A Comparative Analysis of Opinion On Various Bioethical Issues Based On Religiosity: A Pilot Study With Medical Graduates

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ABSTRACT

Background: Religiosity which by definition means people's varying tendencies to commit themselves to religious beliefs is an important aspect in society and especially in bioethics, a field concerned with the moral, legal, political, and social issues raised by medicine, biomedical research, and life sciences technologies. Globally, studies on the impact of religiosity on aspects that are debatable and engrained with ethical issues have been minimally investigated. The current study attempts at understanding the opinion of medical graduates through a structured questionnaire.

Methodology: A total of 207 graduates' volunteers to be a part of the study and majority (72.2%) were females. The most important aspect was that 83.93% expressed that they followed their religion strongly. The data was stratified based on this and subjected to detail analysis to understand the opinion of the graduated based on their degree of religiosity.

Results: A significant difference for questions related to opinion pertaining on embryonic stem cell research is unethical ($p = 0.017$) and to right to end his or her own life when in terminal condition ($p = 0.033$).

Conclusion: As far as the authors are aware of this is the first study that addresses the role of religiosity on opinion to some bioethical aspects with medical graduates from India and the results indicate that religiosity does influence medical practice and opinion on embryonic stem cell research and right to end life in terminal condition.

Key words: Bioethics, medical graduates, religion, religiosity, end of life issues, embryonic stem cell research.

Introduction

Religion is the belief and worship of superhuman being /s (commonly termed as God), following a unique culture, while spirituality refers to adhering to a broad set of principles that transcend all religions and being in right relationship and understanding mutual interdependence of all human beings [1]. Religion and spirituality are the two determining factors in defining the values of life

and is termed as the inner call of the human being to respond to life in the world [2-3]. Religion is a collation of cultural and belief through which the world views humanity and moral values. Many religions have narratives, symbols, traditions and sacred histories that are intended to give meaning to life or to explain the origin of life and the [2-3].

The basic religions in the world are Christianity, Islam, Judaism, Hinduism and Judaism (The big five); the others include Zoroastrianism, Sikhism, Baha'i faith, Shintoism, Taoism, etc [2-3]. The etymology of the word religion itself is a self-explanatory concept (Latin: "religious" – 'to bind together') [2-3]. The followers of a religion mean sharing the same faith, participating in rituals and adhering to the precepts of the community and espousing it when the need arises. Although a religion is considered as "one", at times it has significant diversity in practice among the followers. At times religion also draws others to community and follows a culture rather than the belief itself. Globally, most countries have governments that favour to protect citizens freedom to follow religion of their choice without privileges or penalty. The human rights enshrine this principle and this is considered a 'fundamental freedom'. In lieu of these observations it can be termed as religion is an overwhelming influence in a person's life. The choices an individual makes would inadvertently pursue the tenets of his faith and belief of the followers. Thus, all decisions would invariably be influenced by religion.

On the contrary, ethics concerns recommendation of right attitudes and behaviours is based on adherence to the inherent nature of the attitude and prevailing moral theories. In fact, John Dewey stated that ethics is considered as a function of moral life of the community [4]. Bioethics is a multi-dimensional discipline that has varied inputs. The ontogenesis of ethics is based on for native values, environment and experiences. Surgery, transfusions, organ grafting etc, are anathemas, in most religions. The alteration of the body is considered, blasphemous by the religious orthodox, even at the cost of their own wellbeing. In the recent past there has been a positive association between religious involvement and better health.

Medicine is the applied science or practice of the diagnosis, treatment, and prevention of disease [5-6]. It encompasses a variety of health care practices evolved to maintain and restore health by the prevention and treatment of illness in human beings. Medicine and religion have been closely associated since time immemorial and the belief that science alone cannot cure a disease is widely prevalent [5-7]. Spirituality and religion are known to be inversely related to science and in most religions, diseases are considered by most as 'ire of the gods' or "taboo" to be manipulated [6-10]. Religious beliefs are strongly held in an individual tract, a physician's religious learning could influence practise of medicine [7-9,11]. When education and awareness sheds light upon an action that adversely affects some or many, the thought of changing such practices/decisions is necessitated and the remedial or alternate is adopted. Religious beliefs could affect ethical decision making and influence personal choice in health care advancements.

