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Knowledge, Attitude and Performance of Health Volunteers' in Cutting down Paper Consumption, Yazd

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ABSTRACT

Introduction: Today, the growing amount of paper consumption and consequently deforestation and environmental destruction have imposed financial burden on different countries around the world. This study aimed to determine the level of knowledge, attitude, and performance of Yazd health volunteers on cutting down the consumption of paper.

Materials and Methods: This descriptive-cross sectional study was conducted on 120 health volunteers of Shahid Sadoughi university of Medical Sciences and Health Services in 2015. A self-made questionnaire containing demographic, knowledge, attitude, and performance questions was applied as the data collection tool. The data was imported into SPSS software V.18 and analyzed with t-test and ANOVA statistical tests.

Results: The participants' knowledge about importance of paper consumption was 80.03 %. The mean and standard deviation scores of knowledge, attitude, and performance of health volunteers were 11.09 ± 2.90, 59.82 ± 2.23, and 41.11 ± 9.50 respectively. The results suggested that the average scores of knowledge and attitude among those with academic degrees were higher than that of other participants and this relation was statistically significant ($p \leq 0.001$). The attitude of married subjects compared to single volunteers' was more positive and there was a significant difference between their attitude and income levels. According to the results, there was a positive and significant correlation between knowledge and attitude as well as attitude and performance ($P < 0.05$).

Conclusion: The findings showed that the level of knowledge, attitude, and performance of health volunteers in Yazd regarding cutting down paper consumption is at a satisfactory level. This suggests that trainings provided for them at different time intervals have been well enough.

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Introduction

Developments of recent century along with population growth and technological advances have led to a new phase of natural and environmental destruction. As a strategic merchandise, about 85 -90 % of paper is produced from natural and man-made forests which has formed a great share of household, administrative, and commercial wastes, thus called the king of wastes [1]. During the last three decades consumption of different kinds of papers and cardboards has tripled worldwide. However, the average annual growth rate of paper products' consumption in developing countries (8.5%) is more than twice the average annual growth rate of consumption in the developed countries (3.2 %) [2]. On average, every year 400 million tons of paper is consumed around the world [3]. On the other

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hand, to produce one ton of paper, 27 trees are cut down, further, in the process of paper production from plant fibers, 400,000 l water and one hour electricity are consumed. Consequently, producing one ton of paper besides its economic costs causes a lot of environmental problems [4, 5]. Cutting down paper consumption is investigated from the two perspectives of helping to protect the environment and the economic benefits following that[1]. Using recycled papers can also lead to cut down the paper consumption and protect the environment [5]. Studies showed that to modify the consumption pattern in Iran, we need to separate the wastes from the source production, establish a recycling factory, educate people to cut down the consumption, use electronic correspondence, educate and enlighten, use electronic boards, cultivate fertile lands to produce sugar cane (bagasse), develop the required industry to change bagasse into paper, and replace sugar cane with wood to produce paper [6]. Health volunteers' program has been extensively executed throughout the country by ministry of health, treatment, and medical training since 1993 [7].

If the current trend of paper consumption in Iran continues, it causes a devastating blow to the environment, economic, and social wellbeing. Furthermore, success of environmental projects and programs is not possible without increasing public awareness, attitude, and performance [8]. Increasing individual's knowledge and attitude about importance of cutting down paper consumption and the subsequent effects of its excessive use on the environment and therefore on people's health, can influence their performance [6]. Health volunteers or health volunteers in urban therapeutic health centers are mostly housewives with the least level of literacy who enjoy proper social acceptability with enough free time who are interested and motivated to take part in social activities. They cover about 50 families from their neighborhood and are a communication bridge between society and related health services [8- 10].

Due to the fact that health volunteers are one of the most important stratums of society in improving the cultural awareness of individuals for saving paper, this study targeted at determining the health volunteers' level of knowledge, attitude, and performance in Yazd in 2015.

Materials and Methods

This descriptive cross-sectional study was conducted on 117 health volunteers in health and therapeutic centers in 2015. To determine the sample size, since there had been no similar study in this field, the formula was initially applied among 30 volunteers, and SD = 2.76 was estimated with d = 0.5 and confidence coefficient of 95 %. Thus, a sample size of 117 was calculated among the total 600 volunteers who enrolled in Yazd health centers.

