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Assessment of Special Needs People Towards Environmental Awareness in the Hashemite Kingdom of Jordan

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Abstract: Problem statement: This research examines knowledge and attitudes towards environmental awareness among special needs individuals in the Hashemite Kingdom of Jordan. The population census of (136) special needs individuals with different types of disabilities; physical impairments, visual impairments and hearing impairments from different locations of the Hashemite Kingdom of Jordan participated in the survey and completed the questionnaire in 2010. The targeted population encompassed Jordanian special needs citizens with different backgrounds including; age, location of residency, gender, social status and education levels. The questionnaire consisted of (27) questions concerning major environmental issues. **Approach:** Analysis of Variance was conducted on the means of the sample population determined by gender, age, education and geographic distribution to verify that the apparent differences of the means were statistically significant. The environmental awareness among special needs females in all locations exceeded the total awareness of special needs males. **Results:** The Statistical Package for Social Sciences conducted on the sample revealed that special needs people in cities have better environmental awareness in comparison to the special needs people who live in villages and rural areas. **Conclusions:** The education level played a significant role in the degree of environmental awareness in all locations surveyed. Environmental awareness was directly affected by the type of disability; people with physical impairments had a better environmental awareness than individuals with hearing and vision disabilities as the percentage of environmental awareness reached (65%, 55% and 46%) respectively.

Key words: Disabilities, solid waste, analysis of variance, air pollution, statistical package for social sciences, world health organization, welfare of disabled persons act

INTRODUCTION

Environment can be defined as the combination of living things which are closely related to the elements of nature such as human, animal, as well as plants. (Hassan *et al*., 2009; Said *et al*., 2010) indicated that public awareness through educational programs is very important and an essential step toward sustainable developments. Many researchers worldwide studied the levels of environmental awareness among different groups of people in different countries (Staniskis and Stasiskiene, 2006; Lumley and Armstrong, 2004; Hongyan, 2003; Rose and Bridgewater, 2003; Herremans and Reid, 2002; Daudi, 2008; Said *et al*., 2010). It is important for developing countries to look to the future in order to design education and training programs to address the challenges of environmental problems their societies will be facing in the coming decades (Ziadat, 2009). Environmental awareness program planners and educators are obligated to acknowledge and utilize strategies for comprehensive program developments where all groups of society are granted an equal opportunity to convey their opinions. Obstacles recognized through such a process are negotiated and discussed in order to come with a final agreed decision by all groups of the society involved (Daudi, 2008). It has been concluded by researchers that environmental education towards awareness, environmental protection and conservation involve appropriate levels of knowledge and understanding leading to direct change of behaviors and practical implementation of such concepts by each individual in the society as a whole (Staniskis and Stasiskiene, 2006).

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Evaluation of environmental awareness helps professionals and educators understand and quantify how best to respond to the needs to educate different groups including people with special needs about environmental issues. Agreement and discrepancy in knowledge, views and actions that embrace the environmental attitudes of different groups of people with different levels of education, age groupings, social levels, professions, locations of residency and gender play a significant role in environmental awareness of individuals throughout the global society (Ziadat, 2009). Social justice and equity for all citizens is the basic obligation of human rights and a major concern for all groups of people in a society. This has become more critical for implementation to distinguished social groups such as people with special needs. Equalizing human rights and opportunities for all members of a given society symbolize the foundation of the rights-based process to social advancements. At the practical level, this procedure translates the necessities to design policies and to facilitate the availability, accessibility, adaptability and acceptability of different social services such as; health, education, employment, social protection and environmental awareness for all citizens particularly members of distinctive groups including special needs people (United Nations, 2009). In general, special needs people function in different ways than the majority of normal people in a society as more attention and support is essential. It is the responsibility of the society as a whole and policymakers in particular to integrate them as a solid part of the society. It is recognized worldwide that special needs groups are subject to high levels of discrimination which is generated from both social stigma and institutional structures, as they have become more deprived from the simplest human right issues, especially in developing countries. People with disability face greatly higher levels of unemployment and considerably lower levels of education they experience social seclusion and generally they are among the poorest and most disadvantaged social groups. A strong correlation usually exists between the types and the level of disabilities and discrimination. Disability can be defined as "an umbrella term, covering impairments, activity limitations and participation restrictions. An impairment; is a problem in body function or structure; an activity limitation is a difficulty encountered by an individual in executing a task or action. Thus disability is a complex phenomenon, reflecting an interaction between features of a person's body and features of the society in which he or she lives." (OHCHR and the World Health Organization, 2008).

