Bulletin of Environment, Pharmacology and Life Sciences
Bull. Env. Pharmacol. Life Sci., Vol 9[6] May 2020 : 85-95
©2020 Academy for Environment and Life Sciences, India
Online ISSN 2277-1808
Journal's URL:http://www.bepls.com
CODEN: BEPLAD
Global Impact Factor 0.876
Universal Impact Factor 0.9804
NAAS Rating 4.95

ORIGINAL ARTICLE **OPEN ACCESS**

Environmental Attitudes of School Students in the Gaza Strip During the COVID-19 Pandemic

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ABSTRACT
The outbreak of the COVID-19 pandemic has affected educational systems worldwide, leading to the widespread closures of educational institutions including schools and universities. The COVID-19 pandemic will have a profound effect on the environmental attitudes of people for the foreseeable future. In this regard, the purpose of this study was to examine the environmental attitudes of the students within the framework of the new ecological paradigm (NEP) during the COVID-19 outbreak. The study involved 2118 primary and secondary school students from various schools located in the Gaza Strip in Palestine. Overall, the results of the present study showed a high endorsement of the NEP among the sample of the Palestinian students. The mean score for the full NEP scale was 3.72, which indicates that ecological attitudes among the samples were more akin to the NEP. To sum up, , the results showed that the attitudes of the interviewed students were closer to an eco-centric perspective than an anthropocentric perspective. The outbreak of pandemics or epidemics will change the attitudes of people, especially school students, toward nature, environment, resources, and finally the responding toward crisis at the globe.
Keywords: *COVID-19 pandemic, New Ecological Paradigm, Dominant Social Paradigm, primary school students, environmental attitudes.*

Received 12.04.2020 Revised 29.04.2020 Accepted 20.05.2020

INTRODUCTION

A novel coronavirus (hereafter COVID-19 for CoronaVIrus Disease 19) was reported to the World Health Organization (WHO) in the South China seafood market in Wuhan, Hubei Province, China on 31 December 2019. The number of patients with coronavirus has extensively skyrocketed throughout the world. The daily updates suggest the confirmed global cases detected currently stand at 7,039,918, with 404,396 deaths, as of 9 June 2020 [1]. These numbers are likely to have increased substantially well after this paper is published.

In Palestine, the COVID-19 pandemic was confirmed to have spread to the West Bank on 5 March, 2020, beginning the 2020 coronavirus outbreak in Palestine. Later, the first two cases in the Gaza Strip were diagnosed on 21 March. As of 9 June 2020, the number of confirmed patients was 481 with 404 cases have recovered in the West Bank the Gaza Strip [2].

The COVID-19 crisis has health, socio-economic, psychological and educational consequences of the public, particularly the school students [3-6]. The outbreak of COVID-19 pandemic has also affected educational systems worldwide, leading to the widespread closures of educational institutions including schools and universities. The COVID-19 pandemic will have a profound effect on the current status of education for the foreseeable future [7]. As educators, we must also focus on the safety of our students and colleagues. In this regard, the students 'attitudes towards the environment will be changed, especially some students claimed that the outbreak of Coronavirus was due to the degradation of the environment, especially world's natural resources, by human beings. At this critical moment, there is an urgent need to

understand the environmental awareness of the students during the rapid rise period of the COVID-19 outbreak around the world.

During the present years, the bulk of studies have extensively focused on the fields of psychology and sociology to grasp the changes in individual behavior toward the natural environment. Marquart-Pyatt [8] documented that social researches have an interest within the environmental attention of individuals because it's crucial for supporting overall environmental policies. Many researchers have seen that knowledge of people's attitudes will help to predict their behavior. Clayton and Myers [9] show that environmental attitudes are a mix of people's beliefs, values, behavioral intentions and affective responses toward environmental issues. Some widely-accepted rooted beliefs, confidence, values, and attitudes were the source of environmental issues. In keeping with psychology, attitudes cannot be directly known but can be inferred from people's responses [10].