The data was collected through an author-made questionnaire whose validity and reliability was confirmed. This questionnaire consisted of four parts. The first part dealt with demographic and general questions, the second part addressed respondents' knowledge which included 17 questions with true and false answers with the score range of 0 to 17. The third part consisted of 16 items dealing with participants' attitude in the form of Likert scale. Each question received a score from 1 to 5 and the total score for this section was 13 to 52. The final part of the questionnaire contains 13 questions related to performance questions in which the score for each question was1 to 4 and the total score range was 13 to 52.

The validity of questionnaire was confirmed by a panel of experts (health education and environmental health) and its reliability was confirmed by Cronbach alpha; alpha for the 30 questionnaires was calculated as 0.887 in the pilot study. Finally, after collecting the questionnaires data was imported into the SPSS software and then was analyzed via t-test and ANOVA statistical tests.

Ethical issues

This study was conducted with the approval of Shahid Sadoughi University of Medical Sciences

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Results

The initial estimation showed that among 117 health volunteers, the majority of them (37.6 %) were in the age range of 40-49. Also, 89.7 % of subjects were married, 35.9 % had high school diploma, and the income level of 36.8 % of them was between 1 to 2 million Tomans monthly. (Table 1)

Table1: Frequency distribution of demographic variables among health volunteers

Variable	Situations	Number	Percentage
Age (year)	20-29	10	8.5
	30-39	43	36.8
	40-49	44	37.6
	50-59	20	17.1
Marital status	Married	105	89.7
	Single	12	10.3
Educational background	Elementary	28	23.9
	Ninth grade of high school	35	29.9
	High school diploma	42	35.9
	Academic studies	12	10.3
Income (Tomans)	Less than 500,000	26	22.2
	500,000 to one million	48	41
	One to two million Tomans million	43	36.8

Among health volunteers, 80.3 % were informed about the importance of paper and the necessity of cutting down its consumption; 66.7 % of participants had received this information via radio and television. In order to investigate the most proper method of training, 43.6 % of participants chose "holding classes at health center", while 38.5 % selected radio and television.

In knowledge section, to deal with the question asking "Is it possible to use other materials instead of tree trunks to produce paper?" 79 % of participants got confused. Further, 66 % did not know that how much electricity is consumed for producing one ton of paper. Also, 44 % of participants had positive ideas about the question asking “Is paper consumption optimal in our country?”.

In the section specified to attitude, 53% of participants showed strong desire to cut down paper consumption. 51% believed that cutting down facial tissue use, significantly decreases paper consumption. 33% completely disagreed that increasing the paper price would cut down paper consumption. Also 20 % disagreed with this proposition that keeping daily notes on cell phones does not have a significant influence on reducing paper consumption. (Table 2)

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Table 2: Frequency distribution of questions about attitude

Attitude questions	Completely agree		Agree		No idea		Disagree		Completely disagree	
	Number	percent	Number	percent	Number	percent	Number	percent	Number	percent
1. I have strong desire to cut down paper consumption.	62	53	40	34.2	3	2.6	3	2.6	9	7.7
2. Cutting down paper consumption is an important factor for managing paper waste.	49	41.9	45	38.5	13	11.1	4	3.4	6	5.1
3. Increasing paper price influences cutting down paper consumption.	21	17.9	24	20.5	11	9.4	22	18.8	39	33.3
4. Cutting down paper consumption has no influence on the environmental pollution.	39	33.3	32	27.4	7	6	17	14.5	22	18.8
5. Sending water, electricity, gas, and telephone bills via text message or email to cut down paper consumption is helpful.	48	41	44	37.6	9	7.7	12	10.3	4	3.4
6. Cutting down facial tissues' use helps cutting down paper consumption.	30	25.6	60	51.3	14	12	11	9.4	2	1.7
7. Using email for notifications and advertisements leads to cutting down paper consumption.	35	29.9	57	48.8	11	9.4	6	5.1	8	6.8
8. Reusing waste papers to write on is not much influential on paper consumption.	35	29.9	31	26.5	12	10.3	22	18.8	17	14.5
9. Reading texts on computer and not printing them is necessary for cutting down paper consumption.	24	20.5	53	45.3	25	21.4	7	6	8	6.8
10. Keeping daily notes on cell phone is not much influential on cutting down paper consumption.	32	27.4	37	31.6	11	9.4	24	20.5	13	11.1
11. Paying bills via Internet does not have much influence on cutting down paper consumption.	27	23.1	44	37.6	9	7.7	23	19.7	14	12
12. Using both sides of a paper shit is essential for cutting down paper consumption.	51	43.6	42	35.9	4	3.4	12	10.3	8	6.8
13. Publication of electronic newspapers and weeklies helps cutting down paper consumption.	47	40.2	40	34.2	13	11.1	10	8.5	7	6
14. Prohibiting distribution of advertising papers across the town is essential for cutting down the paper consumption.	45	38.8	46	39.3	12	10.3	6	5.1	8	6.8
15. Games in which no paper is used do not have much influence on paper consumption.	24	20.5	46	39.3	20	17.1	18	15.4	9	7.7
16. Reuse of blank pages of children's notebooks at the end of semester helps cutting down paper consumption.	57	48.7	48	41	4	3.4	4	3.4	4	3.4

