any harm to science. X-axis represents the 3-point Likert scale of responses and Y-axis represents the number of responses. About 45.28% of respondents agreed to the statement (red).

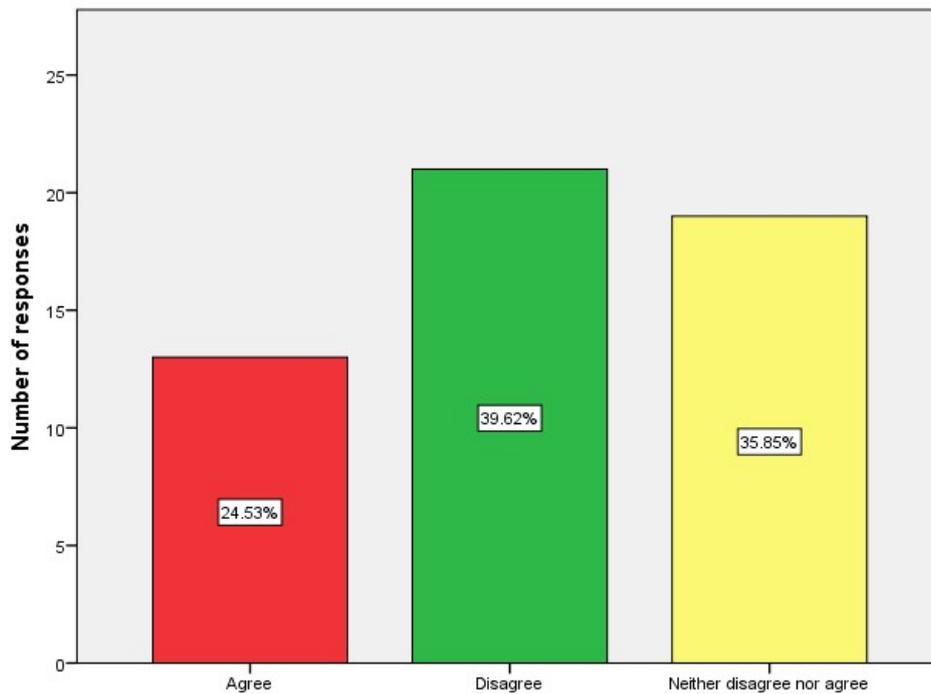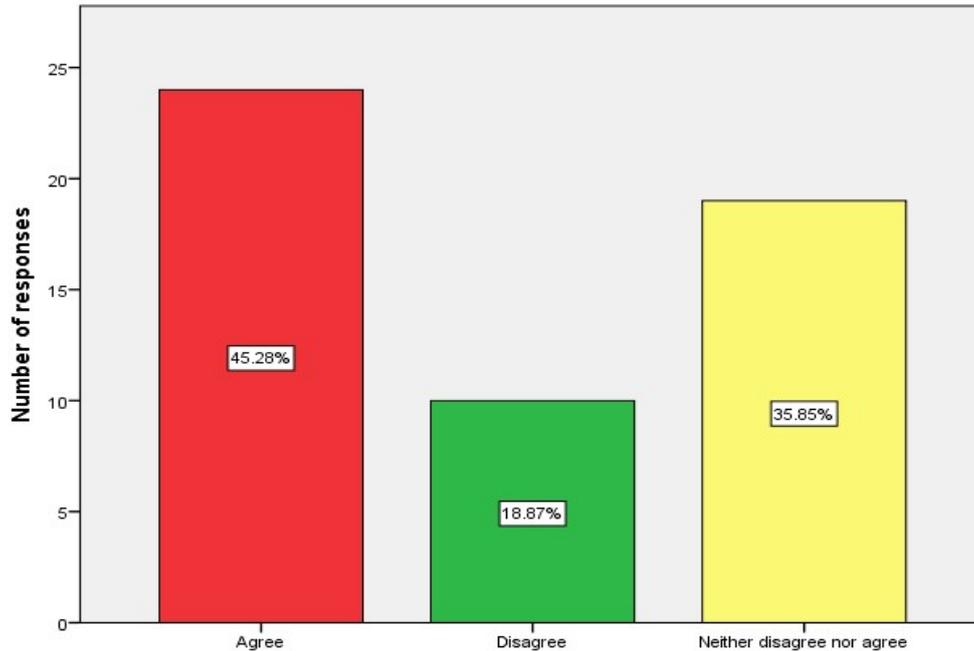**Figure 21: Bar graph represents the distribution of responses when asked since