The main challenge is to style an appropriate tool for environmental attitudes. Over 700 scales are constructed for this purpose [11]. Various scales were applied to spot the environmental attitudes measuring what an individual does do, what an individual states he can do respecting environmental issues, how he feels about such issues, and what relevant knowledge he has [12]. These scales included Environmental Concern Scale [13]; Scales based on a translation from beliefs, attitudes, views, and values to actual behavior based on the value–belief–norm (VBN) model of environmental concern and behavior [14]; General Environmental Behavior scale (GEB) [15]; Connectedness to nature scale [16]; the implicit associations test (IAS) [17]; Behavior-based environmental attitude scale [18].

There are technological, sociological, psychological, economic and political factors that determine the people's manners of using nature to fulfill their various needs. Attitudes, values, beliefs, and confidence respecting technological and scientific development, wealth, and dominant social paradigm have been previously reported as the reason for little awareness towards the various environmental problems [19,20].

With an increasing sensitivity toward the environment, there is a shift from the dominant social paradigm (DSP) to the ecocentric New Environmental Paradigm (NEP) [21]. The New Environmental Paradigm (NEP) Scale is considered one of the most famous measures of environmental beliefs in studies that use theoretical models predicting environmental attitudes and behaviors. This scale, which was developed by Dunlap and Van Liere [22], is employed as a measure of endorsement of a pro-ecological worldview [23]. It is applied widely in environmental education where differences in behavior, beliefs, values or attitudes are believed to be explained by an underlying paradigm, values or worldview. By the time, The NEP Scale was developed to incorporate the alteration within the global environmental issues. Since the environmental problems have gotten much attention in recent times, two dimensions were theoretically added to the first scale resulting in a 15-item new form [24].

The Dominant Social Paradigm (DSP), positing growth, progress, abundance, and attitudes contributing to the environmental crisis, is against the NEP, which focuses on the disturbance of ecosystems caused by the fashionable technological revolution. In the NEP scale, nature is considered as a limited resource, exquisitely balanced, and subject to critical human interference [25].

The degree to which such a change of paradigm is achieved in Palestinian society should be identified. This can be because; exceptional circumstances and vigorous problems face the Palestinian, especially political problems, which may cause ignoring the environmental problems. Therefore, the present study aims to measure and analyze students' perceptions based on the NEP Scale in a Palestinian area to evaluate their environmental attitude and locate the most important facets of the NEP Scale. The statistical analysis includes hypothesis tests between the demographics variables and the NEP Scale's mean score. For this reason, we use the NEP scale, one of the most widely used scales for measuring the environmental concern of groups of students. The scale focuses on people's beliefs about our ability to upset nature, the existence of limits to growth and humanity's right to rule over the rest of nature [23].

The environmental attitudes of the Palestinian students never previously been studied, therefore, the present study was conducted to draw conclusions and interpretations in the times of the outbreak of the pandemics and epidemics. The results of this study constitute a baseline for further research on ecological worldviews after ending the quarantine period in Palestine.

The structure of the present paper is that the following: Section 2 provides the background information of the related literature while Section 3 presents the materials of the present study like the study area and the survey design. Section 4 presents the results obtained from the statistical methods applied to measure environmental attitudes. The last section concludes the paper discussing the obtained results.

LITERATURE BACKGROUND

The original NEP scale was published by Dunlap and Van Liere [22], which composed of three dimensions: limits to growth, the balance of nature, and anthropocentrism. Later, it was corrected with

new items to enhance their psychometric ability. The new NEP scale consists of fifteen items and has five sub-scales as follows: limits to growth, anti-anthropocentrism, the fragility of nature's balance, rejection of exemptionalism and the possibility of an eco-crisis [23].

The NEP scale has been applied for different groups of people (like students, children, students, etc.) with a good ability to distinguish between members of target groups [26]. According to the results of different studies, the NEP scale measures pro-environmental beliefs as well as real pro-environmental behaviors [27,28].

In the study of Stern et al. [14], they prove that the results of the NEP scale are associated with norms, behaviors, beliefs, and intentions towards the environment. NEP scale had also been applied to predict environmental behavior and activism, emotional connectedness to environment, and awareness toward environmental issues (e.g. participation in the green electricity program, global warming, landscape preferences, household location choices, waste-reduction, etc) [29-32].

Homer and Kahle [33] pointed out that environmental value leads to environmental attitude and this, in turn, leads to environmental behavior. Previous studies showed a correlation between environmental values and high NEP scores [27,28,34-36].

