

FIRST AID DISASTER KIT FOR A FAMILY: A CASE STUDY OF SERBIA

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Abstract: In the period after the manifestation of the consequences of disasters, the first responder's members will approach the rescue of people and the provision of the first medical assistance to the injured in the shortest possible time. However, due to the specific nature of such events, they will not often be able to help everyone in the coming hours and days, and the survival rate of such events depends to a large extent on having a first aid kit as well as other disaster supplies. For these reasons, the research was conducted with the aim of the scientific explanation of the factors affecting the possession of the first aid disaster kit for a family. Using face-to-face interviews, two thousand and five hundred respondents in nineteen local communities were interviewed. The results of the conducted research show that more than half of the respondents do not possess the first aid kit in the household, their vehicle and that it is not kept in an easily accessible place. It has also been established that certain personal and environmental factors influence the possession of such supplies. The obtained results of the research could be used to create programs for improving the level of resilience of citizens in conditions of disasters.

Keywords: disasters, first aid kit, family, research, Serbia.

INTRODUCTION

Despite innovative scientific and technical achievements, people continue to be greatly affected by the multidimensional effects of various disasters. Certainly, the level of vulnerability of people and their property, apart from the intensity of their exposure to danger, depends also on the way people behave in the identified and existing dangers surrounding them (Adem, 2019; Alksandrina, Budiarti, Yu, Pasha, & Shaw, 2019; Xuesong & Kapucu, 2019). The unpredictable nature of natural and technological hazards, as well as the social system impossibility of functioning in such circumstances, clearly indicates that there is no such thing as absolute security and that citizens largely depend on themselves. It is widely known that the members of the emergency rescue services or the protection forces and rescue system do not have sufficient human and material capacities to provide the first and indispensable assistance to injured and vulnerable people in

a short period of time. For these reasons, in a large number of scientific papers and strategic documents, the necessity of improving the readiness of citizens to respond in such circumstances is emphasized (Baker & Grant Ludwig, 2018; Jang, Wang, Paton, & Tsai, 2016; Kumiko & Shaw, 2019; Ronan, Alisic, Towers, Johnson, & Johnston, 2015). Without considering the further elaboration of the necessary preconditions for survival in such events, it can be stated that it is vital to have the first aid disaster kit for a family. Possession of such a set enables citizens to provide themselves or others with the necessary first aid in the immediate and very fast period. Also, it is very important that besides having such a set, citizens are trained to use them and keep them in an easily accessible place. The paper gives a modest contribution to a better understanding of the readiness of citizens to respond by improving the level of their first aid disaster kit.

LITERARY REVIEW

By analysing various papers from the field of disaster studies (Ahmad & Rahman, 2019; Jawahar, Varghese, & Shenai, 2018; McNeill, Killian, Moon, Way, & Betsy Garrison, 2018; Pickering et al., 2018; Tam, Chan, & Liu, 2019), it can be noticed that the examination of the possession of the first aid disaster kit is often observed in the context of the general readiness of citizens and households to respond in disaster conditions. In a study carried out in the USA (Goddard, 2017), 69% of respondents possess the first aid disaster kit, and 66.2% believe that improvements in preparedness will greatly mitigate the future consequences of disasters. Martins, Louis-Charles, Nigg, Kendra, and Sisco (2018) have established a high level of readiness of the households in New York, especially in relation to the possession of emergency supplies and communication resources. It is important to look at the results of the research (Beatty, Shimshack, & Volpe, 2019) according to which the sale of emergency supplies is increasing when certain parts of local communities are endangered by the emerging threats. These results can be used to create campaigns that can help raise people's awareness of the importance of owning such supplies. In the research conducted by Cvetković, Gačić, and Jakovljević (2017) it was found that 61.5% do not have supplies for disaster survivor, that 37.2% of the respondents have food supplies for 4 days, while only 12% have food supplies for 1 day. It was also found that 17.6% of the respondents own a radio transistor, 40% a torch, 40.6% a shovel, 25.8% a hack, 33.6% a hook and wash and 13.2% a fire extinguisher. In one study (Kapucu, 2008) conducted in Florida, it was found that only about 8% of respondents have a disaster supplies kit that can settle food, water and medicine needs for the next three days.