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In performance section, more than 73% of volunteers most of the times encouraged their children to cut down paper consumption. 68% of the subjects used the whole surface of a sheet of paper. 14.5% never used electronic ways to read newspaper and magazine. Also, 14.5 % never used the Internet to do their banking operations (Table 2).

As it is shown in table 3, mean and standard deviation of knowledge, attitude, and performance of health volunteers in this study was 11.09 ± 2.90, 59.82 ± 9.33, and 41.11 ± 9.50, respectively. Also, participants received 69.31, 74.77, and 79.05 % of maximum score for knowledge, attitude, and performance (Table 3).

Table 3: Mean and standard deviation of knowledge, attitude and performance variables

Variables	Mean ± SD	Scores range	The percentage of obtained score	Minimum	Maximum
Knowledge	11.09 ± 2.90	0-17	69.31	5	16
Attitude	59.82 ± 9.33	16-80	74.77	39	78
Performance	41.11 ± 9.50	13-52	79.05	13	52

Among the demographic variables under study, there was no significant relation between age variable and knowledge, attitude, and performance of volunteers. The results also showed that the mean scores of knowledge and attitude among those with academic education were more than other participants of this study and this relation was statistically significant ($p \leq 0.001$). The attitude of married people compared to single ones was more positive and there was a significant difference between attitude and income level i.e., the higher the income was, the more positive the attitude became. ($p \leq 0.001$) (Table 4). Also according to the results there was a positive significant relation between knowledge and attitude ($r = 0.558$, $p \leq 0.001$) as well as attitude and performance ($r = 0.234$, $p \leq 0.001$).

Table 4: Distribution of mean and standard deviation of knowledge, attitude, and performance based on demographic variables of health volunteers

Variables		Knowledge	Attitude	Performance
		Mean ± SD	Mean ± SD	Mean ± SD
Age	20-29	10.80 ± 2.65	62 ± 8.41	37.20 ± 5.57
	30-39	10.27 ± 2.48	58.58 ± 9.89	41.69 ± 10.11
	40-49	11.56 ± 2.69	59.34 ± 8.39	39.86 ± 10.60
	50-59	11.95 ± 3.89	62.50 ± 9.83	44.55 ± 5.60
Significant level		0.09	0.37	0.15
Education	Primary school	9.89 ± 2.96	56.75 ± 9.37	36.71 ± 11.10
	Guidance school	10.42 ± 2.70	58.05 ± 10.34	42.37 ± 8.46
	Diploma	11.73 ± 2.71	60.59 ± 6.54	43.33 ± 8.41
	Academic education	13.58 ± 1.97	69.50 ± 7.31	39.91 ± 9.49
Significant level		0.001	0.001	0.026
Marital status	Married	11.20 ± 2.93	60.96 ± 8.69	41.67 ± 9.26
	Single	10.08 ± 2.53	49.91 ± 8.06	36.16 ± 10.59
Significant level		0.20	0.001	0.01
Income	Less than 500 thousand Tomans	9.96 ± 2.72	53.19 ± 7.36	38.34 ± 9.24
	500 thousand to 1 million Tomans	11.64 ± 2.91	61.12 ± 9.29	41.02 ± 10.91
	1 to 2 million Tomans	11.16 ± 2.86	62.39 ± 8.39	42.88 ± 7.58
Significant level		0.056	0.001 ± 0.158	

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Discussion

Cutting down paper consumption both for protecting the environment and its following economic benefits is of great importance [11]. On the other hand, improving people's knowledge and attitude regarding importance of cutting down paper consumption is effective on the environment and public health.