Healthcare professionals have to practise their art within the inhibitory and vacillator spectrum of religious beliefs. The health providers need to be attuned to this fact. Doctors with their own individual religious beliefs and the teachings of medical science are at crossroads. The impact of the doctor's own spirituality and religious attitudes could swerve the practise of medicine. The attitudinal development of a doctor occurs at home in social and educational environment. A study to ascertain the attitudes of the undergraduate and post graduate medical students would give inkling into the practise of medicine and religiousness. Considering this the present study was conducted to ascertain the differences in perspectives of undergraduate and postgraduate medical students on their concepts of religion and whether this impacts their attitudes towards bioethical issues.

Materials and Methods

This study is a single centre study and was conducted under the aegis of the UNESCO Bioethics South India Unit at Father Muller Medical College, Mangalore, India after obtaining the permission of the Institutional Ethics committee. The questionnaire was designed by the investigators and was developed by a local panel of experts in bioethics and researchers. Special attention was given for clarity and the inclusion of the full range of response options. The questionnaire was then pilot tested with 10 students, who were not part of the final sample. The

respondents of the pilot cohort rated the initial questionnaire for clarity and content validity. Emphasis was placed on the opinion for the comprehension and understanding of the meaning of each question. The final instrument underwent only minor grammatical changes and consisted of five demographic questions and twenty subject specific questions.

Study Population and Survey Methods

The study population consisted of MBBS graduates who had registered for postgraduate entrance exam training centres in Mangalore and was carried out in December 2016. The investigators approached the medical graduates individually and briefed about the study purpose. As some questions were dilemmatic the volunteers were also requested not write their names or leave any identification mark on the study questionnaire and requested to return back the filled sheets. Written consent was obtained on separate sheet from all the participants before the administration of the questionnaire.

Statistical analysis

Data was entered in Microsoft excel and answers on the questions were subjected to a quantitative analysis using the Chi-square test and Fisher's exact test using the SPSS software program version 17 from IBM. A p value of < 0.05 was considered significant.

Results

A total of 225 questionnaires were distributed but only 207 responded. The results of the study are presented in Table 1 and Table 2. With regard to gender, the results suggest that majority (72.2%) of the volunteers were female medical graduates (Table 1). With regard to the question on whether students had attended classes in bioethics, 50.99% of the volunteers agreed while 49.01% expressed had not attended the classes (Table 1). The other most important observation was that 88.27% agreed that bioethics has an important role in healthcare curriculum and profession. Majority of the volunteers (67.98%) confessed that they did not read books or articles on bioethics (Table 1). The important aspect was that 83.93% of the volunteers agreed that they followed religion strongly (Table 1).

Table 1: Details of gender, teaching reading and opinion on importance of bioethics and following religion by the medical graduates

Questions	Choice	Total	Percentage
1. Gender	Male	57	27.8
	Female	148	72.2
	Total	205	100
2. Have you attended any classes on bioethics?	Yes	103	50.99
	No	99	49.01
	Total	202	100
3. Do you feel bioethics has important role in healthcare curriculum and profession?	Yes	173	88.27
	No	23	11.73
	Total	196	100
4. Do you read bioethics books or articles on bioethics?	Yes	65	32.02
	No	138	67.98
	Total	203	100
5. Do you follow religion strongly?	Yes	141	83.93
	No	27	16.07
	Total	168	100

For the question, "do you think embryonic stem cell research is unethical?", the medical graduates who were religious expressed its unethical nature ($p = 0.017$). With respect to the question, "do you feel you should not tamper god's creation in the name of advancement of science?", the students who were religious opined that tampering of god's creation in the name of advancement

of science, was not acceptable and this was an emerging new trend among the graduates ($p = 0.063$). For the question, “I try hard to carry my religious beliefs over into all my dealings in life”, the medical graduates who were religious carry their beliefs into all their dealings in life ($p = 0.003$). With regard to the question, “do you feel religious beliefs influence medical professionals” ($p = 0.088$). Professionals who were religious opined that their religious beliefs have an influence in the delivery of healthcare (Table 2). To the question “do you think a patient has the right to end his or her own life when in terminal condition”, students who were religious expressed that patient did not have the right to end his or her own life when in terminal condition ($p = 0.033$) (Table 2).