Numerous studies have shown that socioeconomic profiles (as age, gender, education level, ethnicity, religion, family incomes, occupation, etc), personality, individuality (leisure time activities, sensitivity, etc), friends, parents, or living area effects (parents' life paradigms and their educational backgrounds, development level of the country, friends value systems, etc), sociodemographic, attitudinal, cultural, and behavioral variables are related to nature influences on people' environmental value systems [23,37,38-41].

According to López and Cuervo-Arango [42], NEP scale is related to behavioral intentions. Also, environmental orientation and environmental knowledge are usually used to understand the environmental behaviors of people [43]. Generally, several major studies have demonstrated that environmental concern does not necessarily depend on people's knowledge about environmental processes, their effect on these processes, or the effects resulting from human-induced environmental change [44-47]. The link between environmental concern and environmental knowledge using the NEP scale was also previously shown in the study of Hunter and Rinner [34].

MATERIAL AND METHODS

SELECTION OF PARTICIPANTS

This study involve 2118 students from 7th, 8th and 9th grades who randomly selected from various schools located in the Gaza Strip in Palestine. The aim of randomly selection was to have an equal number of primary school students so that a suitable comparison could be made. The students participated in the study voluntarily. The data for the current study were collected through questionnaires which were applied between January 2020 and February 2020. The majority participants comprised of 58.3% ninth-grade students (Table 1). The majority of them (88.3%) were female. Their ages ranged from 12 to 15, with 74.0% between 14 and 15 years of age.

TABLE1: SAMPLE DEMOGRAPHICS

Demographics		Frequency	Percent (%)
Gender	Female	1870	88.3
	Male	248	11.7
Age	12	142	6.7
	13	388	18.3
	14	1095	51.7
	15	493	23.3
Grade	7th	142	6.7
	8th	741	35.0
	9th	1235	58.3

SAMPLE SIZE

Before applying the questionnaire, the authors conducted a pilot study to determine the feasibility of the study protocol, clarify unclear sentences of the questionnaire and identify weaknesses in the study. Concerning sample size, the estimation was done by using the equation of probability and confidence interval. Viechtbauer *et al.* [48], described a simple method for choosing a sample size for a pilot study that ensures the discovery of potential problems with high confidence. For our calculations, the confidence level is set at 95%, meaning that a 5% significance level is set. According to Viechtbauer *et al*. [48], the equation for sample size sampling is expressed in Equation (1):

$$n = \ln (1- \square) / \ln (1-\pi) \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots (1)$$

Where n denotes the number of participants, $\square$ denotes probability (0.05), and π denotes confidence level (95%). In the present study, for π = 0.05 probability, required the inclusion of n = ln (1-0.95)/ln (1-0.05) = 58.40, or rather 59 participants in the pilot study, so that the problem was detected with a high confidence level.

After conducting the pilot study, the questionnaire has applied to 2118 school students during the closure of the schools as a result of the COVID-19 outbreak. At the time of conducting the present study, there were confirmed cases of COVID-19 in Palestine, therefore schools were closed and health intervention measures had been imposed to restrict movements of individuals to contain the outbreak of the COVID-19 pandemic. Because it was not possible to conduct a community-based sampling survey during the movement restrictions period, we decided to collect the required data online. To this end, a poster was posted on the groups of Facebook and WhatsApp as well as on school. This poster included an introduction on the background of the study, objective, voluntary nature of participation, declarations of anonymity and confidentiality and the link of required questionnaire. The students were instructed to complete the questionnaire on their own via clicking the link.

DATA ANALYSIS

The New Ecological Paradigm Scale, 15-item revised form, was applied as a measurement tool in this study. Each item of the NEP scale was measured using a 5-point Likert scale. The scale items are coded from 1 (strongly disagree) to 5 (strongly agree), while 3 is unsure. Agreement with the seven even-numbered items by the students are meant to represent statements endorsed by the DSP. On the other hand, agreement with the eight odd items is meant to reflect endorsement of the NEP. The seven odd-numbered DSP items on the scale were reverse scored. Also, the Cronbach's alpha internal consistency coefficient of the scale was determined. Statistical analysis included a tabulation of the frequency distribution of students' responses to the NEP scale and one-way ANOVA.

$$n = \ln (1- \square) / \ln (1-\pi) \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots (1)$$

RESULTS

Initially, a reliability test was applied to measure the internal consistency of the NEP Scale. A Cronbach's a value equal to 0.792 was obtained, which reveal an acceptable level of reliability.