plagiarism is taking other people's words rather than tangible assets, it should be considered as a serious offense. X-axis represents the 3-point Likert scale of responses and Y-axis represents the number of responses. About 43.40% of respondents agreed to the statement (red).**
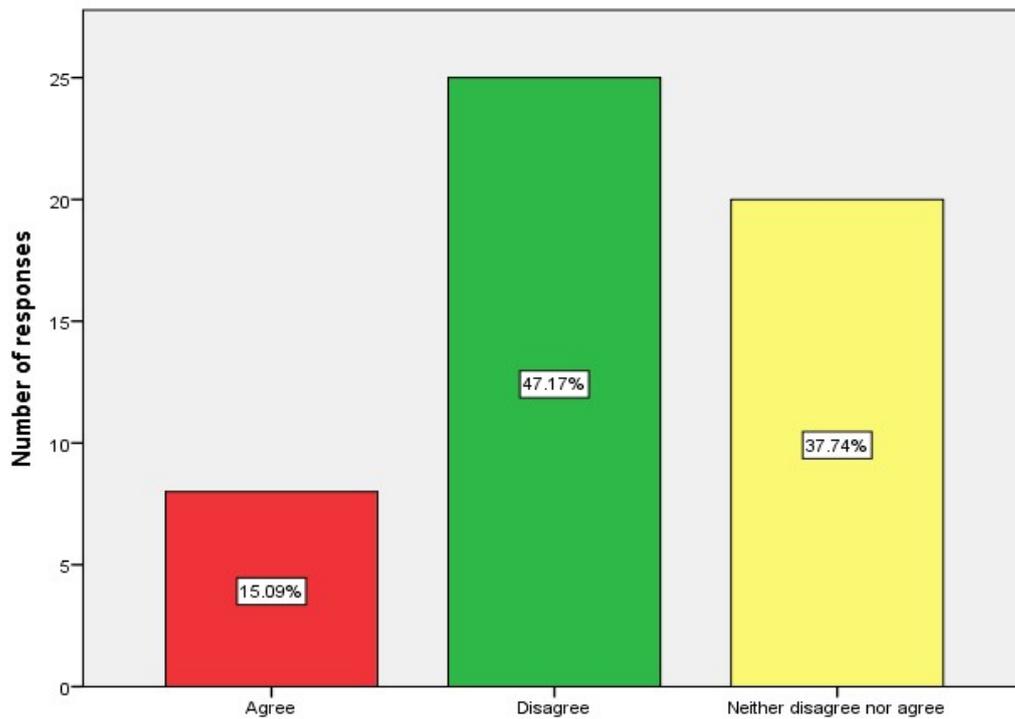