Table 2: Opinion expressed by the medical graduates who followed religion strongly as versus to not for the various questions addressing the medical fraternity

Questions	Choice	Religious N (%)	Not religious N (%)
1. Do you think scientific and medical progress is hindered by religion?	Strongly agree	18 (12.9)	5 (18.5)
	Somewhat agree	73 (52.1)	15 (55.6)
	Somewhat disagree	22 (15.7)	4 (14.8)
	Strongly disagree	27 (19.3)	3 (11.1)
	Chi square	1.431	
	P value	0.698	
2. Do you feel religion is over pressing bioethical issue	Strongly agree	16 (11.5)	5 (19.2)
	Somewhat agree	58 (41.7)	15 (57.7)
	Somewhat disagree	42 (30.2)	3 (11.5)
	Strongly disagree	23 (16.5)	3 (11.5)
	Chi square	1.248	
	P value	0.741	
3. Do you feel science must advance at the cost of animal and human experimentation?	Strongly agree	21 (15.3)	6 (24.0)
	Somewhat agree	53 (38.7)	8 (32.0)
	Somewhat disagree	36 (26.3)	6 (24.0)
	Strongly disagree	27 (19.7)	5 (20.0)
	Chi square	1.248	
	P value	0.741	
4. Should religious healthcare professionals hinder healthcare services?	Strongly agree	12 (9.2)	4 (15.4)
	Somewhat agree	22 (16.9)	3 (11.5)
	Somewhat disagree	41 (31.5)	5 (19.2)
	Strongly disagree	55 (42.3)	14 (53.8)
	Chi square	2.957	
	P value	0.398	
5. Do you think genetically modified food ie brinjal is harmful?	Strongly agree	17 (12.4)	3 (12.0)
	Somewhat agree	40 (29.2)	6 (24.0)
	Somewhat disagree	41 (29.9)	5 (20.0)
	Strongly disagree	39 (28.5)	11 (44.0)
	Chi square	2.590	
	P value	0.459	
6. Do you think genotyping should be done by all patients?	Strongly agree	15 (11.2)	2 (8.3)
	Somewhat agree	43 (32.1)	8 (33.3)
	Somewhat disagree	52 (38.8)	6 (25.0)
	Strongly disagree	24 (17.9)	8 (33.3)
	Chi square	3.612	
	P value	0.307	

7. Do you think embryonic stem cell research is unethical?	Strongly agree	14(10.3)	0(0.0)
	Somewhat agree	37(27.2)	4(16.7)
	Somewhat disagree	56(41.2)	8(33.3)
	Strongly disagree	29(21.3)	12(50.0)
	Chi square	10.215	
	P value	0.017 Significant	
8. Do you feel you should not tamper god's creation in the name of advancement of science?	Strongly agree	39(28.7)	6(24.0)
	Somewhat agree	52(38.2)	4(16.0)
	Somewhat disagree	28(20.6)	9(36.0)
	Strongly disagree	17(12.5)	6(24.0)
	Chi square	7.305	
	P value	0.063 Trend	
9. Is the influence of religion/spirituality on health generally positive or negative?	Strongly agree	45(36.9)	4(23.5)
	Somewhat agree	58(47.5)	10(58.5)
	Somewhat disagree	16(13.1)	3(17.6)
	Strongly disagree	3(2.5)	0(0.0)
	Chi square	1.786	
	P value	0.618	
10. Religion/spirituality helps patients to cope with and endure illness and suffering?	Strongly agree	85(61.2)	11(45.8)
	Somewhat agree	46(33.1)	10(41.7)
	Somewhat disagree	5(3.6)	2(8.3)
	Strongly disagree	3(2.2)	1(4.2)
	Chi square	2.559	
	P value	0.447	
11. Religion/spirituality gives patients a positive helpful state of mind	Strongly agree	95(68.8)	13(50.0)
	Somewhat agree	39(28.3)	11(42.3)
	Somewhat disagree	3(2.2)	2(7.7)
	Strongly disagree	1(0.7)	2(0.0)
	Chi square	4.96	
	P value	0.416	
12. How often have your patients received emotional or practical support from their	Strongly agree	46(39.0)	7(33.3)
	Somewhat agree	61(51.7)	14(66.7)
	Somewhat disagree	7(5.9)	0(0.0)
	Strongly disagree	4(3.4)	0(0.0)
	Chi square	2.847	
	P value	0.416	
13. Religious/spirituality causes guilt anxiety or other negative emotions that lead to increased patient suffering	Strongly agree	5(3.6)	3(11.5)
	Somewhat agree	40(28.6)	9(34.6)
	Somewhat disagree	43(30.7)	9(34.6)
	Strongly disagree	52(37.1)	5(19.2)
	Chi square	5.315	
	P value	0.150	
14. Religion/spirituality leads patients to refuse delay or stop medically indicated therapy	Strongly agree	18(13.1)	2(7.7)
	Somewhat agree	49(35.8)	16(61.5)
	Somewhat disagree	36(36.3)	3(11.5)
	Strongly disagree	34(34.8)	5(19.2)
	Chi square	6.437	
	P value	0.092	
15. How often have your patients used religious /spirituality as a reason to	Strongly agree	17(14.2)	3(14.3)
	Somewhat agree	49(40.8)	7(33.3)
	Somewhat disagree	29 (24.2)	6(28.6)
	Strongly disagree	25(20.8)	5(23.8)