METHODS

The subject of the research is the scientific description of the level of possession of the first aid disaster kit in households, which enables the improvement of a more effective response as well as raising the level of their resistance. In addition, the aim of the research is the scientific explication of the impact of certain demographic and socioeconomic factors on the possession of the first aid disaster kit. Namely, it wants to examine whether men in relation to women, older in relation to younger, more educated related to less educated, etc. possess such sets, with the aim of finding the most optimal solution for improving the situation in that area. For the needs of the research, a survey of 2500 citizens in 19 local communities was conducted in the period from 2015 to 2016: Obrenovac (178), Šabac (140), Kruševac (180), Kragujevac (191), Sremska Mitrovica (174), Priboj (122), Batočina (80), Svilajnac (115), Lapovo (39), Paraćin (147), Smederevska Palanka (205), Sečanj (97), Loznica (149) Bajina Bašta (50), Smederevo (145), Novi Sad (150), Kraljevo (141), Rekovac (50) and Užice (147). By analysing the structure of the sample, it was determined that there were 50.2% female respondents and 49.8% male ones. Out of the total number of respondents, there was the highest number of younger respondents (28.4%), and the average age is about forty years. According to the level of education, the most represented respondents had secondary education. The presented methodological framework of the research is part of a more comprehensive research on the readiness of citizens to respond to disasters in the RS (Cvetković, Filipović, 2018; Cvetković, 2017; Cvetković, Milašinović, & Lazić, 2018; Cvetković, Roder, Öcal, Tarolli, & Dragičević, 2018; Cvetković & Filipović, 2018).

RESULTS AND DISCUSSION

The question, “Do you have a first aid disaster kit in your household?” was answered by 2270 respondents (90.8%). This sought to examine whether and to what extent the citizens were resistant to the consequences of disasters. More than half of the respondents (53%) expressed the view that they do not have a first aid kit in their households. The implications of not having such a kit can be serious having in mind the consequences of a quick and effective first aid. On the other hand, it is not possible to expect rapid arrival of an emergency medical service that can be prevented in various ways from accessing the area where the injured persons are: fully or partially damaged critical infrastructure; lack of human and material capacities due to a large number of injuries or affected people; the inability to timely call the emergency medical service due to damage to the functionality of the communication and communication system, etc. In addition, it is very important to have a first aid kit in the vehicle. Apart from the reasons for improving the safety of road users, it is advisable and legally prescribed that all citizens have a first aid disaster kit in their vehicles. When asked “Do you have

a first aid disaster kit in your vehicle”, the answer was given by 74.2% (1855) respondents. According to the obtained results, more than half of the respondents, 57.8% (1445) have a first aid disaster kit. Starting from the legal obligation of the citizens envisaged by the Law on Road Traffic Safety (Official Gazette RS, no. 41/2009, 53/2010, 101/2011, 32/2013 - resolution US, 55/2014, 96/2015 - state law, 9/2016 - resolution US, 24/2018, 41/2018, 41/2018 - state law, 87/2018 and 23/2019), it can be pointed out that the obtained results are not satisfactory bearing in mind the sanctions for their disregard as well.

One of the conditions for improving the resilience of citizens, besides having a first-aid kit, also refers to the information about its content, as well as the training for its use. Of the total number of respondents who have a first aid disaster kit, only 59.8% of respondents are familiar with its content, while 50.2% of respondents are not. So, apart from having a first-aid kit in emergency situations, the citizens must be familiar with its content and trained to use it in order to be able to provide assistance to themselves or others in a short period of time. In addition, disasters as unpredictable and sudden events are characterized by an intense and rapid manifestation of consequences that do not give much time and space for a timely response. In doing so, it is very important that at any time of the day and night, the members of a household are familiar with the location of the first aid disaster kit. Such situations are often accompanied by an interruption of electricity that prevents the normal functioning of people, especially at night hours. When asked “Do you keep the first aid kit in an easily accessible place”, 52.4% of respondents gave a positive answer. The results obtained were expected, given that such a kit is not used very often.

Starting from the first research question, whether there is a difference between men and women regarding the possession of the first aid kit in conditions of disasters in their households and vehicles, the information on the content and holding such a kit in an easily accessible place, it has been established that there is a statistically significant influence of gender on having a first aid kit in the vehicle $\chi^2 = 13.90$, $p = 0.001$ and keeping the kit in an easily accessible place $\chi^2 = 3.35$, $p = 0.187$. There was no statistically significant association of gender with the possession of a first aid kit in the household, as well as information about the content of the kit itself (Table 1). According to the results obtained, further analyses show that male respondents (79.5%) in relation to women (76.2%) have a first aid disaster kit in the vehicle to a greater extent. It can be assumed that men spend more time in the vehicle and are aware of the significance of such a kit, or on the other hand, more often they resort to certain risky situations when driving a vehicle, so they are aware of its significance. Also, men (69.2%) compared to women (61.6%) have such a set in an easily accessible place more often.