Figure 22: Bar graph represents the distribution of responses when asked if authors say they don't plagiarize but they do. X-axis represents the 3-point Likert scale of responses and Y-axis represents the number of responses. About 47.17% of respondents agreed to the statement (green).
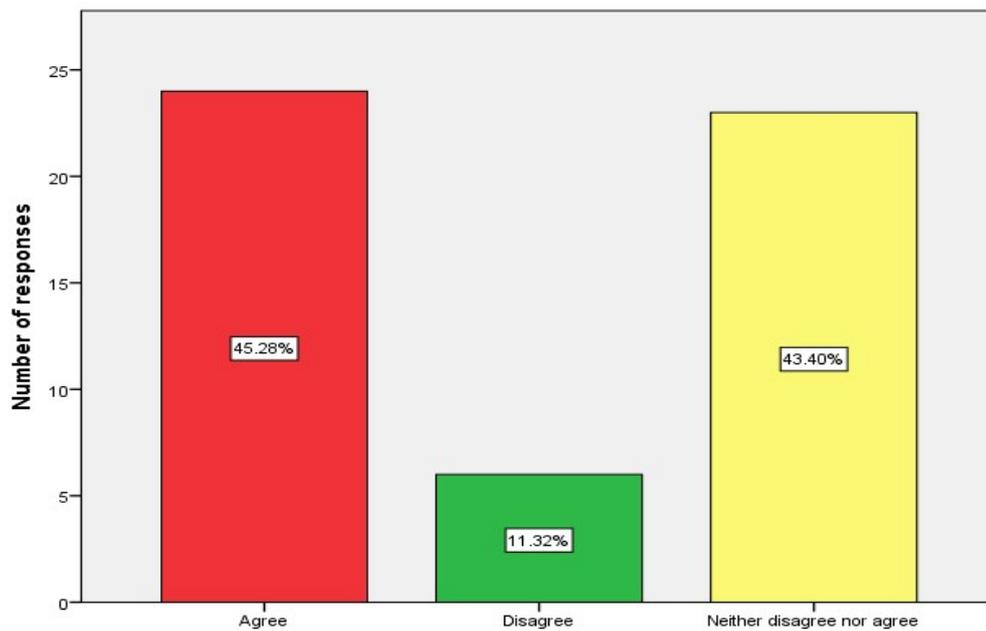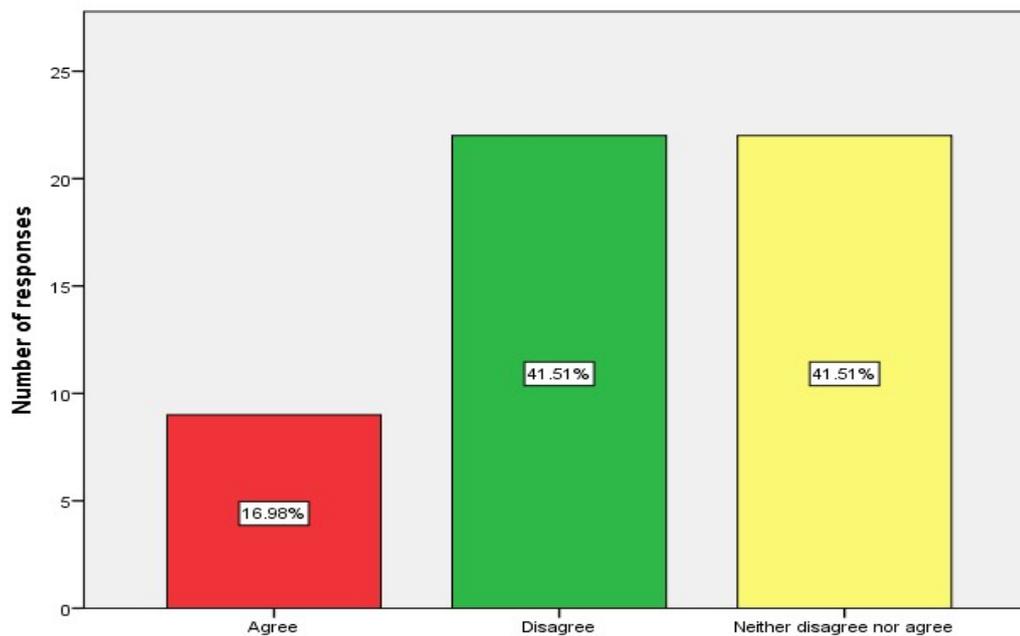