Based on methods applied by Ogunbode [49] deploying similar data, principal component analysis (PCA) was applied to investigate the extent to which the pattern of responses among the samples was consistent with the hypothesized structure of the NEP [49]. Each component in this method interprets a proportion of the variance that has not been interpreted by the other created components. The results of Kaizer-Meyer-Olkin's Measure of Sampling Adequacy (KMO = 0.717) and Bartlett's test of sphericity ($p < 0.001$) indicated that the data were suitable for PCA. The PCA was applied using varimax rotation, a method that minimizes the number of large weight variables and makes them more interpretable. Table 2 confirms the existence of the NEP Scale's five components in the context of the present study, based on the number of components with eigenvalues greater than 1.

TABLE2: TOTAL VARIANCE EXPLAINED BY COMPONENTS

Component	Initial Eigenvalues		
	Total	% of Variance	Cumulative %
1	4.363	29.087	29.087
2	1.987	13.244	42.331
3	1.413	9.422	51.753
4	1.193	7.953	59.706
5	1.136	7.571	67.277
6	0.889	5.930	73.207
7	0.746	4.976	78.184
8	0.610	4.066	82.250
9	0.578	3.856	86.105
10	0.531	3.541	89.646
11	0.428	2.855	92.501
12	0.377	2.516	95.017
13	0.329	2.192	97.209
14	0.246	1.643	98.852
15	0.172	1.148	100.000

Table 3 shows how the NEP Scale's items are grouped into the five extracted components, based on their loadings.

Table 3: Principal Component Analysis For The 15 Items Of The Nep Scale

NEP scale item	Components				
	1	2	3	4	5
1. "We are approaching the limit of the number of people the earth can support".	0.506				
2. "Humans have the right to modify the natural environment to suit their needs".		0.727			
3. "When humans interfere with nature, it often produces disastrous consequences".			0.534		
4. "Human ingenuity will insure that we do NOT make the earth unlivable".				0.797	
5. "Humans are severely abusing the environment".					0.532
6. "The earth has plenty of natural resources if we just learn how to develop them".	0.818				
7. "Plants and animals have as much right as humans to exist".		0.685			
8. "The balance of nature is strong enough to cope with the impacts of modern industrial nations".			0.648		
9. "Despite our special abilities, humans are still subject to the laws of nature".				0.780	
10. "The so-called "ecological crisis" facing humankind has been greatly exaggerated".					0.519
11. "The earth is like a spaceship with very limited room and resources".	0.784				
12. "Humans were meant to rule over the rest of nature".		0.691			
13. "The balance of nature is very delicate and easily upset".			0.630		
14. "Humans will eventually learn enough about how nature works to be able to control it".				0.777	
15. "If things continue on their present course, we will soon experience a major ecological catastrophe".					0.647

Examining the NEP Scale's items scores enabled the evaluation and measurement of the environmental concern of the interviewed students. Table 4 illustrate the evaluation of the interviewed participants regarding each item based on frequency, percentage (%) distribution and mean score. NEP scores were calculated as an average of all scores on the individual scale items. It is generally accepted that a NEP score of 3 is the boundary between an anthropocentric and a pro-ecological worldview [50,51]. The mean score for the full NEP scale in this study was 3.72, which indicates that ecological attitudes among the samples were more akin to the NEP (Table 4). The mean score for seven DSP items ranged from 2.70 to 4.47, while that of the eight NEP items ranged from 3.28 to 4.35. Frequency distributions on the NEP items show that 71.3% of the interviewed students agreed on these statements, whereas only 14.2% disagreed. Conversely, distributions on the DSP items reveal that 28.6% agreed with the statements, while there are considerable numbers of disagreeing (59.3%) and undecided (12.1%) students. Hence, the examination of the overall frequency and mean distributions reveal that majority of students support the NEP statements to a varying degree, but there is no widespread support for the NEP view in general. The results on the statements are as follows:

Limits to growth: The NEP scale assumes that growth has a limit, which is based on the limitedness of the natural resources around the world. Accordingly, item 1 concentrates on the increase of population, and item 11 highlights the limitedness of resources by means of an analogy likening the world to a spaceship. Item 6 suggests that the world has plenty of resources. 46.7% and 8.3% of the students answered 'unsure' for item 1 and item 11 respectively. Also, the results showed that 50% of the students agreed that population increase was about to exceed the capacity of the world, but the higher percentage of the students (40.0%) agreed with the world-spaceship analogy based on limited resources. In contrast with that, 3.3% of the students agreed, "the earth has plenty of natural resources if we just learn how to develop them".

TABLE4: RSPONSES CONCERNING NEW ENVIRONMENTAL PARADIGM SCALE (NEP) ITEMS

NEP Scale Items		Level of participation %					M	SD
		SD (1)	D (2)	U (3)	A (4)	SA (5)		
1. "We are approaching the limit of the number of people the earth can support".	F	36	36	989	704	353	3.62	0.85
	%	1.7	1.7	46.7	.332	16.7		
2. "Humans have the right to modify the natural environment to suit their needs".	F	671	917	70	212	248	3.73	1.33
	%	31.7	43.3	3.3	10.0	11.7		
3. "When humans interfere with nature, it often produces disastrous consequences".	F	106	141	530	811	530	3.72	1.08
	%	5.0	6.7	25.0	38.3	25.0		
4. "Human ingenuity will insure that we do NOT make the earth unlivable".	F	883	883	106	140	106	4.08	1.09
	%	41.7	41.7	5.0	6.7	5.0		
5. "Humans are severely abusing the environment".	F	36	248	106	1094	634	3.97	0.99
	%	1.6	11.7	5.0	51.7	30.0		
6. "The earth has plenty of natural resources if we just learn how to develop them".	F	1271	707	70	0	70	4.47	0.85
	%	60.0	33.4	3.3	0.0	3.3		
7. "Plants and animals have as much right as humans to exist".	F	0	108	176	917	917	4.25	0.82
	%	0.0	5.1	8.3	43.3	43.3		
8. "The balance of nature is strong enough to cope with the impacts of modern industrial nations".	F	317	566	460	599	176	3.12	1.22
	%	15.0	26.7	21.7	28.3	8.3		
9. "Despite our special abilities, humans are still subject to the laws of nature".	F	141	70	106	1060	741	4.03	1.07
	%	6.7	3.3	5.0	50.0	35.0		
10. "The so-called "ecological crisis" facing humankind has been greatly exaggerated".	F	459	459	353	494	353	3.08	1.42
	%	21.7	21.7	16.7	23.3	16.7		
11. "The earth is like a spaceship with very limited room and resources".	F	248	530	176	705	459	3.28	1.37
	%	11.7	25.0	8.3	33.3	21.7		
12. "Humans were meant to rule over the rest of nature".	F	282	353	423	566	494	2.70	1.36
	%	13.3	16.7	20.0	26.7	23.3		
13. "The balance of nature is very delicate and easily upset".	F	318	318	176	740	566	3.43	1.42
	%	15.0	15.0	8.3	35.0	26.7		
14. "Humans will eventually learn enough about how nature works to be able to control it".	F	740	918	318	36	106	4.02	1.02
	%	35.0	43.3	15.0	1.7	5.0		
15. "If things continue on their present course, we will soon experience a major ecological catastrophe".	F	0	70	213	740	1095	4.35	0.79
	%	0.0	3.3	10.0	35.0	51.7		
Mean total NEP score							3.72	0.51
SD: Strongly disagree, D: Disagree, U: Unsure, A: Agree, SA: Strongly agree								

Anti-anthropocentrism: The NEP scale disagrees with the idea that humans have the right to modify the natural environment to suit their needs (item 2), and nature exists primarily for human use and has no inherent value of its own (item 12). Over one-third of the respondents (31.7%) strongly and 43.3% mildly oppose anthropocentric view (items 2). There is still a considerable number of supporters (21.7%). The Anti-anthropocentric statement about the right of existence of plants and animals (item 7) is supported by the vast majority (86.6%). This result suggests that one does not have to be an environmentalist to acknowledge the right of existence of plants and animals.