In this study, the mean score of health volunteers' knowledge was 11.9 ± 2.90 explaining that the health volunteers received 69.31 % of maximum score for knowledge. Therefore, it suggests that the participants' level of knowledge was quite satisfactory. Of course, volunteers gave wrong answers to some questions which arise from the lack of knowledge in the field. For example, 66% of subjects did not know how much electricity is used to produce one ton of paper. 53% had no idea how many trees are cut down to produce one ton of pulp (to produce paper) and 54% did not know how much water is used to produce one ton of paper. The important point is that based on the findings, 55% taught paper consumption in our country is optimal while that's not the case. According to Alaienejad et al, the health volunteers' level of Knowledge was moderate [12]. In another study conducted by Mazlumi et al, on health volunteers, the average point of participants' Knowledge was satisfactory [13]. Health volunteers, due to having communication with families as well as social and educational class harmony, can be considered as the most effective education strategy to provide the educational needs and to change society's cultural practices [14]. So, we can say that health mediator's level of Knowledge about people's health in different fields has been reported well in studies. This indicates that trainings provided for health volunteers at different intervals were of good quality. Of course we can make arrangements to transfer health messages of health volunteers more than before. In other words, we need to both improve the communicative skills of health volunteers by planning and taking actions on people training.

The mean score of health volunteers' attitude was 59.82 ± 9.23 which shows that participants received 74.77 % of the maximum score on knowledge and indicates good attitude in cutting down paper consumption. 33% of health volunteers completely disagreed with the proposition saying that increase of paper price would influence its consumption. On the other hand, 53% of participants showed strong desire to cut down paper consumption. 51% believed that cutting down consumption of facial tissue influences paper consumption. Further, positive correlation between mean scores of knowledge and attitude, can be because the health volunteers of this study had enough Knowledge about cutting down paper consumption which led to their positive attitude. The studies on health volunteers, like the one by Grayloo et al,[11] Heshmati et al.[14] and Salehi et al.[10] show that improving mediator's Knowledge in different fields can lead to positive attitude.

The mean score of health volunteers' performance was 41.11 ± 9.50 indicating the fact that subjects obtained 79.05 % of maximum score for knowledge which is a satisfactory and proper level of performance on cutting down paper consumption. Also, more than 73 % of health volunteers encouraged their children to cut down paper consumption which is one of the key points in this field. Moreover, 68 % of participants had always tried to use the whole surface of a sheet of paper. In general, due to the positive correlation between mean scores of knowledge, attitude, and performance of health volunteers, it can be concluded that enough Knowledge on cutting down paper consumption leads to positive attitude, and positive attitude in turn leads to taking appropriate actions in this field. The study of Bayatiet al.[15], and Taghdisi et al. [16] also indicate that increasing Knowledge can lead to better performance of health volunteers.

In the current study, the mean score of knowledge among those with academic education was higher than those of other subjects which support the findings of Ramazani et al.'s findings [17]. Also, different studies considering there relation between the level of Knowledge and attitude with educational background in society showed that by

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improving the educational level of different segments of society, the communication increases among them and as a result the society's knowledge and insight increases [18, 19]. Therefore, due to the fact that only 12 % of subjects had academic studies, choosing health volunteers from the educated people, will lead to better results in improving public level of Knowledge and attitude on paper consumption.

In this project, the attitude of married health volunteers compared to that of single ones was more positive indicating that married health volunteers are more responsible towards the tasks health centers assigned them. Additionally, because married health volunteers are in contact with their spouses and children, the issues regarding paper consumption and its related effects on economic problems and environment destruction were more tangible and real for them and they understood it better. In this study there was a significant difference between attitude and income level; the more income was, the more positive attitude became. It can be said that due to the economic value of cutting down paper consumption, families with higher income cared more about this problem and had a better attitude towards it.

Conclusion

The findings of this study showed that the level of knowledge, attitude and performance of health volunteers in Yazd on cutting down paper consumption is at a satisfactory level. This indicates the fact that trainings given to health volunteers at different time intervals have been well enough. Also, enough and proper Knowledge about cutting down paper consumption led to positive attitude and proper actions among health volunteers. Of course, arrangements can be made to transfer volunteers' health messages to people more than before. To achieve this goal, we need to improve volunteers' communicative and to plan and take action for public education. According to the results, if we choose health volunteers from educated and married people, better results will be achieved with respect to public level of Knowledge and attitude on cutting down paper consumption.

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Conflict of interest

We have no competing interests.

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