



INFLUENCE OF ENVIRONMENTAL EDUCATION ON UNDERGRADUATES' PERCEPTIONS OF SUSTAINABLE DEVELOPMENT

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Abstract:

The obvious environmental, social and economic crises across the globe are a reminder of the need for environmental education in institutions of higher learning to provide undergraduates with the competence to live sustainably and promote the quality of life for both present and future generations. The study examined the influence of environmental education on undergraduates' perception of sustainable development. The study adopted the descriptive research design of the survey type. The population of the study comprised all the 2,892 undergraduates in 2017/2018-2020/2021 academic sessions in the Science Education Department, Faculty of Education, Ekiti State University, Ado Ekiti, Nigeria. The sample for this study was 120 undergraduates from the Department who were purposively selected for the study. The instrument used for the study was a questionnaire. The instrument was validated by experts in the Faculty of Education, Ekiti State University, Ado Ekiti. The reliability coefficient was determined using test-retest and a coefficient of 0.88 was obtained. Frequency counts, percentages and mean were used to answer the research questions while the inferential statistics involving Pearson Product Moment Correlation were used to test the hypothesis at a 0.05 level of significance. Based on the findings of the study, it was recommended that

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environmental education should be made compulsory for all students due to its potential to inculcate in students, environmental literacy for environmental quality and decision-making process to encourage a healthy society and sustainable future, and should be included in the curriculum in order to promote sustainable development. It was also recommended that parents should endeavour to inculcate moral values in their children for hard work, respect for nature, human diversity and gender equity so as to promote sustainable development in any environment they find themselves. It was also recommended that the university authorities need to embrace and intensify the learning of environmental education towards giving undergraduates the requisite environmental, social and economic literacy that promotes sustainable development.

Keywords: perception, environmental education, development education, undergraduates, sustainable development

1. Introduction

The environment could be defined as the totality of all things either living or non-living in a surrounding which could be majorly classified as land, water, atmosphere, plants humans, and animals including micro-organisms such as fungi and bacteria. The environment is where people live to exhibit ways of life in their lifetimes. The environment is defined as anything that affects an organism during its lifetime (Enger & Smith in Adebisi & Jegede, 2020). It can be deduced that there is a continuous interaction between man, his activities and the environment. A university environment may indicate a great deal of cooperation among the various groups in the university setting while another might reveal an environment of tension, friction and even a lack of cooperation among groups. (Arogundade, 2016). The environment has an influence on the ways and quality of life of people in society and consists of the environment all the conditions that affect man's survival on planet Earth. The resources essential for life such as air, water, and raw materials are provided by the environment which human beings are in constant interaction with. The implication of man's interaction has recently begun to be negative, resulting in adverse reactions of nature against human activities. Hence there is a need for the intervention of education through Environmental Education via institutions of higher learning.

According to the United Nations Educational, Scientific and Cultural Organization (UNESCO), learning must prepare learners of all ages to find solutions for the challenges of today and the future. Education should be transformative and allow us to make informed decisions and take individual and collective actions to change our society and care for the planet Earth. A well-rounded education means more than just achieving high test scores (Boca & Saracli, 2016). Education that is applicable to real-life situations will be more enhancing to Sustainable Development (SD). It is therefore high time for a re-orientation of contents and pedagogy in institutions of higher learning to stimulate

learners' motivation for learning and to equip undergraduates with Sustainable Development competence to be able to function in the nation's development.

Environmental education is the process by which individuals acquire relevant knowledge and skills of their environment in developing attitudes toward addressing environmental issues. It may also be referred to as organized activities to inform learners on how the natural environment function particularly, the ways human beings can manage behaviours and ecosystems to live sustainably. Many actions are taken by individuals to explore environmental issues, engage in problem-solving and take actions to improve the environment. Obviously, there are contemporary issues which are majorly environmental, economic and social in nature. Nature has begun a reaction against human activities that have subjected this world to a serious threat. Population is observed to be on the increase thereby increasing the aggregate human activities. These activities include mining, road construction, deforestation, erection of buildings on waterways and indiscriminate waste disposal among others in individuals' environment. The issues of climate change, occasioned by deforestation and global warming which is also as a result of greenhouse gas emission, and universal environmental pollution coupled with the loss of biodiversity are rationales for cosmos-harshness worldwide. The soundness of undergraduates' orientation with respect to these issues could go a long way in addressing these issues for the good of both present and future generations. The observed prevalent culture displayed by undergraduates in relation to environmental, societal and economic issues calls for due attention as regards the influence of Environmental Education on their perceptions of sustainable development.

