Data Article

Dataset on the knowledge, attitude, and practices of biomedical waste management among Tehran hospital's healthcare personnel

Mohammad Hadi Dehghani a,b,*, Massuomeh Rahmatinia a,c

a Department of Environmental Health Engineering, School of Public Health, Tehran University of Medical Sciences, Tehran, Iran
b Institute for Environmental research, Center for Solid Waste Research, Tehran University of Medical Sciences, Tehran, Iran
c Department of Environmental Health Engineering, School of Public Health, Iran University of Medical Sciences, Tehran, Iran

Abstract

The data of this research was the investigation of knowledge, attitude and practices of biomedical waste management among healthcare staff and performed in some general hospitals in Tehran, Iran. In this descriptive data, 162 participants were chosen according to stratified sampling method and a self-made questionnaire was used for data collection. Also, Kruskal-wallis test, Mann-Whitney U tests and Spearman correlation coefficient were used to analyze the data in R software, version 3.4.4. The weighted mean of data showed that the knowledge level in staff is “Low” and their activity level is “Moderate”. Also, the data of the statistical analysis revealed that there is no significant difference between male and female health care personnel in knowledge, attitude and practices. However, the results of Kruskal-Wallis test showed that there was no significant difference between the views of hospital staff in occupational and educational groups about knowledge and attitude and their relationship with the history of passing the health course, while the difference in practices level
was significant \( (P < 0.0001) \). Furthermore, the relation between attitude and practices level of participants with different work experience were not significant.

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### Specifications Table

| Subject area       | Environmental Health Science                          |
|--------------------|-------------------------------------------------------|
| More specific subject area | Waste Management                                      |
| Type of data       | Table                                                 |
| How data was acquired | Data were collected by questionnaire                  |
| Data format        | Raw, Analyzed                                         |
| Experimental factors | The factors mentioned in the abstract were evaluated according to the completed questionnaires. |
| Experimental features | The researcher-made questionnaire, which contained data on Knowledge, Attitude, and Practices of Biomedical waste management among Healthcare Personnel were completed |
| Data source location | Tehran hospitals, Iran                                |
| Data accessibility | The data are available with this article              |

### Value of the data

- The data showed a statistically significant positive relationship between Knowledge and years of service.
- The data is useful in showing that staff training is one of the fundamental ingredients in the field of proper management of biomedical waste.
- The data of the statistical analysis from this research can be useful as it indicates that it is necessary to hold some training course about biomedical waste management by relevant experts.

### 1. Data

Descriptive statistics related to the demographic information of the working personnel of case study hospitals were shown in Table 1. The data of Kruskal-Wallis test to compare the knowledge, attitude and practice of hospital staff regarding the management of hospital waste disposal in occupational groups was shown in Tables 2 and 3. Also, Tables 4 and 5 shows the data of the Mann-Whitney U test about the difference between the groups about the practices of hospital staff regarding the waste disposal management in occupational groups. Also, Table 6 shows the relationship between working personnel age, years of service and passing the health course with knowledge, attitude and practices. However, compare the range of scores for each field was shown in Table 7.

### 2. Experimental design, materials and methods

This survey-descriptive study was carried out in 5 university hospitals of Tehran to investigate knowledge, attitude and practices of healthcare staff on the appropriate handling and management of health care waste (HCW). 162 participants of personnel working in the wards of Tehran hospitals: doctors, nurses and service personnel participated in this study and the questionnaire was completed by them. The questionnaire included demographic questions: 10 questions about knowledge,
Table 1
Descriptive statistics related to the demographic information of the healthcare personnel.

