



ISSN: 0975-766X
CODEN: IJPTFI
Research Article

Available Online through
www.ijptonline.com

EVALUATION OF THE KNOWLEDGE AND ATTITUDES OF PERSONNEL AND STUDENTS IN PAPER RECYCLING IN KASHAN UNIVERSITY OF MEDICAL SCIENCES

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Received on 06-08-2016

Accepted on 10-09-2016

Abstract

The increase in per capita consumption of paper because paper, cellulose worsening shortages of wood, reducing the cost of raw materials, saving energy, reducing the shedding resources and increased depletion and environmental pollution, As an economic model have been proposed. This study aimed to determine the knowledge; attitudes University of Medical Sciences in the field of paper were recycled. This cross-sectional descriptive and analytical study was carried out. The study population was all students and employees of Medical Education, at least 127 people per group sample were calculated. The tools used contain: demographic data, questions related to knowledge, attitudes, and other questions to investigate the factors affecting the paper added. The majority of the students of knowledge related to doctoral 34.8% among employees with 50% is the same group. A significant association was found between knowledge and school employees or students. By examining attitude to the students and staff of both sexes, women score higher than men on average 13.52 to 13.08 and men with average 14.45 Women score higher than 13.57 was accounted for. Based on the knowledge and attitudes of students and employees and the importance of these two groups as part of the family and community influence, it seems, with emphasis on the importance of education in such matters to their performance and the whole society in this category increased.

Key words: recycling, attitude, student, employee

Introduction

Rapid population growth and increased supplies from sources of progress and development in recent years, leading to an increase in waste is increasing. Expansion of industries, the development of urbanization, the issue of collection, disposal, or use of municipal solid waste is taken for complications. Waste not only produces disease, stench and ugliness are landscapes, but also by polluting soil, water and air brought many damages (1-4). The various surveys show that recycling is the most effective and useful method in Municipal Solid waste Management System (1, 5). In recycling process, the valuable materials in waste are collected, and then used as staple in the production of new products (6, 7). Paper is one of the materials used in the recycling process (8, 9).

In recent decades, based on some reasons, the recycling industry has developed in many countries. Some of the reasons consist of: increase of per capita consumption of paper, increasing shortage of wood and forest cellulosic resources, and need for investment in order to establish new wood and paper companies (10). The first and the most important thing in recycling process is separation of recyclable waste at the place of waste production. Therefore, the great success in recycling process depends on public participation, both people and officials, as well as cultural conditions of society. According to various studies, social awareness and public participation are the most economical methods to prevent environmental destruction (11). In order to reduce the cost of recycled materials and increase the quality of recyclable materials such as paper, officials must raise social awareness and encourage citizenship to separate the solid waste. In addition, public participation is an indispensable element for success of the health program. And without it, there is no guarantee for program implementation (1,12 and 13). In underdeveloped countries despite sufficient technical knowledge due to different reasons, recycling process have some difficulties in economic, health and environment issues (14). In this regard, from early twentieth century paper recycling is taken into consideration in developed countries (15). Approximately 80% of total consumable paper is recyclable (16). In 2009, the paper recycling rate in the world for each person was ten times more than those in Iran. These days more than half of consumable paper is recycled (14). Different studies in Iran show that about 11% of waste is paper (17). If we only recycle 1.4% of paper in the waste, we can achieve 100 tons of recycled paper per year. This process helps to remaining thousands tree per year (18). A research in Kashan shows that paper and boxes consumption in this city is in the third place concerning to City Waste Disposal (19). Compared with paper recycling in other European countries and the US (eg: Atryshba 94.3, 66.8 Netherlands, Germany and Mrykaba 63.4, 45% (recycling paper recycling paper

and cardboard are the pioneers in the field. it is clear that still many ways to travel forward in this area (20).The level of social awareness and attitudes of society about this issue is one of the most important elements that can increase the recycling process especially the paper one (21). Since several studies show that health education can improve people's health awareness and behavior have a significant role (22)Due to the fact that health education has a great role to improvement of social awareness, the evaluation of knowledge and attitudes of students and employees is very important. In addition, the students will be responsible in different places in future, and the employees deal with so many people, they both have a great role to aware the society about this issue. In addition to the above facts, evolution of knowledge and attitudes of society in relation to a specific subject, by questionnaire, is very useful (23-25). The presented survey was carried out among the personnel and students in Kashan University of Medical Science for the purpose of evaluation of the knowledge and attitudes about paper recycling.