Perceptions are to a great extent the basis of actions and behaviours. Undergraduates could develop certain perceptions which may have their foundations from family backgrounds, peer groups and gender influence. Some of these perceptions may not be in favour of sustainable development. Arogundade (2016) revealed that sustainable development is the development that meets the needs of the present without compromising the ability of future generations to meet their own needs. Development entails environmental protection, economic development and social development. Sustainable development is development that meets the need of the present without compromising the ability of future generations to meet their needs (Konwen, 2016). Each student is being responsible to play his/her own role in creating a more ecologically sustainable environment through attention to lifestyles. Enhancing sustainable development via the universities could be through the relevant programme capable of intimating students with the knowledge and skills that can enhance their perception as well as motivate them and make them contribute meaningfully to the nation's sustainable development later.

Motivation, according to Akinmola (2016), refers to a psychological feature that arouses an orgasm to act towards a desired goal and elicits, control and sustains certain goal-directed behaviours. Undergraduate students behave and perform their functions differently in their environment. It is the responsibility of the education stakeholders to inform the minds of the students through various necessary requisite skills in order to

have the needed orientation. It is high time to prepare learners of all ages to find solutions to the challenges of today and the future. Warraza and Walford (2002) state that environmental perceptions of undergraduates vary according to school ethos, the teacher, and their access to information through books, media such as television, computer games, and other social activities. Also, Students' perceptions are mostly influenced by media coverage (Bradu & Walford, 2002); and peer groups as well as family background. Education should therefore be transformative and allow students to make informed decisions and take individual and collective actions to change society and care for the planet Earth. Acquisition of knowledge and skills needed to promote sustainable development through Environmental Education is capable of enhancing sustainable lifestyles which include respect for human rights, gender equality, and promotion of a culture of peace to mention but few. According to Arbuckle (2006), the combination of gender inequalities, biases, and social norms dictating specific roles for women and men leads to a differential impact on environmental factors by gender. Gender role identification should be clarified through academic reforms in institutions of higher learning so that undergraduates could see from the perspective that both sexes can perform equal social and economic roles if given the skills and opportunities.

Accordingly, perceptions about gender differences have important implications for educational expectations by teachers and students themselves. In the past, male students are known for certain courses while female students dare not. Nowadays, both male and female students now opting for fields of study of their choice irrespective of their gender. Gender-related problems in curriculum implementation have been identified by Nwagbara in Duyilemi and Olusa (2016). These include discriminatory attitudes of parents, gender stereotyping, cultural and religious factors, gender-biased curriculum in favour of males and high dropout rates in Nigerian schools. The rate at which undergraduates towards sustainable behaviour reveals that there is a need to determine the knowledge contents of higher education institutions in this regard. Therefore, the study focuses on the influence of environmental education on undergraduates' perceptions of sustainable development.

2. Statement of the Problem

Environmental education instills in learners the ways of life of people in coping with their environment but lack of adequate knowledge may not enhance undergraduates' perceptions of sustainable development. The dispositions of undergraduates seem not to be in favour of sustainable development which may be due to a lack of knowledge of Environmental Education which is supposed to be part of the requisite knowledge content for achieving sustainable development goals. It appears that some institutions of higher learning in Nigeria do not have environmental education in their programmes, this could inhibit the process of sustainable development. Other factors that could affect the perceptions of undergraduates include family background, peer group and gender

influences. If these situations continue, the teaming university graduates may not be able to contribute to the process of sustainable environment and development.

2.1 Research Questions

The following research questions are raised for the study.

- 1) Is Environmental Education taught in the university under study?
- 2) Does Environment Education influence undergraduates' perceptions of sustainable development?
- 3) Does peer group have effects on undergraduates' perceptions of sustainable development?
- 4) How do family backgrounds influence undergraduates' perceptions of sustainable development?
- 5) Do gender issues have effects on undergraduates' perceptions of sustainable development?

2.2 Research Hypothesis

There is no significant difference between environmental education and undergraduates' perceptions of sustainable development.

