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Health and environmental practices levels among female students of scientific and humanities academic majors

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Abstract:

BACKGROUND: Courses' resources is an important ingredient for building awareness, despite the availability of health and environmental knowledge in some subjects, students' practices still need more improvement. The study aims to investigate the level of health and environmental practices among university female students of both scientific and humanities subject majors, and its relationship to the academic major.

MATERIALS AND METHODS: A descriptive research design is applied to a sample of 410 female students enrolled in scientific and humanities majors during 2017/2018 academic year. A "Health and Environmental Practices Scale" is prepared for data collection. It includes 58 items with Cronbach's alpha = 0.71 and 0.69 for the two domains. The means percentage and independent *t*-test for the two majors applied, as $P \leq 0.05$ was statistically significant.

RESULTS: Results showed that (i) the level of health and environmental practices is "moderate" with a mean of 2.89, 3.17 for both domains, respectively; (ii) there is no statistically significant difference between health practices level and environmental practices level; (iii) there is no statistically significant difference between humanities and scientific majors and health and environmental practices level among students of humanities and scientific majors, which means that the impact of the interdisciplinary courses on the level of health and environmental practices is not clear.

CONCLUSIONS: Health and environmental awareness among students are found to be moderate. However, actual health and environmental practices are still a huge challenge because of the gap between theory and practice.

Keywords:

Environmental health, female learning, health practices

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Introduction

Although the level of health knowledge and awareness is important for the constitution of health behaviors and practices, theories of understanding how to develop healthy behaviors of individuals cannot be considered in isolation from social factors and frameworks as they inform new ways of conceptualizing and responding to some of the most pressing contemporary health challenges and dangers that may adversely affect health.[1] Health curricula should provide students with not only concepts, but also the accepted health practices of each culture according to the community identity, and health education should apply behavioral change approaches.[2] The indications which confirm whether some factors may affect health-related behaviors and practices are still undefined and need more studies and this is considered as a challenge.[3]

In addition, environmental issues have become pressing lately because of their

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inseparable relationship to human health. Water, air, and food pollution have negative effects on the health of individuals and communities. International organizations are demonstrating increased interest in environmental issues. Many conferences and symposia around the world in which participants call individuals to preserve the environment.[4] Environmental awareness and environmental sensitivity should be cultivated among the masses particularly among youths and should be an integral part of any curriculum encouraging children to take an active role in the protection of their environment in one way by which the critical balance between individuals and the and environment may be preserved.[5] Therefore, it is necessary to promote the environmental awareness and to provide the individuals with a proper background about the environmental issues, and to help them develop positive attitudes and more importantly, to get them to acquire the necessary skills that make them able to deal in an environmentally friendly manner.

Some of the newly transitioned communities expected to see a profound positive change in the levels of health and environmental practices, especially with the development of higher education systems and the interest in providing curricula to develop health and environmental awareness among students as one of the scientific outcomes. Despite such efforts, actual health, and environmental practices continue to be a huge challenge because of the gap between theory and practice, especially in female learning. This research aims to investigate whether the level of health and environmental practices upgrade according to the study major for female students, while the research may answer these questions:

1. What is the level of health practices among female students of humanities and scientific majors as a whole?
2. What is the level of environmental practices among female students of humanities and scientific majors as a whole?
3. Is there a significant difference between the means of health practices level and environmental practices level among female students?
4. Is there a significant difference between the means of health practices level and environmental practices level and humanities and scientific majors among female students?

Materials and Methods

A descriptive research design is employed. The populations of the study comprised female students in the preparatory year enrolled in scientific and humanities majors at the colleges of Arts, Education, and Science – Dammam and the Science Path-Jubail, the sample was randomly selected of (410) female students as (60.2%) enrolled in humanities major and (39.8%) in scientific major [Table 1].