avoid talking responsibility for their own health?	Chi square	0.467	
	P value	0.926	
16. I try hard to carry my religious beliefs over into all my dealings in life?	Strongly agree	29(20.9)	2(7.7)
	Somewhat agree	70(50.4)	8(30.8)
	Somewhat disagree	24(17.3)	6(23.1)
	Strongly disagree	16(11.5)	10(38.5)
	Chi square	14.304	
	P value	0.003 Significant	
17. Do you feel religious beliefs influence medicine?	Strongly agree	36(26.3)	4(16.0)
	Somewhat agree	63(4.0)	15(60.0)
	Somewhat disagree	25(18.2)	1(4.0)
	Strongly disagree	13(9.5)	5(20.0)
	Chi square	6.543	
	P value	0.088 Trend	
18. From ethical point of view does physician or someone else have the responsibility to practice euthanasia when they are asked to do so by a terminally ill patient in a responsible manner?	Strongly agree	19(14.2)	6(26.1)
	Somewhat agree	50(37.3)	9(39.1)
	Somewhat disagree	19(14.2)	2(8.7)
	Strongly disagree	46(34.3)	6(26.1)
	Chi square	2.609	
	P value	0.456	
19. Should human life be defended regardless of its quality?	Strongly agree	36(26.7)	5(20.8)
	Somewhat agree	38(28.1)	7(29.2)
	Somewhat disagree	35(25.9)	8(33.3)
	Strongly disagree	26(19.3)	4(16.7)
	Chi square	0.762	
	P value	0.858	
20. Do you think a patient has the right to end his or her own life when in terminal condition?	Strongly agree	18(12.9)	6(24.0)
	Somewhat agree	32(23.0)	10(40.0)
	Somewhat disagree	18(12.9)	4(16.0)
	Strongly disagree	71(51.1)	5(20.0)
	Chi square	8.717	
	P value	0.033 significant	

Discussion

Our study investigated the impact of religion on attitudes and practise of medicine. It has been known that religion influences the outpouring of attitudes, decision and values. Being a person of science and following a particular religion could be at times contradictory, invoking a turmoil that gets balanced by rationality. As seen in the study the medical students 83.93% of the volunteers were religious. In a study conducted Curlin et al, male physicians and those who are religious will be most likely to express personal objections and least likely to disclose information about the interventions or to refer patients to more accommodating providers [12].

Religion has an important role when it comes to decision taking. Underlying religious beliefs and affiliations strongly affects end of life decision taking [13]. They tend to derive morality, ethics, religious laws or a preferred lifestyle from their ideas about the cosmos and human nature. Religion has a substantial impact on patient care [14]. Patient's recovery and well-being are dependent on their beliefs, spiritual needs and support. Incorporation of spiritual and religious dimension as a part of patient care can help patients cope with their illness [14]. While serving the patients; spirituality can help clinicians to reconnect with their professional roots [15]. Maintenance of hope and stability can be provided by the intervention of spirituality [16]. Greater spirituality is one of the factors for good health among geriatric people [11]. Advanced cancer patients, oncologists and

oncologist nurses value spiritual care [17]. Spiritual development along with professional development is becoming a need as it helps the healthcare individuals to deal with their stress of care giving [15]. Integrating of spiritual needs is also essential along with advanced medical treatment [16]. Making patients understand and coping with medial illness can be achieved by religion [18]. Moral deliberation is substantiated by religious traditions [19].

