Data Article

A study of staff's awareness and attitudes towards the importance of household hazardous wastes (HHW) management (A Case Study of Kermanshah University of Medical Sciences, Kermanshah, Iran)

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Abstract

The present study aimed to assess the levels of staff’s awareness and attitudes towards the importance of household hazardous wastes (HHW) management at Kermanshah University of Medical Sciences (KUMS), Kermanshah, Iran. The awareness and attitudes were measured using a researcher-made questionnaire, which was then completed by 200 personnel at KUMS with different responsibilities. Finally, the data were then analyzed using the SPSS Statistical Software Version 21.0. The results of the present study showed that the average of awareness for man and woman was obtained 19.59 ± 3.53 and 19.88 ± 3.33, respectively. While, the attitude for them was 58.66 ± 9.5 and 61.25 ± 9.8, respectively. In terms of variable “job type”, the highest score about awareness and attitude was related to physician (20.45 ± 2.41) and...
nurse (61.8 ± 9.2) jobs respectively. The highest level of awareness was for those with a diploma degree, while in term of attitude the maximum score was obtained for those who were undergraduate and bachelor degree. Based on age group, minimum and maximum score of awareness were related to 44–53 and 44–53 years, respectively. While in term of attitude were 54–65 and 34–43 years, respectively. According to results, it is suggested that households be trained in separating, recycling, collecting, transporting and disposing of HHWs in accordance with health standards with the aim of providing, maintaining and improving the health of families, societies and environment. It should be noted that prevention of adverse environmental effects of hazardous waste is a priority, which can be realized through applying proper management methods.

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### Specifications Table

| Subject Area              | Environmental Sciences  |
|--------------------------|-------------------------|
| More specific subject area | Environmental Health    |
| Type of Data             | Tables                  |
| Data Collection Method   | To conduct the present, a researcher-made questionnaire was first designed to measure the level of awareness and attitude of 200 staff at Kermanshah University of Medical Sciences (KUMS) with different responsibilities about HHWs. Further, the data were then analyzed using the SPSS Statistical Software Version 21.0. |
| Data Format              | Raw, analyzed           |
| Experimental factors     | The validity and reliability of the questionnaire were evaluated using content validity and Cronbach’s alpha. |
| Experimental Features    | To compare the means of two groups of variables and more, the independent sample t-test and ANOVA were used respectively. |
| Location of Data Source  | Kermanshah City, Iran   |
| Data Accessibility       | Data were included in this article |

### Value of the data

- HHWs account for only 1% of the total municipal solid waste. However, this low level can still pose many risks to the environment and human health [1–4]. Moreover, the data from the present study is about evaluating the awareness and attitudes of people towards the above-mentioned risks.
- Limited studies have been conducted on the subject under discussion. Therefore, the data from present study can serve as the basis for future studies. In addition, due to the lack of previous studies in this respect, the obtained data is useful for understanding the status of awareness and attitudes of people about HHWs.
- The management style of HHWs produced in its primary location (personal home) can be affected by the final treatment of domestic wastewater and the final disposal of municipal solid waste [5–12]. Therefore, it is very important to measure and promote the awareness and attitudes of people about HHWs.
- The data from the present study can serve as a basis for future studies about HHWs in Iran, especially in the area under study, i.e., Kermanshah.
1. Data

According to the demographic data of the subjects under study, men accounted for slightly above half of the sample population (51% or 102 subjects), and the rest were women (49% or 89 subjects). Moreover, the married subjects made up about 61.5% (123 subjects) of the sample population, whereas the rest were single (38.5% or 77 subjects). Besides, 57% (11 subjects) were living in bungalows, and the rest were in apartments (42.5% or 85 subjects) (Table 1). The results revealed that the awareness of the subjects under study was high in terms of two components, and very high in terms of two other components (Table 2). As for the attitude of subjects under study, the results indicated that it was high in terms of two components, and very high in terms of three other components (Table 3). Additionally, there were significant differences between the mean scores of awareness of

### Table 1
The demographic data of the subjects under study.

| Variables                      | Frequency |
|--------------------------------|-----------|
|                                | Number    | Percent |
| Sex                            |           |         |
| Man                            | 102       | 51      |
| Woman                         | 98        | 49      |
| Type of residential home      |           |         |
| Villa’s house                  | 115       | 57.5    |
| Apartment house                | 85        | 42.5    |
| Marital status                 |           |         |
| Married                       | 123       | 61.5    |
| Single                        | 77        | 38.5    |
| Job                            |           |         |
| University faculty member     | 51        | 25.5    |
| Physician                     | 49        | 24.5    |
| Nurse                         | 49        | 24.5    |
| Administrative officer         | 51        | 25.5    |
| Education level               |           |         |
| Elementary and middle school  | 10        | 5       |
| Diploma                       | 20        | 10      |
| Undergraduate and Bachelor     | 75        | 37.5    |
| MA and Ph.D.                  | 95        | 47.5    |
| Age group (years)             |           |         |
| 23–33                         | 81        | 40.5    |
| 34–43                         | 63        | 31.5    |
| 44–53                         | 46        | 23      |
| 54–65                         | 10        | 5       |
| Total                         | 200       | 100     |