Balance of nature: The NEP scale assumes the existence of a balance that can be disrupted by human beings. The items 3, 8, and 13 the scale are about the theoretical sub-dimension of the balance of nature. The results showed that 63.3% and 61.7% of the students agreed with items 3 and 13 respectively. On the other hand, while 41.7% of the students rejected item 8 (a dominant social paradigm perspective), a considerable number of the students (21.7%) were unsure about it.

Anti-exemptionalism: It is one of the theoretical sub-dimensions covering items 9, 4, and 14 of the NEP Scale which suggests that the people who accept the NEP are supposed to reject that human beings or people are exempt from the constraints of nature. This view supports the domination of humans and the economy over nature. In the current study, the averages of the items included in this sub-dimension varied between 4.02 and 4.08, and most of the responses, in this case, contained indecisiveness.

Eco-crisis: The NEP scale argues that human intervention in nature may lead to unfavorable results at a disaster level that might be described as an eco-crisis. The items 5, 10, and 15 of the scale are about the theoretical background of eco-crisis. while almost more than half of the students (30.0%) strongly agreed with the item 5, 1.6% of the students strongly disagreed with it. About 5.0% of the students rejected the idea, 'The so-called 'ecological crisis' facing humankind has been greatly exaggerated'. The findings of the present study revealed that half of the students (51.7%) strongly agreed with item 15, whereas no one (0.0%) agreed with it.

Mean scores for the five facets of the NEP Scale are presented in Figure 1. Based on this Figure, we conclude that the dominant social paradigm does not characterize the respondents, meaning that they do not believe that humans are superior to other all other species, the Earth provides unlimited resources, and that progress is an inherent part of human history; thus, they are preferably characterized by a NEP attitude and seem environmentally sensitive. Furthermore, standard deviations are relatively low (reality to limit growth), which means that the respondents' views are somewhat similar.

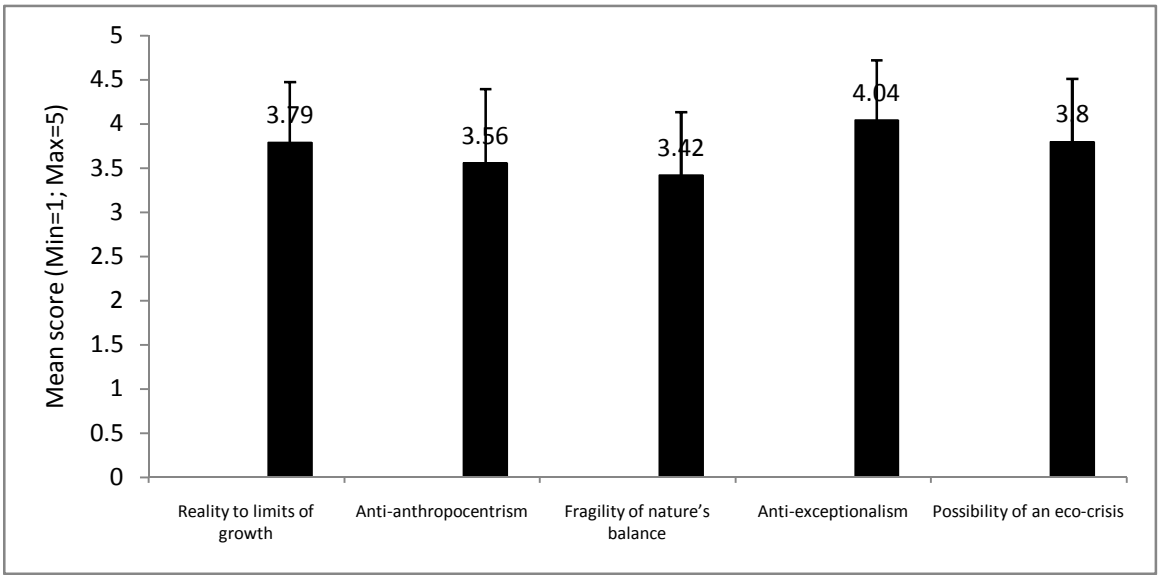

Figure 1. Mean scores and standard deviation for the five New Environmental Paradigm (NEP) subscales.