It is required that every student's needs and accommodations are met in an academic setting. The education and accommodation of students with disabling conditions has become a major concern in all subjects taught in classrooms. Teachers and school administrators must be aware of student diversity and be committed to inclusion and providing a quality education for every student in the classroom. Such commitment may require supplemental aids and practices to meet the needs of special education students in the general education classroom.

The authors believe that people with special needs should be educated regarding environmental issues as they are part of the whole society. Evaluation of environmental awareness is the initial step to determine the levels of knowledge among different groups of people regarding the significance of environmental problems and how they respond to or interact with the environment. As a result, this research is an important step towards assessing the environmental awareness among special needs people in the country of Jordan, in order to enhance educational programs in environmental awareness to be directed to educate special needs groups at different levels.

Study area: The Hashemite Kingdom of Jordan is located in the center of the Middle East with a total territory of 60,000 square miles. It is south of Syria, southwest of Iraq, northwest of Saudi Arabia and east of the occupied West Bank. Jordan is an independent Arab country, Amman being the capital. The population of Jordan was estimated in 2004 to be 5.4 million inhabitants composed of 2.8 million males and 2.6 million females (Department of Statistics, 2004). The country of Jordan provides a representative model of the diversity of people with special needs. The World Bank, estimates that there are between 196,000 (lowest estimate) and 524,000 (highest estimate) individuals with disabilities in the Hashemite Kingdom of Jordan (United Nations, 2009). Using an international average, the World Health Organization (WHO) estimates disability to affect 7% of total population. Standards and policies have been developed at the international and regional levels with the aim to protect the constitutional rights of individuals with special needs. Jordan attended and has indorsed three major documents from international conferences concerning persons with disabilities.

Firstly, United Nations Convention on the Rights of Persons with Disabilities and its Optional Protocol which focused on the basic rights and essential freedoms of individuals with disabilities. Secondly, the International Labor Organization Vocational

Rehabilitation and Employment (Disabled Persons) Convention. This convention focused on ensuring appropriate occupational rehabilitation to all groups of persons with disabilities. Thirdly, the Arab Agreement on the Rehabilitation and Employment of the Disabled; which stressed on planned integration of persons with disabilities in societies through securing access to the workforce. In Jordan, the first law for persons with disabilities was adopted in 1989 and replaced by the Welfare of Disabled Persons Act No. 12 in 1993. A committee of experts in the field of disabilities was established and headed by his hinnies Prince Zeid bin Raad of Jordan to review and analyze the Welfare of Disabled Persons Act (WDPA) and its amendments in the light of the provisions of the international Convention on the Rights of Persons with Disabilities in 2006 (United Nations, 2009).

In 2010, laws and regulations in the Hashemite Kingdom of Jordan can be described as comprehensive in that it addresses the rights and services for persons with disabilities including non-discrimination on the basis of disability, their right to equal opportunities and their right to participate in decision-making relating to their affairs. The government of Jordan facilitates health care, education, job training, social protection and institutional care for Jordanian citizens with special needs. Different researches provided statistical figures regarding the educational level of persons with disabilities in the country of Jordan as it is significantly lower than the national average. In comparison to the Jordanian national illiteracy rate of 9.3%, persons with disabilities in Jordan reached 30.5%. The illiteracy rate for women with disabilities is the most disturbing figure, at 49.0% of the female population with disabilities. This is significantly higher than the level of illiteracy rates among the national population, at 9.3% and among men with disabilities, at 22.7%. In addition, 37.5% of individuals with disabilities are limited to elementary education, as opposed to 30.6% of the general Jordanian population. Regarding secondary education, a modest 11.8% are enrolled in secondary education, compared to 23.7% of the national population. According to these statistics, in percentage terms women account for 53.8% of all illiterate persons with disabilities, while they represent only 37.9% of the total population with disabilities. In general it is worth mentioning that women are underrepresented among persons with disabilities, they are overrepresented among illiterate persons with disabilities (United Nations, 2009; Fook and Sidhu, 2010).