3. Literature Review

Environmental Education is an organized effort to teach about how natural environments function and particularly how human beings can manage their behaviours and ecosystem in order to live sustainably (Muneer, 2016). The aggressive search of man for a better standard of living, which has resulted in the exploration and exportation of natural resources has implicated serious problems in the environment. Therefore, Muneer (2016), emphasized that Environmental Education (EE) is about the continuous process of outdoor education, and it responds to the world's growing awareness about environmental problems. Environmental Education has a direct correlation with outdoor education and experiential Education (Borah, 2007). Environmental Education (EE) follows diverse definitional perspectives, but the most recognized definition was given by UNESCO (Muneer, 2016). Accordingly, the definition follows that "*Environmental Education is a learning process that increases people's knowledge and awareness about the environment and associated challenges, develops the necessary skills and expertise to address the challenges and foster attitudes, motivation and commitments to make informed decisions and take responsible actions*" (Borah, 2007).

Environmental Education is enhanced through outdoor experiences. However, outdoor experiences are not virtually environmental in nature but often contain elements of teaching about the environment (Muneer, 2016). Environmental Education has specific goals. These goals are to increase public awareness of the problems which exist in the field, as well as possible solutions, and to lay the foundations for a fully informed and active participation of the individuals in protection of the environment and the prudent

and rational use of natural resources as stated by the European Resolution of Environmental Education (Gio Litto, Mathot, Pardo & Vergnes, 1997).

In order to simplify the Environmental Education goals as stated by the European Resolution of EE, GioLitto, Mathot, Pardo and Vergnes (1997) concluded the following aims of EE in different countries of European Union:

- 1) The transmission of knowledge;
- 2) The creation of new behaviour patterns;
- 3) The development of values, attitudes and skills necessary to protect and improve the environment;
- 4) The development of awareness of the necessity to protect nature and the environment; and of the complexity of both the environment and the interactions between man and nature.

From the paragraphs above, it could be agreed that Environmental Education aims at exposing possible impending ecological problems, if humanity lacks environmentally friendly behaviours; creating the necessary orientation for behavioural and ecological management in favour of the environment for sustainability. Students perceive environmental education in different ways.

Perception is defined as an individual's behaviour; for it is the way each person processes the raw data he or she receives from the environment into meaningful patterns. (Mangal in Odeyemi & Longe, 2019). Perception of objects in the visual world is influenced by features such as shape and colour as well as the meaning and semantic relations among them (Hwang, Wang, & Pomplum, 2011). Social influences may affect one's perception, including gender and socio-economic status. Accordingly, perception is a personal manifestation of how we view the world.

The influence of Environmental Education on the perceptions of undergraduates on Sustainable Development is indispensable in this contemporary time. According to Boca and Saracli (2019), Environmental Education is very important and supports the creation of a sustainable environment, if provided in higher education institutions, it trains and prepares the future generations for green society. Genc & Akilli (2016) state that the existence of environmental responsibility has a very close relationship with pro-environmental activities in the framework of the environmental literacy model. Environmental Education gives ecological literacy and ecological literacy leads to environmental responsibility. When undergraduates acquire ecological literacy through Environmental Education, their perceptions are reformed and become environmentally responsible.

This means that the reverse will be the case among children that came from high-income homes but have parents with negative attitudes. Negative attitudes are products of perceptions that are against Sustainable Development and vice versa.

4. Materials and Methods

The study adopted a descriptive research design of the survey type. This design is considered appropriate because it attempts to cite the views of students on the influence of environmental education on undergraduates' perceptions of sustainable development. The population for the study comprised 2,892 undergraduates in the Faculty of Education during the 2017/2018 – 2020/2021 academic sessions at Ekiti State University, Ado Ekiti. The sample for the study consisted of 120 undergraduates from the Department of Science Education, 2017/2018 – 2020/2021 academic sessions. The intact classes in the six-course options in Science Education (Biology, Chemistry, Physics, Basic Science, Mathematics and Computer) were purposively selected for the study. The instrument used for data collection was a questionnaire titled (IEEUPSD). Face validity was established by showing the instrument to the project supervisor in order to determine the appropriateness of the items. The reliability of the instrument was determined using the test-retest method. The instrument was administered to 30 undergraduates outside the sample on two occasions. The scores of the responses were correlated using Pearson product moment correlation. reliability coefficient of 0.88 was obtained for IEEUPSD. This was considered high enough for the reliability of the instrument. The copies of the questionnaire were administered to 120 undergraduates from Science Education, in Education Faculty. The data collected from the respondents were analyzed using descriptive and inferential statistics. The descriptive statistics of frequency count, percentages, means and standard deviation were used to answer the research questions while the inferential statistics involving Pearson product moment correlation were used to test the hypothesis at a 0.05 level of significance.