The possible differences between environmental awareness as captured by NEP Scale mean scores and students' demographics were also tested. Applying a one-sample Kolmogorv-Smirnov test, it was concluded that the NEP mean score is normally distributed ($p = 0.124$); thus, one-way Analysis of Variance (ANOVA) will be applied to test the significance of the difference between the means of demographics and NEP Scale mean score. The one-way ANOVA results reveal that there is no statistically significant difference between the means of the NEP score and respondents' grade ($p = 0.624$). Similarly, there was no significant difference between male and female respondents ($p = 0.868$) in total NEP scores. A comparison of mean scores across age categories also revealed no significant variation ($p=0.167$).

DISCUSSION

The purpose of this study was to examine the environmental attitudes of the students within the framework of the new ecological paradigm during the COVID-19 Pandemic. The results of this study may be significant as an indicator of the current state of environmental awareness among students in the Gaza Strip. The results of the current study were compared and supported with results from different countries, as there are no previous studies that dealt with environmental attitudes in the Gaza Strip, Palestine.

Overall, the results showed that the attitudes of the interviewed students were closer to an eco-centric perspective than an anthropocentric perspective. The battle against COVID-19 is still continuing around the world. And thus, the environmental attitudes of the students were largely affected by the current circumstances including the outbreak of COVID-19. Indeed, we have no exact knowledge about the environmental attitudes of students before the COVID-19 Pandemic, but all indications prove that the students' attitudes were positive.

The results of the present study showed a high endorsement of the NEP among the sample of the Palestinian students (3.72). Compared with similar studies from other countries such as Australia (3.96) [52], Brazil (3.55) [16], United Kingdom (3.31) [53], United States (3.57) [54], Turkey (3.38) [24], Greek (4.85) [55] the results of this study suggest that ecological attitudes among the participants are more closely characterized by NEP.

The results of the current study revealed that there is no statistically significant difference between the means of the NEP score and respondents' gender, grade, and age. Similar results were found in the study of Zelezny et al. [56], who pointed out that demographic characteristics (gender and age) have no significant influence on NEP endorsement among the Nigerian participants.

Natural spaces, such as agricultural lands and wilderness areas, have been seriously degraded through the direct impacts of political conflicts as well as human exploitation around most parts of the Gaza Strip over a long time. The impacts of extensive environmental degradation have resulted in pollution, drought, erosion, loss of arable land, flooding, and desertification. Such issues constitute a considerable cause of concern to many Palestinian, and related reactions among the participants in this study, show that human's role in the proliferation of these environmental issues is generally acknowledged. Based on the NEP framework, it is evident that the students surveyed bear a level of environmental awareness that mainly depends on the realization of the harmful exploitation of nature. A little number of the participants exhibited less positive environmental worldviews in some aspects, as a result of the dearth of environmental knowledge and a factual understanding of humanity's interrelationship with the environment.

Despite the harsh socioeconomic challenges and political circumstances faced by the larger proportion of Palestinian society, the Palestinians students have shown a good level of awareness, knowledge, and concern for environmental issues. The reasons standing behind increasing environmental awareness of the Palestinian students are due to activating the campaign of "Duty to Others". Duty to Others is considered one of the fundamental principles of the Scout Movement, which defined as "the participation in the development of society, with recognition and respect for the dignity of one's fellow-man and the integrity of the natural world" [57]. Under this principle, several main precepts of the Scout Movement are grouped, since all deal with a human's responsibility towards society, especially the environment, in its different dimensions. In scouting, the concept of the integrity of the natural world expresses the idea of nature conservation. It confirms that the life-space of living organisms on earth constitute an interdependent system and that any damage to any part is communicated to the whole system. This concept stresses that humans must exploit natural resources in such a manner as to satisfy the balance and harmony of the environment [57,58]. The Palestinian Ministry of Education and Higher Education (MOE) extensively implemented many activities and programs, during the campaign of "Duty to Others", related to environmental issues. Hence, the efforts of MOE at students' sensitization and education about environmental issues as a priority led to increasing the local and global environmental awareness of the students.