MATERIALS AND METHODS

The objective of this research was to evaluate the level of environmental awareness among special needs individuals in the Hashemite Kingdom of Jordan. One hundred and thirty-six special needs individuals from different locations in the Hashemite Kingdom of Jordan participated in the survey and completed the questionnaire in the spring of 2010. The population census of special needs individuals with different types of disabilities such as; physical impairments, blind-or visually-impairments and hearing impairments from different backgrounds including; location of residency, age, gender, social status and education levels. The questionnaire consisted of twenty seven questions concerning major environmental issues. The questions were in the form of limited multiple choice answers with even points to each question in every category. The questionnaire had four general environment grouped questions formulated to measure the basic environmental knowledge of special needs individuals along with the questions in the specific areas of water resources, solid waste, air pollution and noise pollution. Questions covered the meaning of the environment, which is responsible for protecting the environment and the major causes of environmental pollution by asking questions as follows:

- The participant's awareness and the degree of concern about national and global environmental problems
- If smoking is an environmental problem as it is a health problem
- Sources of water pollution and its impact on human health
- The degree of compliance to separate solid waste at home in different bags.
- The willingness to read instructions on products specially chemicals used at home.
- The individual's responsiveness to water conservation at home as well as at work
- Major sources of air pollution
- The consciousness of the danger of smoking inside residential houses and public places

The questionnaire was evaluated by professionals including sign language specialists for its content, clarity of language and appropriateness of length prior to conducting the study survey using an initial draft form. Twenty five special needs individuals with different disabilities and different backgrounds including; gender, education levels and age, were chosen for the draft evaluation. The pre-tested sample

was excluded from the actual survey. The questionnaire was subsequently evaluated based on the pre-test and revised to its final format. A Cronbach's alpha coefficient was calculated for the questionnaire measuring the special needs confidence levels of environmental awareness as the reliability coefficient of 0.84 was generated from the analyses. This is a reliable result as it exceeds 0.60 (George and Mallery, 2003). Participants were chosen randomly by the authors from different locations in Jordan. The authors distributed the questionnaire personally and collected them for evaluation. The points were summed and converted into percentages to determine an overall index of environmental awareness along with an index for each of the specific topic areas for each individual. Data were collected in a secured Microsoft Access database, special records were arranged presenting the progress of work in all surveyed areas. The editing process focused on the completeness and consistency of data in order to minimize any data entry errors. Data were analyzed using the Statistical Package for the Social Sciences (SPSS) Version 12 to link the environmental awareness among special needs people to their education levels, location of residency, gender and age. Descriptive statistics were used to report the results, as mean scores for the confidence levels were calculated. Analysis Of Variance (ANOVA) was conducted on the means of the sample sets determined by age, gender, education level and location of residency to determine if the apparent differences in the means of the datasets were statistically significant at a level of $\alpha = 0.05$. Analyses were conducted on different parameters such as the correct responses to questions concerning current issues of general environmental problems, water resources, solid waste, air pollution and noise pollution. The final respondent sample of special needs individuals consisted of 43.38% males and 58.82% females. The age range varied from 18-48 years. A total of 40.4% of the respondents were in the age range of 18-25 years, 16.9% in the range of 26-30 years, 18.4% in the range of 31-37 years and 7.4% in the range of 38-48 years. The education levels of the respondents were 11.1% elementary school level, 27.9% high school diploma, 24.3% college level students and 36.7% were people with a university first degree or higher.

RESULTS

The total environmental awareness among special needs citizens varied depending on the location of residence as shown in Fig. 1. The total environmental awareness in cities was higher than in villages and rural areas, as it reached 57, 52 and 51% respectively.