Figure 23: Bar graph represents the distribution of responses when asked if those who said they never plagiarized are lying. X-axis represents the 3-point Likert scale of responses and Y-axis represents the number of responses. About 41.51% of respondents disagreed (green) with the statement and another 41.51% neither agreed nor disagreed (yellow).
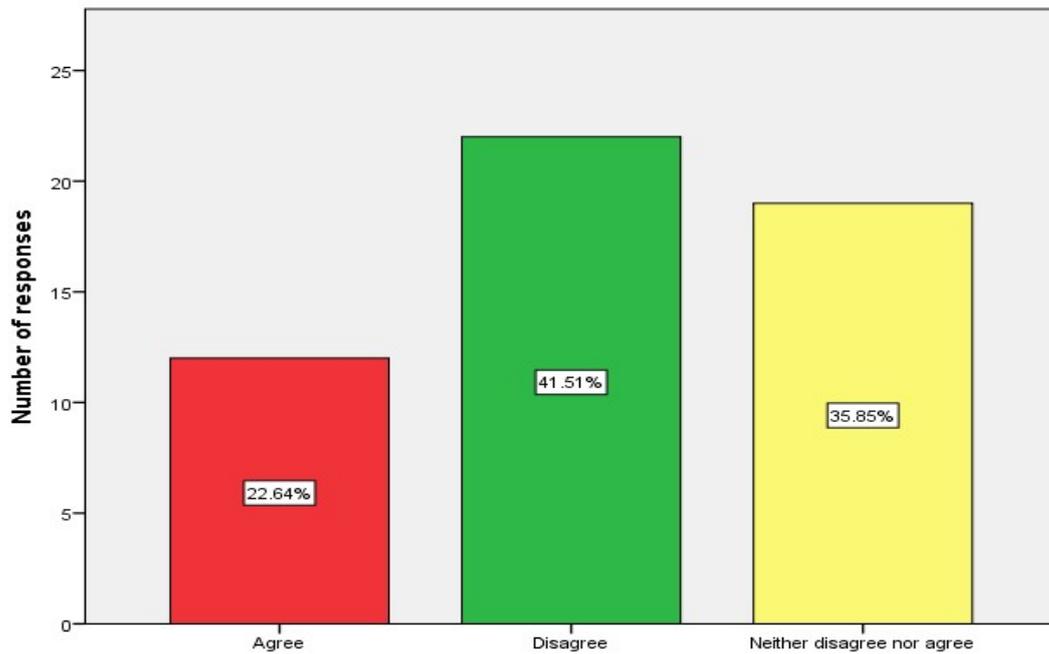