It is acknowledged that the present study is based on a sample of convenience and thus, limited to the extent to which its results can be generalized. However, educational environments, such as schools, universities and other educational institutions, are unique in their affordance of opportunities for cultural and social enhancement to people. Hence, the study is intended primarily a measurement of environmental attitudes in Gaza Strip by examining the part of society best positioned for the subject to favorable social and informational conditions to show off a positive environmental outlook compared to other socio-demographic groups.

Also, the current study showed that students' socio-economic status had a significant effect on their environmental attitudes such that those with a higher contact with nature, for example, prefer to visit natural places (e.g. agricultural field), had more positive environmental attitudes than those with less contact, prefer to visit unnatural places (e.g. museum or stadium). In this regard, the results of this study are in agreement with the study of Ibrahim and Babayemi [59], who linked the environmental awareness to positive environmental attitudes and support for environmentalism among the participants.

In the present study, a comparison of mean scores across age categories revealed no significant difference. This result disagrees with the result of the study of Arcury and Christianson [60] and Mohai and Twight [61], they showed that younger participants are more likely to hold environmental viewpoints compared to older participants where the age is an important factor in environmental attitude. The ages of the students participated in this study were close together, so there was no significant difference in their response.

The results of the current study showed that there was no significant difference between male and female respondents in total NEP scores. Different results were previously documented in the study of Kaltenborn et al. [62]; Diamantopoulos et al. [63]; Zelenzy et al. [56]; Mohai [64]. They found out that female respondents scored higher than male respondents concerning the NEP scale.

Based on this study, it was found out that there is no statistically significant difference between the means of the NEP score and respondents' grade, which mean that the attitudes of 7^{th}, 8^{th}, and 9^{th} grade students toward the environment were not more or less positive among them. Contradictory results were reported in the study of Erkal . [65], they showed that the environmental attitudes of third grade students were more positive than those of fourth grade students. In the study of Hart [66] and Hensher and King [67], they found out that there was a difference between the environmental attitudes of first and fourth grade university students, and that fourth grade students demonstrated more positive attitudes toward the environment.

CONCLUSION

People's environmental awareness differs from one to another, and they also differ in their sensitivity. Although the world is increasingly developing, the sensitivity of individuals is not increasing in parallel and, simultaneously with this development, there is air, soil, and water pollution and numerous related environmental issues. Finding solutions to these environmental issues can be made possible if people are aware of these issues and the subsequent risk of living organisms on the planet.

In this study, the attitudes of the Palestinian students toward the environment were found to be positive and they adopt an ecological worldview in the time of the COVID-19 outbreak. Anti-exemptionalism has the highest score amongst the components of the NEP Scale while the possibility of eco-crisis has the second-highest score, reveling that students are ecologically sensitive. It was determined in the study that there is no significant difference between the means of the NEP score and respondents' gender, grade and age.

Based the framework of the findings given above during the COVID-19 crisis, it will be stated that the environmental-related activities and programs have a crucial role within the formation and growth of environmental awareness. Furthermore, starting environmental education in primary school will lead to an increase in the environmental sensitivity of the students and thus help toward the creation of a habitable environment which will increase the wellbeing of the world. additionally, to stay the environmental issue on the agenda, it's important to make sure the continuation of educational studies being carried concerning the preservation of the natural environment, which can both contribute to the literature and attract the eye of related organizations like public and civil society institutions and also the private sector. In this respect, it can be suggested that (1) curriculum contents should be enriched the way that deals with global problems of the natural environment during the outbreak of pandemics or epidemics, (2) activities that might affect the environmental attitudes and behaviors should be involved more than theoretical knowledge.

ACKNOWLEGEMENT

The authors would like to express their heartfelt thanks and sincere gratitude to Mr. Mohsen Saidam, Principal of Al-Bureij Elementary B-Boys School, UNRWA, for his continuous support, generous help, and fruitful constructive suggestions. The authors are grateful to all the students for providing their time in filling the questionnaire.

CONFLICT OF INTEREST

The authors declare no conflicts of interest regarding the publication of this paper.

FUNDING

This research did not receive any specific grant from funding agencies in the public, commercial, or not-for-profit sectors.

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CITATION OF THIS ARTICLE

Radwan E, Radwan A, Radwan W. Correlation between Interpupillary Distance and stereo acuity.Bull. Env. Pharmacol. Life Sci., Vol 9 [6] May 2020: 85-95