Materials and Methods

This cross-sectional descriptive and analytic survey was carried out among all the students and personnel of Medical Education.The student`s statistic were provided by University Department, then the sufficient number of samples for each college, field of study and grade in both sexes was determined by one-stage sampling method and randomly. According to a calculation made in Ilam concerning to awareness and attitudes of society about recycling, the average score of social knowledge was 8.05 ± 1.2 and 2.52 ± 2.3 respectively.Data collection was conducted through a questionnaire. After that, we gave the questionnaire to people and described the design of the survey. When the questionnaire complete by participants, the information will be entered into a statistic program called SSPS. Since there is no standard questionnaire in this area, researchers were trying to find a standard tool for measuring the population through the review of scientific literature by quantitative validity index. In this stage, 6 health experts were received the presented tool. In addition, the changes needed in terms of deleted items were reviewed. The formula used for the CVI was the total number of score multipliers divided by the number of people who scored the related question 3 or 4. The scores above 0.7 had good content validity index and were preserved in the tool. The internal consistency method used to determine the reliability of the tool. The tools used in this survey consist of four parts: demographic information, questions related to awareness, questions related to attitude, as well as other questions for the influencing elements of the recycled paper. Among 312 participants in the survey, there were 74 men (23.7%) and 238 women (76.3%). The frequency of men number in group of students and personnel were 25 (14.6%) and 49 (34.8%), respectively. Among students and personnel the most frequency is related to women (85.4%

and 65.2%). In students group, the most frequency is related to 18-21 –year-old group with 71% and among the personnel 46.7% related to 30-39 year-old group. The frequency according to college is: 3/33% for Department of Medicine among the students, and other groups (The vice Chancellors, The University health Centers) 48.6% among the personnel. These statistics were examined among three grades: undergraduate, MA and Ph.D. In undergraduate, we had the most frequency in groups, 58.2% for students, and 67.7% for personnel. Marital status: in both groups we had 171(57%) single and 129(43%) married. Among the students the most frequency is related to single one (84.8%) and in personnel the most frequency is related to married (76.5%). In terms of parent`s educational level, the most frequency is related to undergraduate group (33.9%). In personnel, older education is related to fathers (61.9%) and the same education in students group (38.5%) and personnel (73.6%) is related to mothers.

Based on income condition, the most frequency in students group is related to those who earn more than 10 million Rials (52.1%) and in personnel between 6 million Rialsto 10 millionRials(43.5%). Based on insurance, in both groups the most frequency is related to Social Security Insurance (57.1% and 70.6%).

Table-1: Distribution frequency of symptoms related to awareness.

Sex Related elements		Student		Personnel		P _{value}
		Percent (number)		Percent (number)		
		-	+	-	+	
Grade	Undergraduate	72.7% 72	27.3% 27	92.9% 91	7.1% 7	0.049
	MA	92% 23	8% 2	76.5% 13	23.5% 4	
	Ph.D	65.2% 30	34.8% 16	50% 3	50% 3	
Sex	male	64% 16	36% 9	83.7% 41	16.3% 8	0.064
	female	75.3% 110	24.7% 36	93.5% 86	6.5% 6	
College	Health	77.1% 27	22.9% 8	87.5% 14	12.5% 2	0.7
	Paramedical	76.7% 33	23.3% 10	91.3% 21	8.7% 2	
	Medical	68.4% 9	31.6% 18	91.7% 11	8.3% 1	
	Nursing	75% 27	25% 9	95.8% 23	4.2% 1	
	others	-	-	85.9% 61	14.1% 10	
Work experience	Under 9-year–old	-	-	80% 36	20% 9	0.011
	19-10	-	-	92.3% 36	7.7% 3	
	29-20	-	-	100% 35	0% 0	

According to table 1, among students the most frequency is related to Ph.D with 34.8% and among the personnel the most one is related to the same grade with 50%. There is a significant relationship between the knowledge condition and personnel and student`s grade. ($P < 0.049$). Based on sex, the most frequency of knowledge in both groups is related to men with 36% in students and 16.3% in personnel. We don`t have a significant relationship between the knowledge condition and personnel and students sex. ($P > 0.064$). It`s observed that in students, the most frequency of knowledge is related to Medicine group with 6/31% and among personnel other groups with 14.1%.