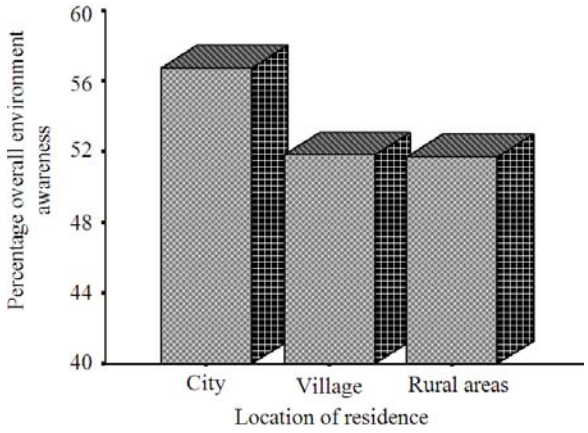

Fig. 1: Percentage of environmental awareness among special needs individuals according to the demographical location in the Hashemite Kingdom of Jordan

This is in complete agreement with the results obtained by different researchers (Ziadat, 2009; Rose and Bridgewater, 2003; Hongyan, 2003) who indicated that people living in cities have better environmental awareness than people living in other location.

The majority of special needs attend specialized schools which determine their daily life experiences with common similarities of programs and performance. The overall index of environmental awareness among special needs individuals, as it was measured according to the education background, ranged between 45.2 and 64.4%. It is worth mentioning that special needs individuals with an education higher than elementary and high school (college and university levels) had better scores in environmental awareness as they have similar opinions and minimum variation in responses to the questionnaire (64.1 and 64.4%) as shown in Fig. 2. This is in strong support of the results published by different researchers (Hassan *et al*., 2009; Liu and Kaplan, 2006; Ismail *et al*., 2010) as higher educational level plays a significant rule in better environmental awareness.

The calculated means of environmental awareness of special needs individuals with an education of elementary and secondary school levels showed modest percentages of (45.2 and 46.3%) with minor differences indicating that such groups and their families are more interested in providing the basic schooling and improving basic life skills for their daily needs as the environmental awareness at that stage is not a direct necessity or importance in their lives. This also can also be attributed to the schooling curriculum which does not include any educational material concerning environmental issues.

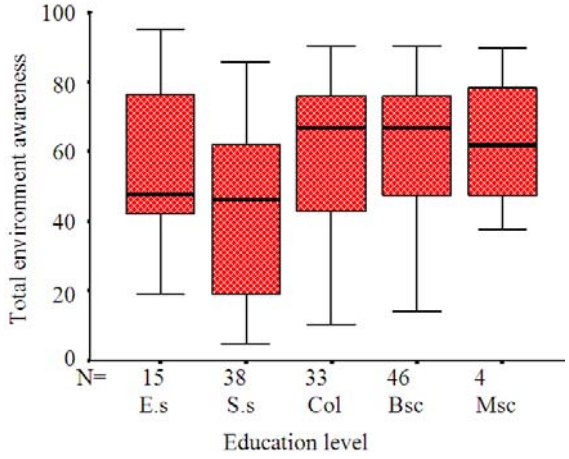

Fig. 2: Environmental awareness among special needs individuals versus educational levels in the Hashemite Kingdom of Jordan

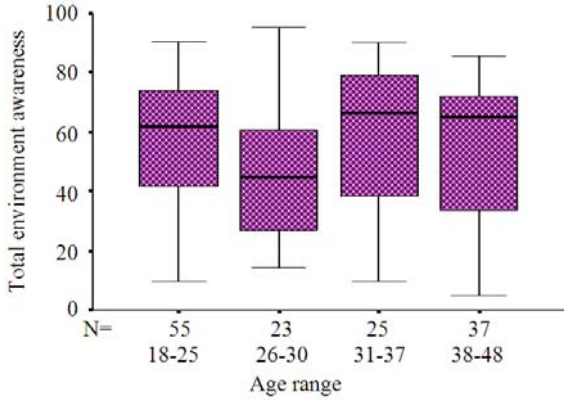

Fig. 3: Environmental awareness among special needs individuals versus age range in the Hashemite Kingdom of Jordan

Responses to the questionnaire indicated that environmental awareness among special needs individuals is also affected by the difference in the age range: older age correlated positively with higher overall index of environmental awareness as it reached 65.0% and with less variation in opinions over most of the common facts presented in the questionnaire, as shown in Fig. 3.