5. Results and Discussion

Question 1: Is Environmental Education taught in the university under study?

Table 1: Teaching/Learning of Environmental Education in the Institution under Study

S/N	Items	A	D	Remarks
1	I receive Environmental Education lessons in my class activities.	53 (44.2)	67 (55.8)	Disagree
2	Environmental Education is taught as a separate course of study in this institution.	54 (45.0)	66 (55.0)	Disagree
3	Environmental Education course is part of my compulsory courses.	37 (30.8)	83 (69.2)	Disagree
4	Students take courses in Environmental Education at least once before graduation.	49 (40.8)	71 (59.2)	Disagree

Table 1 presents the teaching/learning of Environmental Education in the institution under study. The result shows that 53 (44.2%) of the respondents agreed that they receive Environmental Education lessons in class activities while 67 (55.8%) disagreed. On whether Environmental Education is taught as a separate course of study in the

institution, 54 (45.0%) of the respondents agreed while 66 (55.0%) disagreed. 37 (30.8%) of the respondents agreed that Environmental Education course is part of compulsory courses while 83 (69.2%) disagreed. 49 (40.8%) agreed that students take courses in Environmental Education, at least once before graduation while 71(59.2%) disagreed.

Question 2: Does Environmental Education influence undergraduates' perceptions of Sustainable Development?

Table 2: Influence of Environmental Education on Undergraduates' Perceptions of Sustainable Development

S/N	Items	A	D	Remarks
1	Environmental problems such as climate change, global warming, and the loss of biodiversity among others are prevalent across the globe.	114 (95.0)	06 (5.0)	Agreed
2	Environmental Education gives students the required literacy to manage the environmental problems to achieve Sustainable Development.	117 (97.5)	03 (2.5)	Agreed

Table 2 presents the influence of Environmental Education on undergraduates' perceptions of Sustainable Development. The result indicates that 114 (95 %) of the respondents agreed that environmental problems such as climate change, global warming, the loss of biodiversity among others are prevalent across the globe, while 06 (5%) disagreed. On whether Environmental Education gives students the required literacy to manage the environmental problems to achieve Sustainable Development, 117 (97.5%) agreed while 3 (2.5%) disagreed.

Question 3: Does peer group have effects on undergraduates' perceptions of Sustainable Development?

Table 3: Effects of Peer Group on Undergraduates' Perceptions of Sustainable Development

S/N	Items	A	D	Remarks
1	Friends can have a potent influence on the way students perceive and response to situations in society.	115 (95.8)	5 (4.2)	Agree
2	Students can be influenced into cultism, drug abuse, prostitution and fornication, examination malpractice and other related bad behaviours which may not be in favour of Sustainable Development.	116 (96.7)	4 (3.3)	Agree
3	Friends can motivate students to be serious with their academic in order to achieve the education goal of Sustainable Development.	120 (100)	-	Agree

Table 3 presents the effects of peer groups on undergraduates' perception of sustainable development. The result reveals that 115 (95.8%) of the respondents agreed that friends can have a potent influence on the way students perceive and respond to situations in society while 5 (4.2%) disagreed. On whether students can be influenced into cultism,

drug abuse, prostitution and fornication, examination malpractice and other related vices which may not be in favour of Sustainable Development, 116 (96.7%) agreed while 4 (3.3%) of the respondents disagreed. Amazingly, all 120 (100%) respondents agreed that friends can motivate students to be serious with their academics in order to achieve the education goal of Sustainable Development.

Question 4: How do Family Backgrounds Influence Undergraduates' Perceptions of Sustainable Development?