In further research, differences were examined with respect to the age of the respondents and on this occasion it was established that there was a statistically significant influence on the following variables: the first aid kit in households $\chi^2 = 117.16$, $p = 0.000$; the first aid kit in vehicles $\chi^2 = 75.08$, $p = 0.000$; information

about the content $\chi^2 = 44.74$, $p = 0.000$. There was no statistically significant age-related relationship with variables - an easily accessible place (Table 1). On the basis of further analysis, it was established that the elderly (61.6%) compared to the younger (51.5%) respondents expressed the attitude that they had the first aid kits in their households. In contrast, the younger respondents (81.5%) compared to the older ones (35%) are more likely to have the first aid disaster kit in their vehicles. One of the basic drivers of a certain behaviour is fear of disaster (Cvetković, Öcal, & Ivanov, 2019a). In the results of this research, it was established that there is a statistically significant correlation of fear with possession of the first aid kit in the household $\chi^2 = 13.10$, $p = 0.001$; having the first aid kit in the vehicle $\chi^2 = 9.10$, $p = 0.011$; and keeping the kit in an easily accessible place $\chi^2 = 11.59$, $p = 0.003$. Statistical significance of respondent's age with variable was not established: content information (Table 1). According to the analysed data, the respondents with fear of disasters (54.7%) compared to those without it (48.4%) express their opinion that they have the first aid disaster kit to a greater extent. The results obtained were expected, given that the fear of future negative consequences can directly affect the possession of such a set that can prevent the emergence of the worst case scenario. Also, the respondents who have a fear of disasters (80.7%) compared to those who do not have it (74.9%) are more likely to have the first aid disaster kit in their vehicles. In addition, the respondents who have fear (61%) compared to those who do not have it (58.3%) keep such a set in an easily accessible place to a slightly greater extent.

Human education is crucial to reducing the risk of disasters by improving resistance and preparedness for proper response in given situations (Cvetković et al., 2018; Cvetkovic, 2019; Cvetković, Öcal, & Ivanov, 2019b; Johnson, Ronan, Johnston, & Peace, 2014; Strayhorn, Dasmohapatra, Tilotta, & Mitchell, 2012). The obtained results of the research show that the education of citizens has an impact on the possession of the first aid kit in households $\chi^2 = 36.90$, $p = 0.000$; the first aid kit in the vehicle $\chi^2 = 41.35$, $p = 0.000$; and the level of information about the content $\chi^2 = 36.20$, $p = 0.000$. There was no statistically significant link between the educational levels with the variable: an easily accessible place (Table 1). When analysing the obtained results, it is noticed that highly educated respondents (55.4%) have the first aid kit in their households compared to those with primary school education (47.7%). It can be assumed that in the education process certain information are generated that create awareness of the necessity and importance of owning such supplies. The results obtained are similar when it comes to having the first aid kit in the vehicle. Namely, highly educated respondents (83.3%) compared to respondents with elementary school (65.3%) have such kits. By contrast, of the total number of respondents who possess the kit, the most informed about its content are the respondents with completed secondary school (65.1%).

Table 1: *Chi-square test results between the first aid disaster kit variables and gender*

Variable	First aid kit in the household		First aid kit in the vehicle		Information about the content		Easily accessible place	
	χ^2	Sig. (2-Tailed)	χ^2	Sig. (2-Tailed)	χ^2	Sig. (2-Tailed)	χ^2	Sig. (2-Tailed)
Gender	3.55	.169	13.90	.001**	3.35	.187	13.08	.001*
Age	117.16	.000**	75.08	.000**	44.74	.000**	11.33	.500
Education	36.90	.000**	41.35	.000**	36.20	.000**	6.95	.860
Fear	13.10	.001*	9.10	.011*	2.65	.265	11.59	.003*
Marital status	70.14	.000**	78.92	.000**	73.90	.000**	74.22	.000**
Risk perception	17.71	.001*	28.76	.000**	23.86	.000**	40.97	.000**
Employment status	9.46	.009*	30.05	.000**	7.36	.025*	14.45	.001*
Income level	32.71	.000**	57.86	.000**	33.30	.000**	27.02	.000**