Figure 24: Bar graph represents the distribution of responses when asked if one gets tempted to plagiarize because of their peers doing it. X-axis represents the 3-point Likert scale of responses and Y-axis represents the number of responses. About 41.51% of respondents disagreed to the statement (green).
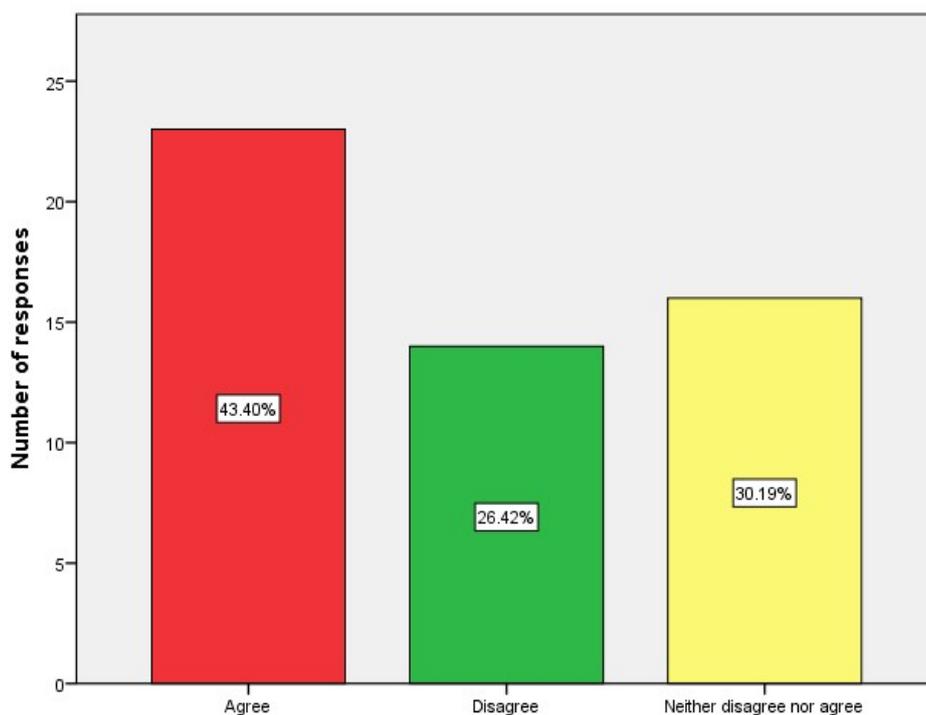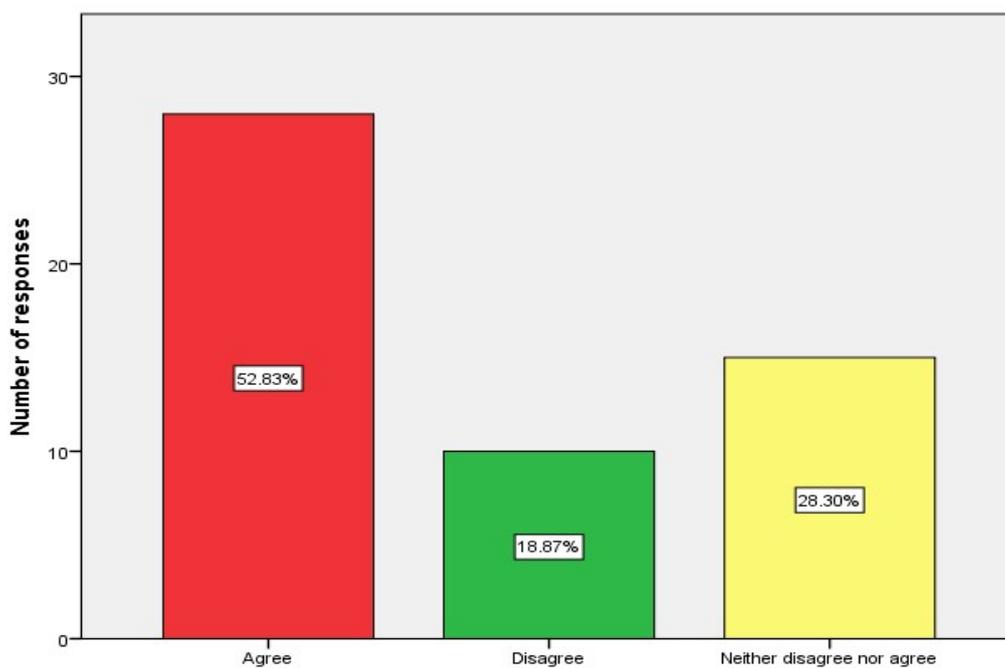