Totally, the student`s knowledge is 22.9% and the knowledge of personnel is 11%. There is no significant relationship between the knowledge condition and occupation or study place of personnel and students ($P > 0.7$). We studied the occupation background of personnel and concluded that the most frequency of knowledge is related to fewer than nine – year- old group with 20%. So we have a significant relationship between the knowledge condition and occupation background of personnel ($P = 0.011$). We compared the 2 groups and concluded that the students (26.3%) are more aware about recycling process than personnel (11%). ($P = 0.001$). By the study of the knowledge grade among students and personnel in both sexes, we can conclude that men with 2.92% and 2.48% have more grade than women with 2.78% ($P = 0.507$) and 2.02% ($P = 0.071$).

Table-2: Distribution frequency of symptoms related to attitude.

Sex Related elements		Student		Personnel		P _{value}
		Percent (number)		Percent (number)		
Attitude		-	+	-	+	
Grade	undergraduate	5.1% 5	94.9% 94	8.2% 8	91.8% 90	0.669
	MA	8% 2	92% 23	11.8% 2	88.2% 15	
	Ph.D	8.7% 4	91.3% 42	16.7% 1	83.3% 5	
Sex	male	20% 5	80% 20	6.3% 3	93.8% 45	Student 0.003
	female	4.1% 6	95.9% 140	7.6% 7	92.4% 85	Personnel 0.767
College	Health	11.4% 4	88.6% 31	13.3% 2	86.7% 13	0.247
	Paramedical	2.3% 1	97.7% 42	17.4% 4	82.6% 19	
	Medical	7% 4	93% 53	8.3% 1	91.7% 11	
	Nursing	5.6% 2	94.4% 34	4.2% 1	95.8% 23	
	others	-	-	4.2% 3	95.8% 68	

Work experience	Under 9-year-old	-	-	15.6% 7	84.4% 38	0.084
	19-10	-	-	2.6% 1	97.4% 38	
	29-20	-	-	5.9% 2	94.1% 32	

According to the table2, we observed that among students and personnel, the most frequency of attitude is related to undergraduate group with 94.9% and 91.8%. We have a significant relationship between the attitude condition and grade of personnel and students ($P>0.669$). In addition, among the students, the most frequency of attitude is related to women with 95.9% and among the personnel is related to men with 93.8%. So there is a significant relationship between the attitude condition and student`s sex ($P=0.003$), but there is not such a relationship between the attitude condition and personnel`s sex ($P=0.767$). The most frequency based on the college is related to paramedical group with 97.7% among students and nursing personnel with 95.8%. So we don`t have a significant relationship between attitude condition and personnel and student`s college ($P>0.247$). We have the most frequency of attitude among the personnel related to 10-19 year-old group with 97.4%. So we did not observe a significant relationship between attitude condition and the occupation background of personnel ($P=0.084$). When we studied the attitude grade of personnel and students in both sexes, we concluded that women (13.52) have more average grade than men (13.08) ($P=0.002$). Moreover, men with 14.45 have more grade than women with 13.57($P=0.02$), respectively. 53.5% of students (85 peoples) and 46.7% of personnel (64peoples) were care about recycling education. In addition, we asked about the place of education of these people. According Figure 1 both groups (students and personnel) believe that television is the best important source for their education in this area (recycling process) ($P=0$).

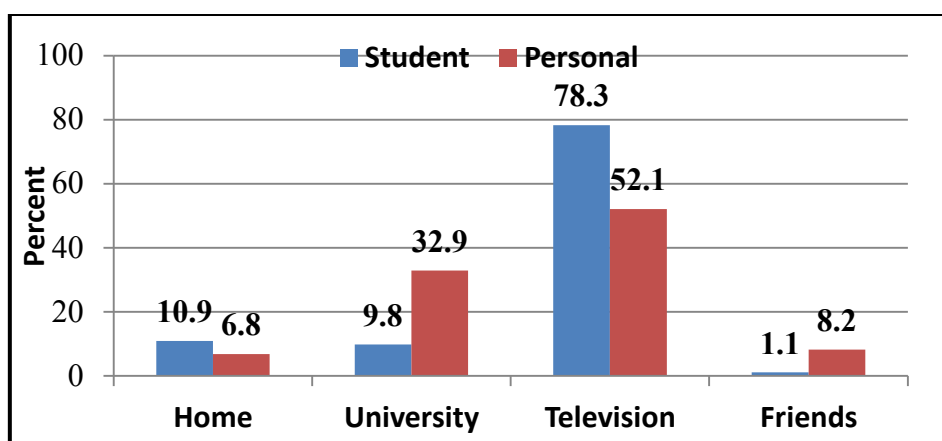


Figure-1. Frequency distribution of educational resources utilization in the two groups of students and staff.