Table 4: Influence of Family Backgrounds on Undergraduates' Perceptions of Sustainable Development

S/N	Items	A	D	Remarks
1	Parents' personalities and attitudes can stimulate students against or in favour of Sustainable Development.	115 (95.8)	5 (4.2)	Agree
2	The financial status of parents affects the way students will embrace learning with seriousness.	108 (90)	12 (10)	Agree
3	The inability of parents to give their children an education leads to increased ignorance in the light of the environment, society and economy and this will not promote Sustainable Development.	115 (95.8)	5 (4.2)	Agree
4	Lack of parental attention to students could lead to criminal behaviours in students which is not in favour of Sustainable Development.	116 (96.7)	4 (3.3)	Agree
5	When parents have sound moral values, irrespective of their financial status, their children could do well in school.	110 (91.7)	10 (8.3)	Agree

Table 4 presents the influence of family backgrounds on undergraduates' perceptions of Sustainable Development. The result reveals that 115 (95.8%) of the study participants strongly agreed that parents' personalities and attitudes can stimulate students against or in favour of Sustainable Development while 05 (4.2%) disagreed. On whether the financial status of parents affects the way students will embrace learning with seriousness, 108 (90%) respondents agreed while 12(10%) disagreed. 115 (95.8%) respondents agreed that the inability of parents to give their children an education leads to increased ignorance in the light of the environment, society and economy and this will not promote Sustainable Development while 5 (4.2%) disagreed. Also, 116 (96.7%) respondents agreed that lack of parental attention to students could lead to criminal behaviour in students which is not in favour of Sustainable Development, while 4 (3.3 %) disagreed. 110 (91.7%) respondents agreed that when parents have sound moral values, irrespective of their financial status, their children could do well in school while 10 (8.3%) disagreed. This implies that family backgrounds have effects on undergraduates' perceptions of Sustainable Development.

Question 5: Do gender issues have effects on undergraduates' perceptions of Sustainable Development?

Table 5: Effects of Gender Issues on Undergraduates' Perceptions of Sustainable Development

S/N	Items	A	D	Remarks
1	I am aware of the inequality between the female persons and the male persons in society in terms of education, employment, decision making and leadership.	101 (84.2)	19 (15.8)	Agree
2	Male persons are given more opportunities than female persons to function in such areas as education, decision-making, employment opportunity and leadership in society.	99 (82.5)	21 (17.5)	Agree
3	Gender inequality does not favour gender equity as a Sustainable Development Goal	96 (80)	24 (20)	Agree

Table 5 presents the effects of gender issues on undergraduates' perceptions of sustainable development. The result reveals that 101 (84.2%) of the respondents agreed that they are aware of the inequality between female persons and male persons in society in terms of education, employment, decision making and leadership while 19(15.8) agreed. On whether male persons are given more opportunity than female persons to function in such areas as education, decision-making, employment opportunity and leadership in society, 99 (82.5%) respondents agreed while 21 (17.5%) disagreed. 96 (80%) respondents agreed that gender inequality does not favour gender equity as a Sustainable Development Goal while 24 (20%) disagreed.

5.1 Hypothesis

There is no significant relationship between environmental education and undergraduates' perceptions of sustainable development.

Table 6: Pearson Correlation of Environmental Education and Undergraduates' Perceptions of Sustainable Development

Variable	N	Mean	SD	R	P
Environmental Education	120	8.49	3.71	0.455*	0.000
Perception of Sustainable Development	120	21.58	6.51		

*p<0.05

Table 1 shows that the computed r-value (0.455) is significant at the p<0.05 level of significance. The null hypothesis is rejected. This implies that there is a significant relationship between environmental education and undergraduates' perceptions of sustainable development. The correlation between environmental education and undergraduates' perceptions of sustainable development is moderate and statistically significant in a positive direction.

6. Discussion of Findings

The study showed that environmental education was not taught in the faculty of the institution under study. This finding is consistent with the finding of Adebisi and Jegede (2020) who stated that courses such as agricultural engineering, computer engineering,

electrical engineering, civil engineering and mechanical engineering that are required in Benchmark Minimum Academic Standard (BMAS) are not included in their curricular have failed to accommodate any of the environmental courses in their programmes whether as discrete or integrated. This implies that environmental courses should be included in the curriculum of undergraduate programmes in science and applied science education courses to improve their knowledge and skills in the classrooms, laboratories and workshops so as to be environmentally conscious while carrying out their various activities. Also, the trend will not favour Boca and Sarachi view (2019), that environmental literacy education is necessary to be carried out continuously since environmental care behaviour and good social relations are manifestations of an individual's perception and awareness of the environment.

