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Original Article

Evaluation of the Relationship between Perceived Social Support and Earthquake-related Knowledge in High School Students

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Abstract

Introduction: Iran is located on the earthquake belt. Students are among the groups of society that are constantly exposed to the dangers caused by earthquakes. Perceived social support plays a significant role in the students' self-efficacy for proper earthquake response. The present study examined perceived social support's impact on high school students' earthquake preparedness knowledge.

Methods: This cross-sectional study was conducted on 350 high school students in Lordegan City. Data were collected using a standard questionnaire and analyzed in SPSS-20 software using Pearson's correlation test.

Results: The results revealed a statistically significant relationship between perceived social support and performing self-care behaviors ($P<0.05$). Among the dimensions of social support, family support had the highest correlation ($r=0.523$), and important people's support showed the lowest correlation ($r=0.311$) with earthquake-related knowledge.

Conclusion: Based on the results of this study, it is recommended that the importance of the supporting role of the family should be emphasized, and a suitable educational program should be designed for families to enhance the student's knowledge about earthquakes.

Keywords: Perceived social support, Earthquake, High school students, knowledge

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Introduction

Earthquake is one of the most unpredictable and destructive natural disasters that affect people's lives and cause many human and financial losses (1). Earthquake has been one of the most important natural disasters due to its destructive effects throughout human history (2). Therefore, it seriously threatens people's lives (3). The main effects of this phenomenon include the destruction of artificial buildings and structures, leading to death, severe injuries, homelessness, and other social problems (4). More than one million earthquakes occur around the world annually (5). Based on a global scale, earthquakes and tsunamis have killed more than 400000 people and affected 46 million over the past 20 years (6). Iran is located in an earthquake-prone region, and numerous catastrophic earthquakes have been recorded in its history (7). Over the past 90 years, more than 180000 people died in different earthquakes (8). Earthquakes per se do not have any adverse consequences, but what makes this phenomenon a disaster is the unpreparedness to cope with its consequences (9). As long as the safety of humans, their society, and their habitats against earthquakes is not guaranteed sufficiently, they will cause harmful and critical consequences (10). The experience

of developed countries confirms that the effects of this natural phenomenon can be significantly reduced with careful planning (11).

Students are one of the society groups constantly exposed to earthquake-related hazards (12). In this regard, continuous and ongoing education is essential to prepare them for earthquakes, as a missing link in the earthquake crisis management cycle (13). Thus, the most important step in managing the earthquake crisis in schools is education to enhance students' knowledge and public awareness (14). Given that earthquake education is essential, being purposeful, continuing this education for students and families, and increasing their quality and quantity can always be an important issue in the plans made by the officials of educational centers (15). It can lead to more solidarity between the parents and schools, eventually reducing human casualties (16).

Various factors, including preparedness, awareness, and self-efficacy, affect students' responses to sudden events, especially earthquakes. One of these factors is social support, which affects the individuals' beliefs in their abilities and enhances their performance in the face of disasters (17). Social support has been defined as the reception of affection, attention, and assistance from family members, friends, and other people (18). The mental aspect of social support can provide practical psychological assistance to a person to cope with the pressures and problems of life (19). Since these people have a clear idea that there are people who help them in all moments of life, they resist the adversities more strongly (20).

Given the important role of social support and awareness related to earthquakes, this study was designed to investigate the relationship between perceived social support and awareness related to earthquakes in high school students.

Materials and Methods

Participants

This cross-sectional study was carried out in 2024 on 350 high school students. The study's statistical population included all high school students in Lordegan. The study's inclusion criteria were residence in Lordegan City, willingness and consent to participate, and lack of participation in similar programs.