72.2% of students and 89.6% of personnel were interested in learning about recycling ($P=0$). According Figure 2, in students group, "scale elements" ($P=0.033$), "cleanliness" ($P=0.008$) and "the number of waste basket" ($P=0.001$) with "other elements" in personnel ($P=0.033$) have a significant relationship.

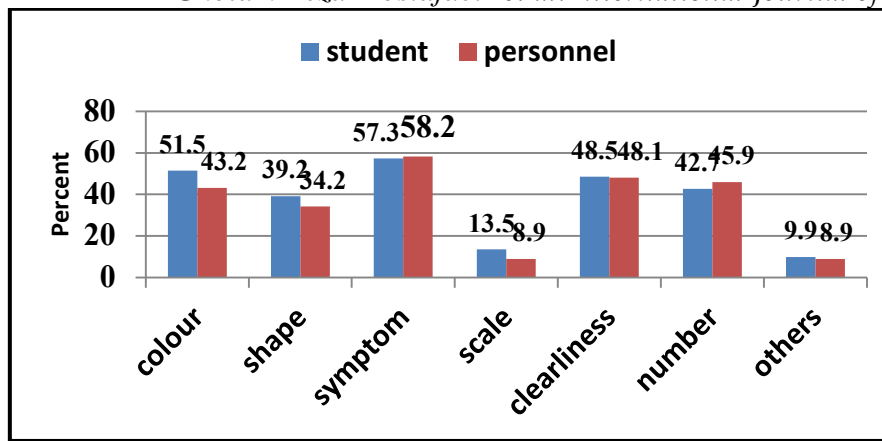


Figure-2. Encouraging factors on the distribution frequency of trash for recycling isolated.

Discussion

Recycling is a way to reduce the amount of waste and the cost of waste disposal. In addition, it is one of the best way to save the natural resources and energy. As far as the amount of recyclable materials is considerable, it is essential to recycle them. Although the education about recycling during these years has not been very effective, but there should be a social education in order to improve the cultural conditions of society. Break up the waste and deliver them on time is all the thing that citizenship should be do. Based on results, the students' knowledge about recycling is not enough, and men`s knowledge were more than women in both groups. A research made by Safdari and assistants shows that girls are more aware of recycling than others (26). In another research made by Bagheri Ardebilian, boys and girls are the same based on their knowledge about recycling process. Based on college, the students of Medicine Department are more aware of recycling than others. In Bagheri Ardebilian`s research, we observed that the students of Health and Paramedical have enough knowledge about recycling. In addition, there is a significant relationship between their courses related to environment and health issues and their knowledge about recycling (27). In Ebrahimi`s research, we evaluated the participant`s attitude and observed that this research is consonant with our presented survey (28). In our presented survey, we concluded that there is a significant relationship between the knowledge and grade ($P < 0.049$). By promotion of undergraduate to Ph.D, the knowledge will be increased. RezaeeMofrad and assistants evaluated the level of knowledge of householders in Kashan about recycling and concluded that there is a significant relationship between the knowledge and the level of education. In another research (29). Ahrampoush and assistants evaluated the level of knowledge, attitude and function of people in Jarghouye (a city in Isfahan) and announced that there is a significant relationship between social knowledge and the level of education (30).Based on results, we concluded that about 78.3% of students and 52.1% of personnel have gotten their knowledge about recycling from television and radio. In addition, Ardebilian concluded the same results

(27). In Kashan, 38.7% of people have gotten their knowledge about recycling from television and radio, and 26% of them from the relevant organs of municipality through pamphlets that people have (31).

Conclusion

In order to gain success in recycling process, an educational program should be used by public media to raise the social awareness and public participation. The students have a great role to increase social awareness in this area. Many students believe that if they have related courses in their syllabus, it will be a very effective way to get information about the importance of recycling process.

Acknowledgment

The authors acknowledge all financial supports provided by Kashan University of Medical Sciences. The authors declare that there is no conflict of interest.

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