A "Health and Environmental Practices Scale" (HEPS) considered as the study tool, comprised (58) items related to two domains. A questionnaire using a five-point Likert scale was used in the study, where rarely = 1, occasionally = 2, sometimes = 3, often = 4, and always = 5. Scale Categories are reversed in negative items. The researchers prepared the items of the questionnaire. The reliability of the scale was submitted to referees; Pearson's correlation test is performed to test the correlation between the study domains [Table 2]. The internal consistency of the questionnaire was tested, by Cronbach's coefficient alpha method with SPSS [Table 3], to interpret the data statistical criteria presented [Table 4]. A paper and pencil-based questionnaire (HEPS) was applied during the 2nd semester of academic year 2017/2018.

Statistical method was used: mean and standard deviation for each group are calculated, and a *t*-test is applied to determine the significant difference.

Results

The questionnaire was administered for the population of (585) female students, out of which sample (410)

Table 1: Description of the study sample and population

Majors	*n* (%)	Total	Population	Response rate
Humanities	247 (60.2)	410	585	70%
Scientific	163 (39.8)			

Table 2: Pearson's correlation coefficient values between each field of the scale

	Health	Environment
First domain		
Pearson's correlation coefficient	1	0.522
Statistical significance		0.00
Second domain		
Pearson's correlation coefficient	0.522	1
Statistical significance	0.00	

Table 3: Internal coherence consistency coefficients

Fields	Number of items	Cronbach Alpha
Health	34	0.691
Environment	24	0.711

Table 4: Statistical criteria used in "HEPS"

Mean	Level
1.00<1.80	Very low
1.80<2.60	Low
2.60<3.40	Moderate
3.40<4.20	High
4.20<5.00	Very high

female students were returned with a response rate of 70%.

1. The level of health practices among female students showed that [Table 5] the entire level of health practices is moderate. Item (5), namely "I sleep with my cell phone near my bed," ranked first with a mean of 4.31 and a very high level of practice. This item is followed by other six items (22, 24, 27, 21, 28, and 19) with a high level of practice out of 34 items. While the practice level of most items is also moderate, the practice level of items No. 14, 40, 10, 2, 56, 8, 13, 9, and 7 is found to be low. In addition, item No. 3, which reads "I change the colour of my contact lenses à la mode," is ranked the last with a mean of 1.66 which is considered to be an appropriate level since this item involves negative connotations
2. The level of environmental practices among female students showed that [Table 6] the entire level of health practices is moderate. Item (45), namely "when printing, I get my printer to print on one side only," ranked first with a mean of 3.88. This practice is environmentally unfriendly since, by doing so, students waste natural resources particularly that of which paper is made. This item is followed by items No. 48, 32, 46, and 35 the practice level of which is high. While the practice level of most items is also moderate, the practice level of items No. 55 and 30 is found to be low and item No. 57, namely "I leaf through brochures and flyers issued by Ministry of Environment," ranked the last with a mean of 2.14
3. The level of health and environmental practices, among female students enrolled in humanities and scientific majors, is "moderate." The means of both domains are found to be 2.89 and 3.17, respectively, which means that the mean of health domain is lower

Table 5: Means and standard deviations of health domain items arranged in descending order according to their means