Limited research data is available on the frequency of spirituality and religion affecting health care professionals [20]. Ethics and informed consent are intertwined which is a central issue on which hangs most of the ethical problems in human experimentation and the options in clinical care [21]. The understanding of interplay of religion and spirituality in health and medicine has increased. There is a renewed interest for its implication on ethicality. Healthcare professionals must acknowledge and address religious issues with regard to disease and health of their patients. In associating with religious issues and needs of the patients the religious and spiritual foundation of the healthcare professional should be sound [22]. In the study it was observed that 83.93% of the volunteers were religious. Intrinsic religiosity stands for the extent to which a person embraces his or her religion as the “master motive” that guides and gives meaning to his or her life [12].

The incongruity among the various beliefs arises from vague and incorrectly perceived philosophical concepts. Thoughts about the necessity and moral implications of embryonic stem cell research are governed by a variety of religious, ethical and political factors. Some ethicists strive to ascertain what of who is a person by “setting boundaries” [23]. Supporters of embryonic stem cell research assert that to qualify as a person, the individual must fulfil several criteria to be qualified for personhood such as self-awareness, capacity, curiosity, sense of time and neo-cortical function [24-25]. Those defending this theory, argue that human embryo lacks these criteria and therefore cannot be deemed to have a moral status. Scientists affirm that any harm done is outweighed by the potential alleviation of the suffering endured by tremendous number of people with varying diseases [26-27]. As per the deontological approach, “whether a situation is good or bad depends on whether the action that brought it about was right or wrong”, and hence the ends do not justify the means. Therefore, this flimsy utilitarian approach deems that stem cell research proceeds at the expense of human life than at the expense of personhood. This argument fails to address the ethical concerns pertaining to the destruction of embryonic life for the possibility of developing certain treatments to eradicate certain diseases [25,28].

Most religions strongly condemn reproductive cloning because of the belief that life is considered to be a gift from god [29]. Religious leaders rarely show the determination to voice their thoughts or take a stand in this matter. The Roman Catholics oppose human cloning and embryonic stem cell lines because it goes against their belief and faith and it is contradictory to the law of god [29]. Hinduism rejects the use of embryonic stem cells and concurs with Christianity [30-31]. Stem cell research propels possible futuristic notions like eternal life and existence beyond human realms, development of ready to use organs which can potentially alter the dynamics of the whole human race [24]. Islam regards research on stem cells as an act of faith and the ultimate will of God and that the intervention can be undertaken with the sole intent for the greater good and improvement of humanity [32-34]. However, Islam expresses concerns with the reproductive cloning procedures and their potential impact on familial and interpersonal relationships [32-33].

The ethicality of stem cell research was agreed by the nonreligious (83%) and the religious (62.5%). Ethical sensitivity and competence is necessary for excellent clinical care and both religion and spirituality aids in development of ethical sensitivity. However, the relationship between science and religion has been complicated. Science has time and again shaken the very foundations of religious beliefs especially the western nations and if it keeps festering, the religious sentiments and hostility can mount leading to stunting of advancements in science [35].

As medical graduates realised the need for creating a universal form of decision without the overwhelming influences of religion to be professional. Volunteers in this study had training to be professional, that belies religious tug-of-war. In a study conducted in 1988 by Cassidy no significant differences were found on perceptions of idealistic and realistic moral behaviours. Comparison based on age of students and their participation in ethics course and seminars was analysed and significant findings were evident. Exposure to bureaucratic environment of

healthcare system and participation in educational offerings have attributed to differences in attitudes [36].

Humanistic desire to end suffering and pain has been sheared from religion and spirituality that could influence decision making amongst doctors [37]. Patients and physicians have an element of disagreement of what a “good death” entails [38]. Every human being has the right to determine what shall be done to his own body. Hence informed consent is the ultimate protection from hazards of research and therapy in medicine. The end result should be a rational decision by the patient based on the information provided to him by the researchers or investigators and patient should have full prognosis [21]. Respect to the individual is inherent to religious beliefs and as manifest as autonomy of the patient [21].