Data Collection Tool

The measurement tools included a demographic information questionnaire, a perceived social support questionnaire, and an earthquake-related questionnaire. The perceived social support questionnaire contained 12 questions scored using a seven-point Likert scale. The first question on this scale was, "When I need it, there is always a special person beside me." Scores 1, 2, 3, 4, 5, 6, and 7 were assigned to 'I completely disagree,' 'I disagree,' 'I relatively disagree,' 'I have no idea,' 'I relatively agree,' 'I agree,' and 'I completely agree,' respectively. Thus, the total score of perceived social support could range from 12 to 84, with higher scores indicating a better perceived social support status. Zimmet et al. reported the alpha reliability coefficient of the scale as 0.85-0.91 and its test-retest reliability as 0.72-0.85 (21). In Iran, this questionnaire was used by Davari et al., and its reliability was confirmed using the test-retest method (0.895) and Cronbach's alpha coefficient method (87%) (22).

The earthquake-related awareness index consists of 22 questions, the first 21 of which are yes/no. Scores 1 and 2 were given "no" and "yes" options. Therefore, the earthquake-related awareness scores could range from 21 to 42, with higher scores representing better awareness. In the study of Huberman et al., the correlation coefficient was reported as 0.94 using the test-retest method and 89% using Cronbach's alpha coefficient (23). This instrument was also used by Mehraein et al. in Iran, and Cronbach's alpha coefficient and Pearson's correlation coefficient were obtained as 0.86 and 0.94, respectively (8).

Data Collection Method

In this study, ten high schools (five female high schools and five male high schools) were randomly selected from the city's 20 female high schools and 18 male high schools. Then, eligible students were selected, and the research objectives and procedures were explained. After obtaining their written informed consent, they were requested to complete a questionnaire on demographic information, earthquake-related awareness, and perceived social support. Finally, the obtained data were analyzed.

The Sample Size of Statistical Methods

The sample size was 350 people using the following formula:

$$n = \frac{Nz^2pq}{Nd^2 + z^2pq}$$

N: Population size, set at 2000 people.
Z: The reliability coefficient is 0.95, that is 1.96.
d: The value of the permissible error, which is supposedly 0.05.
P: The percentage of preparedness in nurses, and q is the percentage of unpreparedness in nurses because its value is unknown. Its maximum value is 0.5.

Data Analysis Method

Data were analyzed through SPSS-20 software using Pearson's correlation statistics at a significance level of 95% and simple linear regression.

Ethical Considerations

1. This article was extracted from a research work approved by Shahrekord University of Medical Sciences (code: IR.SKUMS.REC.1400.218).
2. Sampling was started after the researcher submitted a letter of introduction to Shahrekord University of Medical Sciences.
3. The objectives of the study were explained to the participants.
4. The participants were assured that their information would remain confidential.
5. The obtained information was analyzed without bias.

Results

Examining the data obtained from the studied sample revealed that the mean age of the subjects was 17.5±6.7 years. In this regard, 53.125% were studying in the third-grade high school and 50% were male (Table 1).

Table 2 presents the mean scores of social support and earthquake-related knowledge. According to the results, family support received a high score among the social support domains.

Also, there was a correlation between social support and self-care behavior (P>0.001 and r=0.542). Moreover, among the types of social support areas, family support had a higher correlation with self-care behavior (P<0.001 and r=0.523) (Table 3).

To examine the predictive effect of social support (family, friends, and other important people) on earthquake-related awareness, we designed Table 4 using simple linear regression. Social support dimensions predict 58% of earthquake-related awareness in total.

Table 1: Demographic characteristics of the participants

Variable		Frequency	Percentage
Age (Year)	15-16	65	18.58
	16-17	99	28.28
	17-18	186	53.14
Gender	Female	175	50.00
	Male	175	50.00
Educational grade	First	63	18.00
	Second	114	32.57
	Third	173	49.43

Table 2: First quartile, third quartile, mean, and standard deviation of different areas of social support and earthquake-related knowledge among the participants

Variable	Q1	Q3	Mean	SD
Family support	59.08	61.51	60.3	1.8
Friends' support	53.35	54.84	54.1	1.1
Other important people support	43.48	47.12	45.3	2.7
Overall perceived social support	50.09	56.3	53.2	4.6
Earthquake-related knowledge	43.54	58.66	51.1	11.2