Item No.	Item	M	SD	Level
5	I sleep with my cell phone near my bed.	4.31	1.22	Very high
22	I do not get enough sleep during the period of examinations.	3.99	1.3	High
24	I never have time for morning sports.	3.74	1.45	High
27	I brush my teeth after eating.	3.69	1.28	High
21	I make a medical check-up when I have a severe illness.	3.53	1.45	High
28	I manage to have the proper weight for my body.	3.42	1.4	High
19	I avoid taking medications without a prescription.	3.42	1.38	High
18	I do not have enough time for breakfast.	3.3	1.4	Moderate
43	I prefer Making the volume louder when I listen to TV and music.	3.2	1.47	Moderate
25	I do not eat fresh vegetables daily.	3.1	1.33	Moderate
23	I eat with big appetite sweets and foods rich in white sugar.	3.09	1.35	Moderate
1	I do not wear too much make-up.	3.09	1.42	Moderate
4	I make sure to drink plenty of water during the daylight hours.	3.08	1.3	Moderate
20	I read the instructions and internal bulletin of medicines before using them I read package inserts before I take any medications.	3.07	1.54	Moderate
29	I constantly wear headphones when I am on the phone.	3.01	1.55	Moderate
11	I always prefer eating fast foods outside.	2.97	1.35	Moderate
58	I prefer walking to riding.	2.91	1.55	Moderate
12	I make sure to avoid wearing tight clothes.	2.8	1.35	Moderate
44	I use plastic and aluminium utensils and accessories for cooking and eating.	2.84	1.49	Moderate
15	I play online games more than physical games.	2.76	1.44	Moderate
17	I prefer fizzy drink to other drinks.	2.75	1.46	Moderate
6	I enjoy watching tv at a close distance.	2.7	1.4	Moderate
16	I make sure to maintain the correct posture when studying and sitting.	2.67	1.29	Moderate
26	I read the information written on canned and frozen foods labels.	2.6	1.44	Moderate
14	I sleep and wake up early so that I could feel energised.	2.48	1.34	Low
40	I prefer reading e-books to paper books.	2.47	1.5	Low
10	I use hair straightener daily.	2.43	1.41	Low
2	I frequently visit various beauty salons.	2.34	1.38	Low
56	I do not care about the cell phone or computer screen resolution when I am to buy it.	2.26	1.46	Low
8	I avoid wearing clothes made of synthetic fabrics.	2.25	1.17	Low
13	I prefer wearing high heels.	2.25	1.31	Low
9	I always wear my sunglasses during daylight hours.	2.2	1.46	Low
7	I don't mind dying my hair many times.	1.94	1.44	Low
3	I change the colour of my contact lenses à la mode.	1.66	1.16	Low
	Domain as a whole	2.89		Moderate

Table 6: Means and standard deviations of environment domain items arranged in descending order according to their means

Item No.	Item	M	SD	Level
45	When printing, I get my printer to print on one side only.	3.88	1.33	high
48	I turn off electronic and gaming devices when I am not using them.	3.72	1.41	high
32	I prefer living away from the noise.	3.6	1.31	high
46	I use water wisely for daily purposes.	3.5	1.28	high
35	I open the windows of the house occasionally.	3.49	1.47	high
53	I use a lot of air fresheners.	3.38	1.48	moderate
37	I buy organic fruits and vegetables.	3.34	1.37	moderate
34	I try to use sunlight instead of artificial lights.	3.32	1.43	moderate
42	I use paper tissues and serviettes excessively in all daily activities.	3.25	1.46	moderate
38	I reuse the one-sided used papers as draft papers.	3.23	1.42	moderate
54	I make sure that the appliance is energy efficient before I buy it.	3.19	1.51	moderate
33	I prefer using air conditioners than opening the windows.	3.14	1.48	moderate
47	I drive my private car instead of riding the bus with my colleagues.	3.09	1.59	moderate
51	I prefer that everyone in the family has more than one entertainment device.	3	1.5	moderate
49	I make sure to have some green plants inside my house.	2.97	1.46	moderate
52	I encourage those around me to use energy-saving lamps.	2.91	1.47	moderate
41	We do not care about sorting waste and separating each type into different bag.	2.9	1.58	moderate
50	I dispose of old batteries and electronics safely.	2.81	1.48	moderate
39	I do not attend environmental awareness programmes and seminars.	2.7	1.37	moderate
36	I participate in voluntary environmental activities, projects, and campaigns.	2.62	1.42	moderate
31	I use paper bags more than plastic bags.	2.6	1.52	moderate
55	I use my cell phone only in the most necessary matters.	2.34	1.47	low
30	I replace my cell phone whenever a new one is available.	2.27	1.36	low
57	I leaf through brochures and flyers issued by Ministry of Environment.	2.14	1.36	Low
	Domain as a whole	3.1749		moderate