Figure 25: Bar graph represents the distribution of responses when asked if one keeps plagiarizing because they have not been caught yet. X-axis represents the 3-point Likert scale of responses and Y-axis represents the number of responses. About 52.83% of respondents agreed to the statement (red).
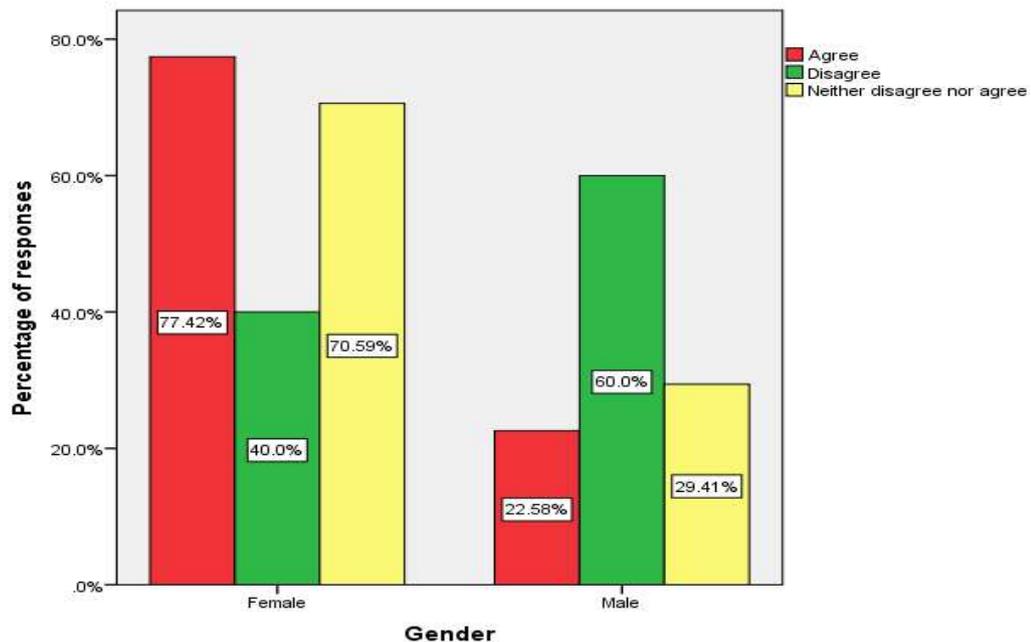
Figure 26: Bar graph denotes the association between the gender and response to the statement that if it is justified to use previous descriptions of a method because the method itself remains the same. Higher percentage of females agreed (77.42% - red) while higher percentage of males disagreed (60% - green) and this difference was statistically significant. (Chi-square test, p=0.000 - statistically significant).
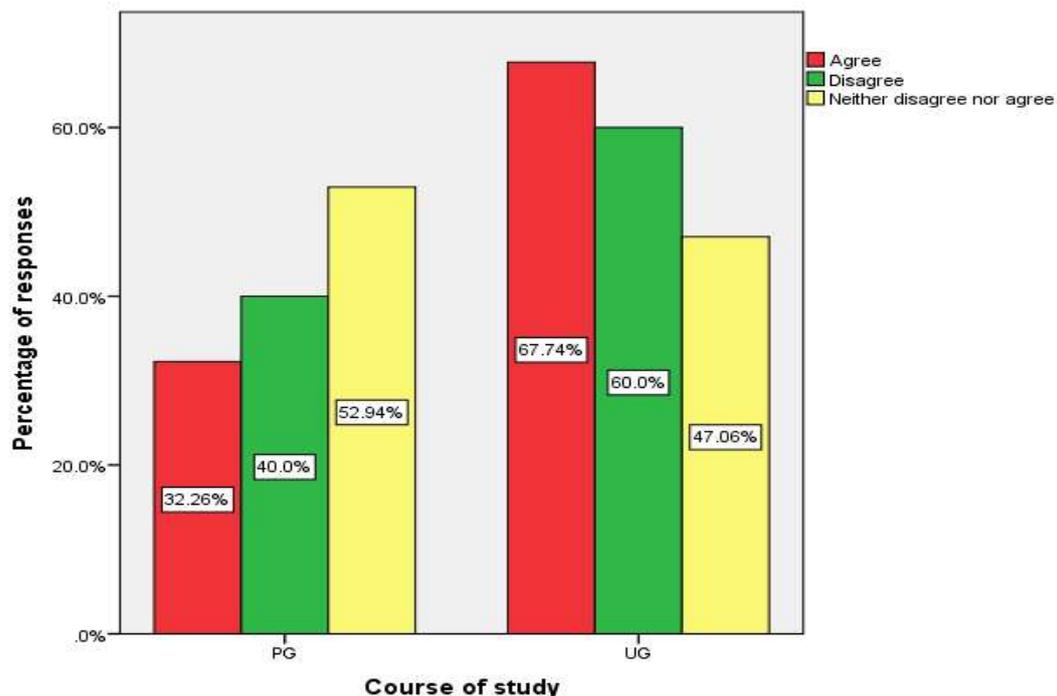
Figure 27: Bar graph denotes the association between the course degree and response to the statement that if it is justified to use previous descriptions of a method because the method itself remains the same. Higher percentage of postgraduate students neither agreed nor disagreed (52.94% - yellow) while higher percentage of undergraduates agreed (67.74% - red) and this difference was statistically significant. (Chi-square test, p=0.000 - statistically significant).