Table 3: Relationship between perceived social support and earthquake-related knowledge

Social protection areas	r	P
Family support	0.523	>0.001
Friends' support	0.394	>0.001
Other important people support	0.311	>0.001
Overall perceived social support	0.542	>0.001

Table 4: Results of linear regression (backward) for the predictive effect of Social Support areas on earthquake-related knowledge

Social Support areas	R	t	P
Family support	0.43	6.9	0.000
Friends' support	0.26	3.7	0.000
Other important people support	0.19	2.6	0.000

R^2=0.58; R=0.76

Table 5: First quartile, third quartile, mean, and standard deviation of earthquake-related knowledge items of the participants

Item	First quartile	Third quartile	Mean	SD
Do you know what an earthquake is?	1.74	1.91	1.83	0.13
Have you ever experienced an earthquake?	1.49	1.78	1.64	0.22
Are you prepared for a major earthquake?	1.01	1.08	1.05	0.05
Do you know how to prepare for an earthquake?	1.01	1.34	1.18	0.24
Do you know how to cut the gas flow system?	1.49	1.74	1.62	0.18
Do you know how to cut off the water flow?	1.50	1.71	1.61	0.15
Do you know how to turn off the electricity?	1.48	1.81	1.65	0.24
Do you have a first aid kit at home?	1.14	1.29	1.22	0.11
Do you know what to do to protect yourself during an earthquake?	1.30	1.55	1.43	0.18
Have you checked your house for the risk of earthquake damage?	1.03	1.20	1.12	0.13
Do you know where the exit doors are located?	1.64	1.93	1.79	0.22
Do you know which type of failure and which level of earthquake occurs more often in your area?	1.02	1.21	1.12	0.14
Do you think the magnitude or intensity of earthquakes in your city is high?	1.32	1.81	1.57	0.36
Do you believe you live in an earthquake-resistant building that can easily resist earthquakes?	1.33	1.56	1.45	0.17
If you participate in earthquake classes and workshops, you will be prepared to confront an earthquake.	1.64	1.84	1.75	0.14
Does your area have an evacuation and rescue plan?	1.01	1.22	1.12	0.16
Do governments or philanthropic organizations implement evacuation plans?	1.09	1.26	1.18	0.12
Have you had an experience of participating in the evacuation plan?	1.01	1.06	1.04	0.03
Do you know where the emergency shelters are?	1.00	1.14	1.07	0.11
My attitude is: "Earthquakes will occur anyway, and I cannot do anything about it."	1.01	1.83	1.42	0.62
My attitude is: "I will keep calm, do the best I can, and strengthen my preparedness."	1.33	1.78	1.56	0.34

Table 5 presents the first quartile, the third quartile, the mean, and the standard deviation of the earthquake-related knowledge items of the participants.

Discussion

Knowledge enhances human achievements and individuals' well-being and improves performance. Knowledge is associated with various factors. Thus, the present study was carried out to evaluate the relationship between perceived social support and earthquake-related knowledge. The results of the present study revealed a significant relationship between perceived social support and earthquake-related knowledge in students. In justifying this result, perceived social support can help a needy person cope with life problems and pressures (19).

This result is in line with several studies, including a study conducted by Chiu, which evaluated the effect of perceived social support on the improvement of knowledge and skills of high school students; he showed that social support had a positive effect. Also, it is significantly related to improving students' knowledge and skills (24). Our study is consistent with the aforementioned research examining social support. However, the present study evaluated the relationship between perceived social support and earthquake-related knowledge. Another study by Lundberg et al. examined the relationship between social support and life skills. It showed that increasing social support was associated with improving life skills in high school students and that there was a significant relationship between these two variables (25).