### Table 2
The scores obtained by the subjects on awareness based on sub-goals and likert scale.

| Special goals                                                                 | Acquired scores (Max) | Knowledge level |
|-------------------------------------------------------------------------------|------------------------|-----------------|
| 1. Awareness of various hazardous household waste materials and their properties | 4.08(5)                | Very good       |
| 2. Awareness of the health and environmental effects of hazardous household waste | 6.39(8)                | Good            |
| 3. Awareness of the adverse effects of hazardous waste management on the proper management of normal household waste | 5.16(7)                | Good            |
| 4. Awareness of the proper management (collection, processing and disposal) of hazardous household waste | 4.09(5)                | Very good       |
subjects in terms of marital status, job, and age group \( P < 0.05 \) whereas no significant difference was observed for other variables \( P > 0.05 \). Furthermore, there were significant differences between the mean scores of attitudes of subjects in terms of gender, type of residence and academic degree \( P < 0.05 \) whereas no significant difference was observed for other variables \( P > 0.05 \) (Table 4).

### 2. Study Design, Materials and Methods

To carry out the present experimental study, a researcher-made questionnaire was first designed to measure the level of awareness and attitudes of 200 staff at Kermanshah University of Medical
Table 5
The rankings of awareness levels for each of the specific goals based on the likert scale.

| Special goals                                                                 | Maximum score | Knowledge level |
|------------------------------------------------------------------------------|---------------|-----------------|
| 1. Awareness of various hazardous household waste materials and their properties | 5             | 0–1.25          |
| 2. Awareness of the health and environmental effects of hazardous household waste | 8             | 0–2             |
| 3. Awareness of the adverse effects of hazardous waste management on the proper management of normal household waste | 7             | 0–1.75          |
| 4. Awareness of the proper management (collection, processing and disposal) of hazardous household waste | 5             | 0–1.25          |
| **Overall knowledge**                                                        | **25**        | **0–6.25**      |
Table 6
The rankings of attitude levels for each of the specific goals based on the likert scale.

| Special goals                                                                 | Maximum score | Attitude level |
|------------------------------------------------------------------------------|---------------|----------------|
|                                                                              |               | Very good      | Medium | Good | Very good |
| 1. The importance of considering hazardous household waste materials and their properties | 9             | 0–2.25         | 2.25–4.5 | 4.5–6.75 | 6.75–9     |
| 2. The importance of the health and environmental effects of hazardous household waste | 24            | 0–6            | 6–12   | 12–18 | 18–24      |
| 3. The importance of the adverse effects of hazardous waste management on the proper management of normal household waste | 15            | 0–375          | 3.75–7.5 | 7.5–11.25 | 11.25–15   |
| 4. The importance of the proper management (collection, processing and disposal) of hazardous household waste | 18            | 0–4.5          | 4.5–9   | 9–13.5 | 13.5–18    |
| 5. The importance of media training in the management of household hazardous wastes | 9             | 0–2.25         | 2.25–4.5 | 4.5–6.75 | 6.75–9     |
| **Overall attitude**                                                          | 75            | 0–18.75        | 18.75–37.5 | 37.5–56.25 | 56.25–75   |
Sciences (KUMS) with different responsibilities about HHWs. To this end, the basic principles of municipal solid waste and HHWs were reviewed in books and articles [7–9]. The meaning of "waste" in the phrase "hazardous household waste" is both hazardous liquid waste and hazardous solid waste.

The validity of the questionnaire was evaluated using content validity. To do so, the intended questionnaire was given to 10 faculty members of the Faculty of Health of KUMS and 10 employees at the environmental health centers of Kermanshah to be examined based on the objectives of the study and the questions relating to attitude and awareness. Furthermore, the reliability of the questionnaire was evaluated using Cronbach’s alpha (α=0.87) [13–15]. To conduct the present study, 200 subjects were selected as the final sample, who were extracted from a statistical population of 2500 people using the Morgan Sample Size Table and previous studies. In addition, according to the share of each group (cluster sampling), 40 physicians and specialists who were not faculty members, 56 faculty members, 44 nurses and 60 administrative staff were selected randomly by simple random sampling method.

Given that each subsidiary target group was covered by various questions of the questionnaire, the Likert range of each target group was different in terms of score (Tables 5 and 6). After filling out the awareness and attitude questionnaires, the obtained results were transferred to the SPSS Statistical Software Version 21.0. Moreover, to compare the means of two groups of variables and more, the independent sample t-test and ANOVA were used respectively. Finally, the descriptive parameters were presented using the descriptive statistics.

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Transparency document. Supporting information

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