| Variable name             | Variable grouping | Knowledge level N (%) | Attitude rate N (%) | Behavior rate N (%) | Sum            | $X^2$ | DF | p   |
|---------------------------|-------------------|-----------------------|---------------------|---------------------|----------------|-------|-----|-----|
| Age(year)                 |                   |                       |                     |                     |                |       |     |     |
| 21–31                     |                   | 59(52.8)              | 59(52.7)            | 59(52.7)            | 177(52.4)      | 0.000 | 2  | 1  |
| 31–41                     |                   | 32(21.8)              | 32(21.8)            | 32(21.8)            | 92(27.2)       | 0.08  | 2  | 0.96 |
| 41–51                     |                   | 19(16.7)              | 19(16.7)            | 19(16.7)            | 57(16.9)       | 0.000 | 2  | 1  |
| 51–54                     |                   | 4(3.5)                | 4(3.5)              | 4(3.5)              | 12(3.5)        | 0.000 | 2  | 1  |
| Sex                       |                   |                       |                     |                     |                |       |     |     |
| Female                    |                   | 117(74.1)             | 117(75)             | 116(74.4)           | 350(74.5)      | 0.006 | 2  | 0.99 |
| Male                      |                   | 41(25.9)              | 39(25)              | 40(25.6)            | 120(25.5)      | 0.05  | 2  | 0.97 |
| Education level           |                   |                       |                     |                     |                |       |     |     |
| To diploma                |                   | 36(22.9)              | 34(21.9)            | 35(22.6)            | 105(22.4)      | 0.06  | 2  | 0.97 |
| Associate Degree          |                   | 17(10.8)              | 17(11)              | 17(11)              | 51(10.9)       | 0.000 | 2  | 1  |
| Bachelor                  |                   | 85(54.1)              | 85(54.8)            | 84(54.2)            | 254(54.3)      | 0.008 | 2  | 0.99 |
| Higher than bachelor      |                   | 19(12.1)              | 19(12.3)            | 19(12.3)            | 54(12.2)       | 0.000 | 2  | 1  |
| Job                       |                   |                       |                     |                     |                |       |     |     |
| Doctor                    |                   | 9(5.8)                | 9(5.8)              | 9(5.8)              | 27(5.8)        | 0.000 | 2  | 1  |
| Laboratory sciences       |                   | 25(16)                | 25(16.2)            | 25(16.2)            | 75(16.1)       | 0.000 | 2  | 1  |
| Radiologist               |                   | 19(12.2)              | 19(12.3)            | 18(11.7)            | 56(12.06)      | 0.04  | 2  | 0.98 |
| Paramedics and nurses     |                   | 56(35.9)              | 55(35.7)            | 55(35.7)            | 166(35.8)      | 0.012 | 2  | 0.99 |
| services                  |                   | 29(18.6)              | 28(18.2)            | 29(18.8)            | 86(18.5)       | 0.023 | 2  | 0.98 |
| Technician                |                   | 10(6.4)               | 10(6.5)             | 10(6.5)             | 30(6.45)       | 0.000 | 2  | 1  |
| others                    |                   | 8(5.1)                | 8(5.2)              | 8(5.2)              | 24(5.15)       | 0.000 | 2  | 1  |
| Years of service          |                   |                       |                     |                     |                |       |     |     |
| < 10                      |                   | 84(59.6)              | 83(59.7)            | 83(59.7)            | 250(59.65)     | 0.008 | 2  | 0.99 |
| 10–20                     |                   | 43(30.15)             | 42(30.2)            | 42(30.2)            | 127(30.3)      | 0.06  | 2  | 0.99 |
| 20–30                     |                   | 14(9.9)               | 14(10.1)            | 14(10.1)            | 42(10.03)      | 0.000 | 2  | 1  |
| Passing health course     |                   |                       |                     |                     |                |       |     |     |
| Yes                       |                   | 71(54.6)              | 70(54.3)            | 70(54.3)            | 211(54.4)      | 0.009 | 2  | 0.99 |
| No                        |                   | 59(45.4)              | 59(45.7)            | 59(45.7)            | 177(45.6)      | 0.000 | 2  | 1  |
Table 2
Data of Kruskal-Wallis test about the knowledge, attitude and practices among healthcare personnel.

| Job Groups | Doctor | Laboratory | Radiologist | Paramedics | Nurses | Health expert | Public Affairs | Services | Technician | Others | \( \chi^2 \) | DF | Significant |
|------------|--------|------------|-------------|-------------|--------|---------------|---------------|----------|------------|--------|-------------|----|-------------|
| Knowledge  | Number | 9          | 25          | 19          | 6      | 50            | 4             | 3        | 26         | 10     | 8           | 17.957 | 9 | 0.036       |
|            | Average rating | 10.94 | 8.84 | 9.58 | 4.83 | 62.38 | 9.38 | 102 | 88.42 | 93.8 | 84.13     |
| Attitude   | Number | 9          | 25          | 19          | 5      | 50            | 4             | 3        | 25         | 10     | 8           | 11.297 | 9 | 0.256       |
|            | Average rating | 58.83 | 8.94 | 6.87 | 73 | 86.57 | 3.13 | 55.67 | 83.98 | 70.5 | 89.81     |
| Practices  | Number | 9          | 25          | 18          | 5      | 50            | 4             | 3        | 26         | 10     | 8           | 34.451 | 9 | < 0.0001    |
|            | Average rating | 55    | 8.18 | 5.22 | 91.6 | 76.15 | 12.8 | 85.83 | 114.2 | 53.05 | 60.13    |
9 question about attitude and 11 question about practices [1–10]. The validity and reliability of the questionnaire were tested by relevant experts in this issue and Cronbach's alpha equal to 0.78 was achieved. The knowledge questions were scored by order: 2 scores for “Yes”, 1 score for “No” and missing for “No idea” answer. The attitude and practices questions were scored by the Likert spectrum scaled from 1 to 5 score.