Daniel and Barratt's study also showed that increasing social support is associated with increased physical and mental health levels in high school students (18). Chen et al.'s study also shows that educational programs to enhance social support positively affect students' emotional awareness (5), which is in line with the results of the present study. Also, Ramezani

et al. showed that teachers' perceived social support positively and significantly affected students' academic engagement through the mediating role of academic self-regulation (26). Yarmohammadzadeh and Feizollahi showed in a study that there was a significant relationship between social support, academic motivation, and self-efficacy (27). Scott et al.'s study also showed moderate levels of academic stress and social support and relatively high levels of resilience. Academic stress was negatively related to social support and resilience. Social support also had a positive effect on resilience (12).

Also, the present study's results showed that the family's perceived social support had the highest correlation with knowledge about earthquakes. This result was not far-fetched, considering the study location. In Lordegan City, according to cultural norms, the role of the family in raising children is vital. It has a more memorable role than friends and other people in raising children. The results of other studies also confirm the importance of the role of the family. In this regard, the study conducted by Rostami et al. showed that family support had the highest correlation with awareness and was a predictor of awareness and self-efficacy (28). Martin et al. also found that the first social support was received from the family. Upon entering the larger community, social support from other sources, such as friends and other people, can also be provided (29). Emotional support from the family plays a more important role than tangible support in promoting children's knowledge (30). According to Shen, parental behavior has a positive effect on increasing adolescents' knowledge (31). The family can support its members in two ways. One is by providing necessary information and facilities for its members, and the other is by sharing existing emotions. Parents who are responsible for their children's behavior can provide opportunities for increasing their knowledge by providing a rich environment (32).

The results of the present study revealed that the item "Do you know what an earthquake is?" with a mean and standard deviation of 1.83 ± 0.13 obtained the highest mean, and the item "Have you had an experience of participating in the evacuation plan?" with a mean and standard deviation of 1.04±0.03 obtained the lowest mean among the items of the earthquake-related knowledge questionnaire. To justify these results, we can say that the educational programs in the mass media, family, friends, and school enhance earthquake-related knowledge. However, the lack of specialized training courses and earthquake maneuvers is completely being felt. In general, in explaining the effectiveness and continuity of the effect of perceived social support on earthquake-related knowledge in high school students, involving family and friends as the closest people to them plays a significant role in earthquake educational programs for students.

One of the limitations of this study was its small sample size. Thus, future studies are recommended to use a larger sample size. Collecting data through self-report tools was another limitation of this study. Objective behavioral indices or semi-structured interviews are suggested for future studies. Finally, since the researcher conducted the sessions, there might be an unwanted bias on the researcher's part to confirm the research hypotheses.

According to the results, it is recommended that authorities should:

1. hold training sessions and perform maneuvers to prepare the students for earthquakes continuously,
2. hold training sessions for students to prepare them for other disasters (floods, fires, etc.) continuously and purposefully,
3. incorporate disaster preparedness into students' curricula and
4. design a scientific application to promote social support in students and increase the interaction between families and schools.

Conclusion

The results of the present study suggest that perceived social support has a significant relationship with earthquake-related knowledge in high school students. It can be stated that perceived social support can provide practical psychological help to a needy person to cope with life problems and pressures since such a person has a clear idea in his or her mind at all moments of his or her life that there are people who help him or her when he or she is helpless. Moreover, it significantly impacts a person's performance and can give a more appropriate response to complex problems. In general, in explaining the effectiveness and continuity of the effect of perceived social support on earthquake-related knowledge in high school students, involving

family and friends as the closest people to them plays a significant role in earthquake educational programs for students.

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Authors' Contribution

Hassan Khaledi Sardashti, Milad Ahmadi Marzaleh, Rahimali Sheikhi, and Hamidreza Sadeghi Gandomani were responsible for the conception and design of the study. Hassan Khaledi Sardashti and Rahimali Shaikhi supervised the whole thesis. All authors prepared the first draft of the manuscript. All authors did the data analysis and supervised the study. All authors have read and approved the final manuscript.

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Conflict of Interest

There are no conflicts of interest.

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