SD=Standard deviation

than that of environment domain as shown in Table 7

4. There is no statistically significant difference between the two means of health practices level and environmental practices level since the *P* value is found to be ≥ 0.05 which indicates the acceptance of the null hypothesis as shown in Table 8
5. There is no statistically significant difference between the means of humanities and scientific majors and health practices level among students of humanities and scientific majors and that there is no statistically significant difference between the means of humanities and scientific majors and environmental practices level among students of humanities and scientific majors since the *P* value is found to be ≥ 0.05 which indicates the acceptance of the null hypothesis as shown in Table 9.

Discussion

The results presented in Tables 5-7 indicate that the level of health and environmental practices, among female students enrolled in humanities and scientific majors, is "moderate" and that was not expected because of the supposed transformation of education, health, and environment in Saudi Arabia. The mean of environmental domain is found to be 3.17 while the mean of health domain is found to be 2.89. These results are in line with other studies[6,7] indicating that the level of health awareness in general among students is "moderate." They also conform to the conclusion by Abu Al-Laban[8] that the level of environmental awareness among students is "moderate." This confirms the fact that advancement of education and its systems attends not simply to the enhancement of the educational process aspects and teaching and evaluation methods, but also to the development of productive learning outcomes, including health and environmental behaviors and practices that graduates need to build their health and environmental capabilities.

That is why, educators call for diversified approaches to students' health and environmental practices promotion, adopting nontraditional activities, and using modern technology to provide programs of high quality to enhance health awareness and practice. The coordination and integration among ministry of education, ministry of health and ministry of media should be enhanced as Alanazi[9] recommends to intensify awareness-promoting campaigns across Saudi community. Such campaigns should employ modern tools such as social software because this software, as Reda[10] indicates, was effective in improving health awareness and some 21st century skills of female students. This in turn helps them form correct mental images and an increased awareness. In addition, these pieces of software

are attractive to students which help them enrich their health background as stated by Hamid *et al*.[11] who point out the role of utilizing social media to expand the role and responsibility of university students and staff toward the environmental sustainability practices.

Fostering physical education activities geared to develop and reinforce students' health and healthy environments is also important as recommended by AL Arjan, *et al*.[12] who suggested listing some subjects related to health, nutrition, and physical education activities within the university compulsory requirements. This has been already adopted by the University where "Health and Fitness" course is mandatory for all students of preparatory year. However, more modification should be made to achieve the targeted goals, to prepare students for a healthy life and to get them to learn the proper knowledge and practices about individual and environment health.

In addition, maintaining public health can be achieved, as AL Arjan, *et al*.[12] indicate, students' awareness and healthy behavior could be enhanced by developing many programs and activities. Health awareness, as stated by Al-Imamy[13] according to the Saudi Ministry of Education (2001), could be also built by employing curricular and extracurricular activities that provide students with the knowledge, values, skills, and health behaviors necessary to make them able to lead healthy individual life and community. Moreover, Kenzig[14] highlights the role of university attendance which includes various activities and experiences that can have a unique impact on the psychosocial development of adult health behaviors, and can influence life course outcomes as short and long-term health and life quality.

Table 7: Means and standard deviations of the "HEPS" domains

Domain	Mean	SD	Level
Environment	3.17	0.42	Moderate
Health	2.89	0.54	Moderate

Table 8: Differences between the means of health practices level and environmental practices level among female students

Domain	Mean	SD	df	*t* test	Significant
Health	2.89	0.42	409	-4.345	0.0
Environment	3.17	0.543			

Although the results are shown in Tables 5 and 6 indicate that there are differences between the two means of health practices level and environmental practices level, that differences are not statistically significant. Similarly, there are differences between the means of humanities and scientific majors and health and environmental practices level among students of humanities and scientific majors, but such differences are not statistically significant. Unlike these results, other studies[15,16] reveal that there are statistically significant differences in the level of environmental awareness due to specialization. Similarly, Ashraah *et al*.[17] find out that there are statistically significant differences in the level of health awareness due to specialization.