The status of employment of citizens largely determines the way in which an individual works in a society. The results of the survey show that the education of citizens has an impact on having a first-aid kit in the household $\chi^2 = 9.46$, $p = 0.009$; the first aid kit in the vehicle $\chi^2 = 30.05$, $p = 0.000$; information about the content $\chi^2 = 7.36$, $p = 0.025$ and easily accessible place $\chi^2 = 14.45$, $p = 0.001$ (Table 1). According to the obtained results, the employed respondents (52%) compared to the unemployed respondents (48%) have the first aid disaster kit in the household to a greater extent. Also, the employed respondents (81.2%) compared to the unemployed (70.8%) are more likely to have the first aid disaster kit in their vehicles. When it comes to informing citizens about the content of the kit, the results are similar to the previous findings and it has been established that the employees are more informed about the first aid kit and to keep it more readily available in an easily accessible place.

One of the most important variables that can be related to the possession of a first-aid kit is the marital status of the respondents. The results of the survey show that marital status of citizens has an impact on having a first-aid kit in the household $\chi^2 = 70.14$, $p = 0.000$; the first aid kit in the vehicle $\chi^2 = 78.92$, $p = 0.000$; information about the content $\chi^2 = 73.90$, $p = 0.000$ and easily accessible place $\chi^2 = 74.22$, $p = 0.000$ (Table 1). Based on the results obtained, it can be pointed out that non-married respondents (54%) are more likely to have such a set in their households. It can be assumed that the respondents who live alone, because of their inability to help someone, have a kit to a greater extent in order

to protect themselves. In contrast, the respondents who are married (82%) are more likely to have such a kit in their vehicles. Additionally, they are more informed (67.2%) about the content of such a kit and they keep them in an easily accessible place (70.9%). The perception of risk as a cognitive process of seeking, receiving, selecting and processing various irritations plays an important role in the decision-making process in taking certain preventive measures. The results of the study show that the perception of risk has an impact on the possession of the first aid kit in the household $\chi^2 = 17.71$, $p = 0.001$; the first aid kit in the vehicle $\chi^2 = 28.76$, $p = 0.000$; information about the content $\chi^2 = 23.86$, $p = 0.000$ and easily accessible place $\chi^2 = 40.97$, $p = 0.000$ (Table 1). Further analyses show that the respondents who perceive a high level of risk (54.7%) more than others have a first aid kit in their homes. Expectedly, they also have the first aid disaster kit in the vehicle (80.7%). Finally, the influence of the level of income of citizens on the possession of the first aid kit was examined and it was established that the results of the study show that the level of income has an impact on the first aid disaster kit in the households $\chi^2 = 32.71$, $p = 0.000$; the first aid kit in the vehicle $\chi^2 = 57.86$, $p = 0.000$; information about the content $\chi^2 = 33.30$, $p = 0.000$ and easily accessible place $\chi^2 = 40.97$, $p = 0.000$ (Table 1). The respondents with incomes of up to 250 EUR (27.8%) and over 800 EUR (11.1%) have the first aid disaster kit to a less extent. On the other hand, the citizens with income up to 500 EUR mostly (39.6%) have such kits. Similar results were obtained when it comes to having the first aid disaster kit in vehicles. To the largest extent, such a set is possessed by the respondents with income up to 500 EUR (40.2%), while the respondents with income over 800 EUR (10.1%) have it to the least extent. Also, it was determined that most respondents who have incomes up to 500 EUR keep the first aid disaster kit in an easily accessible place and are informed about its content.

CONCLUSION

Disasters often occur suddenly and without timely warnings, leaving little time to people to respond efficiently and rationally. Most of them will be caught up and surprised, and only then will they realize the importance of timely preparedness and ability to respond in such situations. In Serbia, citizens' awareness of the necessity of owning the first aid disaster kit is still at a low level, having in mind the obtained results of the research. In that sense, it is necessary to further improve programs and awareness-raising campaigns, but also their training to respond in such situations. Accordingly, it is advisable to organize certain training of citizens in providing the first aid, as well as in using the first aid disaster kit in the conditions of disasters. Although a certain number of citizens have such a set, it has been found that a good part of them is not even familiar with its content, as well as with the ways of its use. Improving effective responses to reduce the disaster risk, according to the Sendai Framework implies profitable investments by local and national entities in the design and implementation of educational programs

with the aim of raising the level of resilience of the society. Unfortunately, in Serbia, the provisions of international regulations on disaster risk reduction have been implemented, but they are not applied to a large extent. For these reasons, it is necessary to continue with continuous research in order to direct the decision makers in the country to a more comprehensive and permanent solution to increase the readiness of citizens to respond to disaster conditions.

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