Table 3
Data of Kruskal-Wallis test about the knowledge, attitude and practice among educational groups regarding biomedical waste management.

| Variables | Study groups          | Number | Average rating | $\chi^2$ | DF | The significance level |
|-----------|-----------------------|--------|----------------|---------|----|------------------------|
| Knowledge | To diploma            | 36     | 81.38          | 3.787   | 3  | 0.290                  |
|           | Associate Degree      | 17     | 76.15          |         |    |                        |
|           | Bachelor              | 85     | 74.7           |         |    |                        |
|           | Higher than bachelor  | 19     | 96.29          |         |    |                        |
| Attitude  | To diploma            | 34     | 73.21          | 3.867   | 3  | 0.176                  |
|           | Associate             | 17     | 64.18          |         |    |                        |
|           | Bachelor              | 85     | 83.99          |         |    |                        |
|           | Higher than bachelor  | 19     | 72.13          |         |    |                        |
| Practices | To diploma            | 35     | 100.06         | 11.743  | 3  | 0.008                  |
|           | Associate             | 17     | 69             |         |    |                        |
|           | Bachelor              | 84     | 73.8           |         |    |                        |
|           | Higher than bachelor  | 19     | 64             |         |    |                        |

Table 4
Data of the Mann-Whitney U test about the practices among healthcare personnel.

| Job Groups                      | $Z$    | Significant Level |
|---------------------------------|--------|-------------------|
| Doctor with a health expert     | -2.79  | 0.005             |
| Doctor with services            | -3.19  | 0.001             |
| Laboratory sciences with services | -2.7  | 0.007             |
| Laboratory sciences with Technician | -1.95| 0.05              |
| Radiology with Nurses           | -2     | 0.04              |
| Radiology with health expert    | -2.72  | 0.003             |
| Radiology with services         | -3.91  | < 0.0001          |
| Radiology with health expert    | -3.62  | < 0.0001          |
| Nurses with health expert       | -2.41  | 0.016             |
| Nurses with services            | -3.62  | < 0.0001          |
| Health expert with Technician   | -2.7   | 0.007             |
| Health expert with others       | -2.21  | 0.027             |
| Services with Technician        | -3.27  | 0.001             |
| services with others            | -2.59  | 0.011             |

Table 5
Data of the Mann-Whitney U for the difference between educational groups about the practices.

| Study groups                      | $Z$ Statistical | The significance level |
|-----------------------------------|-----------------|------------------------|
| To diploma or Associate           | -2.63           | 0.008                  |
| To diploma or Bachelor            | -2.82           | 0.005                  |
| To diploma or Higher than bachelor| -2.76           | 0.006                  |
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Transparency document. Supplementary material

Transparency document associated with this article can be found in the online version at https://doi.org/10.1016/j.dib.2018.08.002.

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Table 6
Spearman correlation coefficients between knowledge, attitude, practices, age, years of service and Passing the health course.

| Variables                      | Correlation rate | The significance level |
|-------------------------------|------------------|------------------------|
| Age                           |                  |                        |
| Knowledge                     | 0.156            | 0.097                  |
| Attitude                      | 0.108            | 0.256                  |
| Practices                     | 0.137            |                        |
| Age                            |                  |                        |
| Knowledge                     | 0.199            |                        |
| Attitude                      | 0.087            | 0.307                  |
| Practices                     | 0.090            | 0.291                  |
| Years of services             |                  |                        |
| Knowledge                     | 0.21             | 0.89                   |
| Attitude                      | 0.434            | 0.28                   |
| Practices                     | 0.622            | 0.062                  |
| Passing the health course     |                  |                        |
| Knowledge                     |                  |                        |
| Attitude                      |                  |                        |
| Practices                     |                  |                        |

Table 7
Comparison the range of scores for each field.

| The range of scores for each field | Undesirable | Fairly Undesirable | Desirable |
|------------------------------------|-------------|--------------------|-----------|
| The scope of the study             | Number | %     | Number | %     | Number | %     |
| Knowledge rate                     | 23    | 14.2  | 103   | 36.6  | 36     | 22.2  |
| Attitude Status                    | 3     | 1.9   | 1     | 0.6   | 156    | 96.3  |
| Behavior Status                    | 13    | 0.8   | 101   | 62.3  | 46     | 28.4  |

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