Furthermore, this study reveals that environmental awareness is higher than health awareness among female students. This may be attributed to the fact that female students enrolled in scientific majors in the preparatory year do not study yet enough health courses that could enhance their health literacy and awareness and raise them to a level higher than that of environmental awareness. These results may also be attributed that, the female students in both majors are studying a course named (Health and Fitness) which may provide them with similar health information and knowledge. However, such course is not enough to build their capabilities as students do not translate the information it includes into behavioral practices as health education, according to Petherick[2] should adapt behavioral modification programs.

Hansen *et al*.[18] also suggest that health literate should be replaced with the functional intervention of health educated in the nation's priorities for improving health outcomes. In addition, the curricula of general education and the scientific or literary background of female students are not sufficient to raise the level of health and environmental awareness among female students in scientific departments, not to mention their practices. This conforms to other studies[19,20] indicating that general education curricula, including science, neglect many health concepts that should be covered. Moreover, educators, according to Eltenawy,[21] emphasize that health literacy attends not only to obtaining and memorizing of information by students but also to transforming such information into a behavior that should be practiced and should be a part of their daily

Table 9: Difference between the means of health practices level and environmental practices level and humanities and scientific majors among female students

Domain	Major	Number	M	SD	*t*	df	Significant
Health	Scientific	163	2.91	0.44	0.862	408	0.389
	Humanities	247	2.88	0.40			
Environment	Scientific	163	3.14	0.53	-1.11	408	0.297
	Humanities	247	3.20	0.55			

SD=Standard deviation

routine to develop healthy habits since knowledge alone, without practice, does not lead to healthy behavior because such practices are more difficult to achieve, and the revelation of which needs assessment studies to identify how to develop better health practices. This is because healthy behaviors and practices are at a higher-level than awareness and entail more complexity. Furthermore, the formation of the health behavior and practices are affected by the social context, and they still need more studies to understand.[1,3]

Therefore, the present study suggests that there should be a practical part in health courses and students should be engaged in various activities and experiences in order to prepare them to professional and personal life and enhance and promote their behaviors to a level corresponds to this age group in which those students undergoes developmental changes. More attention should be paid to raise the level of health and environmental practices among female students to a level that corresponds to the nature and future aspirations of these times through health and environmental activities and events. Because building health and environmental capabilities require interpreting and acting on health and environmental related information, colleges and universities recently adopted a diversified approach as they recognized the role health is playing in the student experience and its impact on the life of students[14] as the nutritional behavior for female students has been promoted by some educational program based on the Belief, Attitude, Subjective Norm, and Enabling Factors.[22]

Conclusions

Despite the new visions and transformation of education, health, and environment in Saudi Arabia, actual health and environmental practices are still a huge challenge. There is a huge gap between theory and practice. Female students' health and environment practices level is found to be moderate. In addition, it is a well-known fact that specialized knowledge is an essential ingredient for building better health and environmental practices. However, there are no differences between health and environmental practices levels among students taking different subject majors. This may be attributed to the fact that all students study a health course that is "Health and Fitness," and still focus on just cramming and pouring out health and environmental information to just pass examinations. Building capabilities requires not only access to relevant information but also interpretation and application to develop a better health and environmental practices.

Therefore, the present study recommends including various activities and experiences that could have a unique impact on the students' practices and including practical training in teaching the health course. Also recommends developing an environmental course with employing modern means such as social media, incorporating health and environmental issues and concepts in different curricula, and preparing the educational institutions premises. The study results are limited according to the measuring tools and the study sample.

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Conflicts of interest

There are no conflicts of interest.

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