Based on the responses obtained, majority of the respondents show a positive attitude towards plagiarism with fewer respondents towards the negative attitude towards plagiarism. Postgraduates showed moderate knowledge as compared to undergraduates. Females showed positive attitude towards plagiarism when compared to males. A similar study done by Singh *et al* stated that Most of the dental professionals know about plagiarism, and they believe that plagiarism cannot be avoided successfully. Pressure to publish was a major reason along with several others, which accounts for more and more indulgence in plagiarism **(Mason, 2009; Singh and Guram, 2014)**.

Scientific misconduct are commonly recognized for the fabrication and falsification of data and plagiarism, which has been the focus of interest in recent years. Out of these, plagiarism is the most frequent type of misconduct. In the present study the participants, postgraduate students and faculty members were found to have moderate attitudes towards plagiarism. The results of the present study are consistent with that of the study conducted by **Pupovac V *et al*. (Pupovac and Fanelli, 2015)**. Exploration of the available literature revealed no Indian studies that were conducted to assess the attitude towards

plagiarism among dental postgraduate students and faculty members. Thus, these particular groups were selected as the postgraduates and the faculty will be conducting research as part of their curriculum and profession **(Mason, 2009), (Zhang, 2014)**.

According to a study conducted by **Park.C *et al*** plagiarism by students is common and getting more so (particularly with increased access to digital sources, including the Internet), that there are the common reasons why students plagiarise and they often rationalise their cheating behaviour. This downplays the importance of plagiarism by themselves and their peers **(Park, 2017)**.

Plagiarism is an iniquitous competition and definitely a contravene of copyright law moral rights because the person who is accused is stealing ideas of some other person or presenting some other person's work as his own without the required acknowledgment **(Green, 2002)**.

Further research should be conducted on a large scale for generalizability. We recommend that the peer review board should be equipped with software to detect plagiarism. The university should come up with rules and regulations to prevent plagiarism and also install software to detect

plagiarism in the work submitted by the students as well as faculty members. A committee should be established in the respective institutions to detect plagiarism.

The advantages of the present study include that the results were compared with the course of study which showed the attitude of undergraduates and postgraduates towards plagiarism. Also the results had higher internal validity. But the sample size was smaller and limited to the university which reduces the external validity of the study. Further this study would form a platform for future research with larger sample size and multicentric respondents providing a better insight into the attitude towards plagiarism.

CONCLUSION

Within the limitations of the present study, the attitude of the dental students reflect good levels of seriousness and awareness with which plagiarism is perceived. Postgraduate students had moderately better knowledge on plagiarism when compared to undergraduates. Females showed better knowledge compared to males.

ACKNOWLEDGEMENT

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CONFLICTS OF INTEREST

The authors of the study declare that there were no conflicts of interest.

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