Usually older people have more experience with life as they observed and interacted with more environmental issues in comparison to younger individuals in a society leading to better environmental awareness among the older groups. This result is in complete agreement with (Harris, 2006; Staniskis and Stasiskiene, 2006; Madruga and da Silveira, 2003; Nasiri and Deng, 2009).

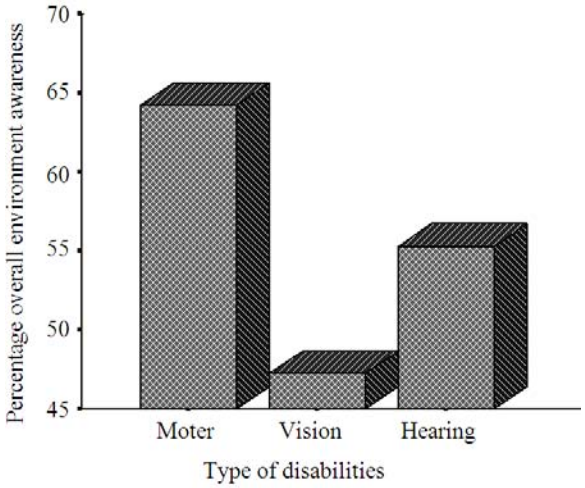

Fig. 4: Percentage of environmental awareness according to the type of disabilities (Motor, Vision and Hearing disabilities) among special needs individuals in the Hashemite Kingdom of Jordan

Table 1: P values from ANOVA Analysis at α = 0.05

Categories	Location of residency	Age	Gender	Education level
Environment	0.0140	0.0322	0.064	0.013
Solid waste	0.0319	0.0417	0.001	0.025
Air pollution	0.0346	0.0115	0.154	0.062

Not significant at α = 0.05

The results of the Analysis of Variance (ANOVA) was conducted on the means of the sample sets determined by age, gender, education level and demographical location of residency to determine if the apparent differences in the means of the datasets were statistically significant at a level of α = 0.05. The P values from the ANOVA analysis are presented in Table 1. Differences in the means of the population surveyed based on age, locations of residency and education levels were found to be statistically significant for all questions, as shown in Table 1.

Further statistical analysis was generated in order to evaluate the environmental awareness according to the type of disabilities such as; Motor, Vision and Hearing disabilities among special needs individuals in the Hashemite Kingdom of Jordan. It is clear from Fig. 4 that people with motor disability have better environmental awareness than special needs people with hearing and vision disabilities. This is attributed to the fact that people with motor disability are more aware of environmental complications in comparison to individuals with hearing disabilities. Individuals with hearing disabilities showed better awareness than

people with vision disabilities as they are capable of communicating and expressing opinions by the use of sign language as it is the main way of communicating with the society as whole with limited vocabulary. Environmental awareness among individuals with vision disabilities earned the lowest percentage as it reached 46.2% as shown in Fig. 4. In general, people with vision disabilities are in the need of more assistance in day to day life.

Three different components of the environment (solid waste, air pollution and general environment issues) were evaluated among special needs individuals according to the location of residency as shown in Fig. 5. Awareness of air pollution reached the highest percentages in all demographical locations indicating that all special needs individuals despite the type of disabilities use the sense of smelling and the function of breathing which helps in comprehending any air pollution evident in the surrounding environment. On the other hand, the percentage of solid waste awareness in rural areas reached 48%.

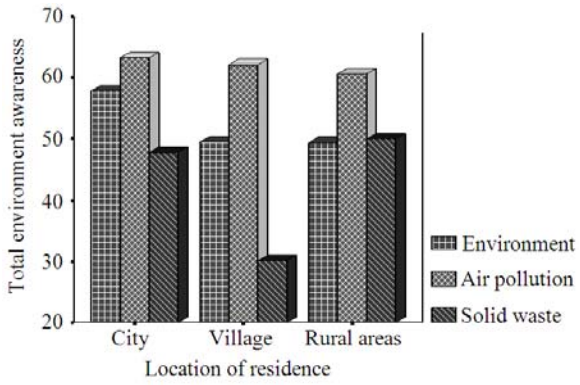

Fig. 5: Percentage of environmental awareness among special needs people according to different components of the environment versus the demographical location of residency in the Hashemite Kingdom of Jordan