In the conceptual framework of relationship amongst human beings, nature and god, religion, spirituality and medicine have common roots [22]. Recent debates have sparked the need for accessibility to legal treatments when the concerned physicians have trouble about the moral implications of the treatment. Certain countries have formulated laws that shield health providers from refusing medical practises that would violate their consciences [12]. Studies have shown that family physicians beliefs and religious practises are similar to the cross section of the population he practises in [39]. Among the healthcare professionals psychiatrist were found to be less religious than their counter parts and their patients [40]. Moreover, healthcare professionals are the crucial link in augmenting bioethical values in the course of their duty. A study by Bapat et al, in South India, that analysed the awareness, attitudes and beliefs of 123 medical students showed 95% did not believe that organ donation is against religion [41]. The question of religion thus lays a crucial role as it is the belief that prompts the action of the healthcare professional.

Among the ones who follow religion strongly (35.9%) and 64% of the ones who do not follow religion strongly agreed that patient has the right to end his or her own life when terminally ill. Physicians are ultimately the decision makers despite having patient directed modes of end of life care [12]. Patient autonomy and end of life decisions are two factors which lead to a dilemma among the health care individuals as well as the patient party. Views on euthanasia are strongly influenced by religion on health care profession[42]. The interesting conclusions drawn by Billow HH, 2012 study, was that the religious were more in favour of treatment and more in favour of life prolongation and less likely to administer active euthanasia than the others. The issue of patient autonomy did not show difference between religious and non-religious [42]. Relief from unbearable pain and suffering, euthanasia was supported majority of the doctors [43]. The factors determining, choice of euthanasia among doctors showed that disappointment was seen in those religious and spiritual [44]. This study done earlier on doctors and our study done on medical students showed parallel ideology

Religious and non-religious Medical professionals are in agreement that religion casts a positive influence on health. In fact, Ghadirian has indicated relevance of spirituality in the practise of medicine. In fact there is danger of dehumanisation of medical institutions. Consequently growing number of medical education programs implement integration of spirituality and medicine [45]. Impact of religion on health is primarily a positive one. Thus Religion has an important impact on health [46]. Surprisingly, religion helps to cope in illness was agreed to by the religious (94%) and the non-religious (88%). Within medicine there is an increased focus on the relation between faith and health [46]. It has been shown in a study by Powell LH et al 2003, that religion and spirituality protects against cardiovascular diseases mediated by lifestyle. The depth of religiousness bears on physical health. Religion and spirituality slows progression of cancer or improves recovery from acute illness. The heavy impact of religion and spirituality on patients, disease course could also affect the treating team. Hence the hypothesis was developed [47]. Religion helps to cope with diseases and its consequences which could conflict with physician’s recommendations and the patient could face a conflict with physician’s recommendation but navigating this issue is an ethical dilemma [48].

Irrespective of religiousness and qualification all agree that religion provides positive attitude and hopeful state of mind of the patients. Highlighting the importance of religion and spirituality among terminally ill patients would mean the meting out of religion and spirituality by health care professionals [49]. Influence due to religious beliefs in practise of medicine was agreed upon by

71.3% of the participants. As physicians are de facto arbiters, especially, in critical situations, despite having appointed surrogates, their decisions would definitely be influenced by personal religious beliefs [38].

Various studies note the influence of religion on the physicians practise but over simplified religious measures limit the veracity of these studies [38]. Ethnicity, geographic region, experience caring for the dying and religious characteristics have an impact on the physician's perspectives on end of life decisions. Frequent exposure to dying patients and the outcome of survival; also have a bearing on physician's attitude on "end of life" issues [38]. The physician's judgements, beliefs, attitudes and obligations could impinge upon their practise [38]. In a study conducted by and co-workers in the United States it was seen that Christian affiliations try to carry their religious beliefs into other dealings in life than Jewish, Hindu and Muslim physicians [39]. Religious leaders themselves are at times inconsistent with their moral standpoint on various ethical issues that prevaricates the stance to be taken by their faithful. Hence further deliberations and discussions are necessary in concluding a debate on new age healthcare advancements. Despite the methodological limitations in this study, the conclusions drawn are contemplative and gives direction to fostering ethical competence amongst healthcare professionals. A true professional unfetters religiosity and other personal biases in ethical decision making.

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Acknowledgements: Authors would like to extend their heartfelt thanks to all the graduate students that participated in the study.

Conflict of interest: Nil

Funding: Nil