The study however revealed that the perception of undergraduates in the said university on sustainable development is positive, but because environmental education was not taught in the university. This finding is in agreement with the finding of Barraza and Walford (2002), who also pointed out that undergraduates' perceptions of the contents of sustainable development are influenced by media such as social media, television, computer games and other social activities. Undergraduates in the institutions must have gotten their environmental knowledge from other sources and not through direct curricular transmission by the contents of sustainable development through environmental education. A situation where undergraduates in the institution will derive sustainable development knowledge from other sources outside the school curriculum will not reflect well if the institution must join the international campaign and advocate for sustainable development.

The study showed that gender issues had effects on undergraduates' perceptions of sustainable development. This finding supports the finding of Melero & Solis-Espallargues (2012) who revealed that there should be a form of Education that integrates an environmental focus into all programmes to prepare undergraduates as agents of change.

All the items against question seven (7) had mean values above the cut-off point, indicating that there is masculine superiority against female persons in every fabric of society which does not favour sustainable development and that this societal ill has been established in the minds of undergraduates. There could be an avenue to initiate and consolidate academic reforms to correct this societal anomaly such that male undergraduates will not adopt this age-long societal attitude and female undergraduates be encouraged to see themselves as an indispensable part of the agents of change needed to promote sustainable development in the society through the institutions of higher learning.

Family background, according to the study, influenced undergraduates' perceptions of Sustainable Development as all the items against question six (6) had mean values above the cut-off point, showing that parents' personalities and attitudes can stimulate students against or in favour of sustainable development and that when

parents have sound moral values, irrespective of their financial status, their children could do well in schools and contribute meaningfully to sustainable development.

The study as well revealed that peer groups had an influence on undergraduates' perceptions of sustainable development. This finding correlates with Pandilla, Walker and Bean (2009), who revealed that peers may strongly determine preference in the way of dressing, speaking, using illicit substances, sexual behaviour, adopting and accepting violence, and adopting criminal and antisocial behaviours. This implies that friends could have a potent influence on the way students perceive and respond to situations in society and that students could be influenced into cultism, drug abuse, prostitution and fornication, examination malpractices and other related bad behaviours which may not be in favour of sustainable development. The institution has been doing well in the fight against the influence of peers on undergraduates through campaigns and advocacy against cultism, drug abuse and examination malpractices among other unsustainable behaviours relating to peer group influences. If this effort is sustained and consolidated, undergraduates of the institution could be role models among their counterparts elsewhere which is worthy of emulation by every university.

The study finally showed that there was a significant relationship between environmental education and undergraduates' perceptions of sustainable development. This agreed with Boca and Sarachi (2019) that environmental education trains and prepares the future generation for a green society and the creation of a sustainable environment. The correlation between environmental education and undergraduates' perceptions of sustainable development is moderate and statistically significant in a positive direction. This indicates that Environmental Education gives undergraduates the required literacy to manage environmental problems such as climate change, global warming, and loss of biodiversity among others to achieve sustainable development.

7. Recommendations

Based on the findings of the study, the following recommendations were made:

- 1) Environmental education which has the potential to inculcate in students, environmental literacy for environmental quality and decision-making process to encourage a healthy society and sustainable future as well as enhance undergraduates' perceptions of sustainable development should be integrated in the higher institutions' programmes.
- 2) Parents should at the family level endeavour to inculcate environmental culture and ensure that their children are making friends with those who are diligent and have respect for nature, biodiversity and gender equity so as to promote sustainable development in any environment they find themselves.

8. Conclusion

Based on the findings of this study, it was concluded that environmental Education was not taught in the institution under study. North withstanding, the perceptions of undergraduates is in favour of sustainable development which could have been influenced by the media such as social media, television, computer games and other social activities. Peer groups, family backgrounds and gender issues were important factors that influenced undergraduates' perceptions of sustainable development There is relationship between environmental education and undergraduates' perceptions of sustainable development.

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Conflict of Interest Statement

There was no conflict of interest among the authors during the period of carrying out this study.

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