Table 2: Means (M) and Standard Deviations (SD) for different components of the environment (General environment, Solid waste and Air pollution) among special needs in the Hashemite Kingdom of Jordan

Categories	Gender	Number of Samples	Mean	Std. deviation
General	Male	53	12.69	7.07
Environment	Female	80	14.90	6.73
Solid waste	Male	53	2.20	1.68
	Female	80	3.37	2.21
Air pollution	Male	53	4.71	2.28
	Female	80	5.25	2.12

This is a relatively high percentage in comparison to other demographical locations. This is attributed to the enforced regulations and strict standards by the government to protect ancient ruins that are commonly located in the rural areas in the country of Jordan.

Standard Deviations (SD) and Means (M) for different components of the environment (General environment, Solid waste and Air pollution) among special needs individuals were calculated. It is worth mentioning that females maintained better environmental awareness than males in all analyzed environmental components of the questionnaire as they reached M = 14.90, SD = 6.73 for the general environment questions, M = 3.37, SD = 2.21 for the solid waste questions and M = 5.25, SD = 2.12 for air pollution as shown in Table 2.

DISCUSSION

This research showed that the total environmental awareness among special needs citizens in the Hashemite Kingdom of Jordan have a modest understanding of national environmental issues.

Variation in environmental awareness can be contributed to the fact that a variety of different environmental complications are present and more evident in cities such as air pollution and solid waste management, in comparison to villages and rural areas where such environmental complications are minimal. Despite the different percentages of environmental awareness obtained, it is clear that such percentages didn't vary significantly according to the demographical locations. This is due to the fact that in the country of Jordan, special needs individuals experience common circumstances with similar psychological and social issues.

It can be concluded from this research that special needs individuals in the country of Jordan who attended colleges and universities had a better chance to integrate into the normal society including classrooms full of normal students. The enrollment of special needs individuals at colleges and universities strengthened their capabilities to learn new concepts and principles including new statements and phrases to discuss different subjects including environmental issues and its complications. This enhanced their understanding of environmental awareness among other topics

CONCLUSION

Laws and regulations in the Hashemite Kingdom of Jordan can be described as comprehensive in that it addresses the rights and services for persons with

disabilities including non-discrimination on the basis of disability, their right to equal opportunities and their right to participate in decision-making relating to their affairs. The government of Jordan facilitates health care, education, job training, social protection and institutional care for Jordanian citizens with special needs.

The results of this research showed that the total environmental awareness among special needs citizens in the Hashemite Kingdom of Jordan have a modest understanding of national environmental issues. This is due to the fact that their families are more interested in providing the basic schooling and improving basic life skills for their daily needs as the environmental awareness is not a direct necessity or importance in their lives.

The following can be concluded from this research:

- The total environmental awareness among special needs citizens varied depending on the location of residence. The total environmental awareness in cities was higher than in villages and rural areas
- It is worth mentioning that special needs individuals with an education higher than elementary and high school (college and university levels) had better environmental awareness
- Environmental awareness among special needs individuals is affected by the difference in the age range: older age correlated positively with higher overall index of environmental awareness
- People with motor disability have better environmental awareness than special needs people with hearing and vision disabilities
- Individuals with hearing disabilities showed better awareness than people with vision disabilities as they are capable of communicating and expressing opinions by the use of sign language as it is the main way of communicating with the society as whole
- Three different components of the environment (solid waste, air pollution and general environment issues) were evaluated among special needs individuals according to the location of residency. Awareness of air pollution reached the highest percentages in all demographical locations indicating that all special needs individuals despite the type of disabilities use the sense of smelling and the function of breathing which helps in comprehending any air pollution evident in the surrounding environment
- Solid waste awareness among special needs individuals in rural areas was relatively high percentage in comparison to other demographical locations. This is attributed to the enforced regulations and strict standards by the government to protect ancient ruins that are commonly located in the rural areas in the country of Jordan

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