FEAR OF CORONAVIRUS AND AGE OF THE INHABITANTS OF THE BRCKO DISTRICT OF BOSNIA AND HERZEGOVINA - ANALYSIS OF INTERDEPENDENCE

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ABSTRACT

The paper investigates the differences between the age groups of the inhabitants of the Brcko District of BiH in terms of their fear of the new corona virus (COVID 19). The research was conducted in the period June-August 2020, on a sample of 160 respondents of different age groups. The sample included four age groups of subjects, while the fear of coronavirus was observed through four different modalities. It was found that there are differences among age groups in terms of fear of coronavirus, with, as expected, the elderly are most afraid, while young people are least afraid. On the other hand, unlike other age groups, mostly younger respondents are not afraid at all. Considering the observed differences, the Chi-square test of independence of the observed characteristics based on the analysis of the contingency table was applied. It was determined that there is an interdependence of respondents by age groups and fear of coronavirus, but the corresponding contingency coefficients show that it is not pronounced. Since a suitable (suitable or appropriate), non-random sample was used in the research, the stated results cannot be generalized to the total population, which means that they are valid only for the observed group of respondents.

Introduction

Very little is still known about the corona virus, which is why the fear of the virus in the population is increasing from month to month. Especially due to the fact that expectations were not met that with the arrival of summer and high temperatures, the number of infected will decrease or that the virus will be completely extinguished. If at the beginning of March and the first days of isolation, there were doubts about the justification of the measures that were taken, over time, people realize more and more that nothing is over yet and that we will continue to live with this virus.

Given the fact that the summer is coming to an end, that pupils are expected to go to school, college students to come to dormitories and colleges, the fear of the corona virus is increasingly present in the majority of the population, regardless of age.

Therefore, a study was conducted to determine whether there are differences in terms of the age of the population classified into the appropriate age groups and fear of coronavirus, as well as to assess whether there is an interdependence of different modalities of these characteristics.

1. Literature review

Below is an overview of the most cited papers in which the authors focus on the fear in people around the world of the new corona virus.

Reznik and others (2020) focus their work on the fear of disease caused by the new corona virus (COVID-19). According to the authors, COVID-19 presents one of the main sources of fear, stress and, generally

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speaking, poor mental health of people worldwide. The authors conducted a research on sample of 850 young people, men and women from Russia and Belarus. Most of the respondents belong to the student population. Research results point to the conclusion that the respondents from Russia show a higher degree of fear of the COVID-19 disease, compared to the respondents from Belarus.

Satici and others (2020) explore the impact of fear of COVID-19 disease with psychological stress and life satisfaction. Research was conducted in Turkey. Sample included 1304 respondents from 75 cities in Turkey. The study concludes that there is a linear relationship between fear of COVID-19 disease on the one hand, and psychological stress and life satisfaction on the other. Fear of illness is positively linearly associated with stress, fear, and feelings of depression in respondents. Authors also conclude that there is a negative linear relationship between fear of disease and life satisfaction.

Authors Alyami and others (2020) focus of their work put on the psychometric evaluation of fear of COVID-19 among the population of Saudi Arabia. Authors adapt the FCV-19S questionnaire, which is used worldwide to examine the fear of disease caused by the new coronavirus, and on a sample of 693 subjects, they came to a conclusion that there is a significant positive correlation between fear of disease on the one hand, and fear and depression on the other.

Ornell and others (2020) investigate the phenomenon of "pandemic fear" caused by the onset of COVID-19 disease. The authors, among other things, consider the behavior of health workers, scientists and managers in a pandemic. In this situation, where the above-mentioned actors face decision-making situations in different conditions than "normal", various psychological and psychiatric implications arise, which are not typical in normal circumstances. The number of people who have problems of a psychological nature, which are caused by a pandemic, exceeds the number of people who suffer from the consequences of infection with the new corona virus.

Fitzpatrick, Harris, and Drawve (2020) write about the impact of fear of COVID-19 disease on the mental health consequences in America. The data needed for the survey were collected on a sample of 10,368 respondents living across the United States. Results of the research suggest that the subjects are generally afraid of the new corona virus (score almost 7 on a scale of up to 10). Fear is most prevalent in the regions with the highest number of COVID-19 cases. There are also significant differences in the perception of fear of disease when observing demographic groups (women, Asians, Hispanics, foreigners and families with children). In addition to the perception of fear, respondents from these demographic groups also differ in their assessment of the consequences of a pandemic on mental health. Over 25% of respondents answered that they have problems with anxiety.

Pakpour and Griffiths (2020) focus of their work put on the role of fear of COVID-19 disease in encouraging preventive behavior of the population. According to the authors, one of the consequences of the pandemic is fear. Fear as a consequence of a pandemic is a prerequisite for creating guidelines for the behavior of individuals in society. It is necessary to perceive the level of fear within different social groups determined on basis of socio-demographic variables and psychological factors, in order to know in what way to address a certain population regarding the implementation of preventive measures for protection against coronavirus.

Ahorsu and others (2020) investigate the occurrence of fear, worry, and anxiety caused by a new corona virus pandemic. Research sample includes 717 people from the territory of Iran. Authors primarily want to investigate whether the FCV-19S scale is reliable for quantifying fear caused by a pandemic. The conclusion of the research is that the mentioned seven-point scale is reliable, valid and robust, and that as such it can be used for research that wants to quantify fear, but also the consequences for mental health caused by a pandemic.

Schimmenti, Billieux and Starčević (2020) discuss four types of fear that appear as a result of a pandemic caused by a new corona virus. First, fear of another person / fear for oneself, second, fear of others who are emotionally attached / fear for others who are emotionally attached, third, fear of ignorance / fear of knowledge, and, fourth, fear of taking action / fear of not taking action. According to the authors, improving the psychological health of individuals is vital for strengthening the society.

Lynn (2020) writes about the social reaction caused by the appearance of a new corona virus. As the pandemic is spreading, namely, as the number of covid patients grows, so does the degree of fear and concern among the world's population. Fear of people in whose state epidemic is raging is visible in all parts of the world. In this way, the author concludes that fear and stigmatization lead to negative consequences, which are reflected in the impossibility of implementing measures to protect the population.

Bitan and others (2020) investigate aspects of the COVID-19 disease fear scale (FCV-19S), and its psychometric characteristics, reliability, and validity in the Israeli population. For the purposes of the research, authors use a sample of 639 respondents, who answer the questions from the questionnaire regarding anxiety, depression and stress caused by the fear of a new coronavirus. The research concludes that there is a positive relationship between fear of COVID-19 and gender, socio-demographic status, presence of chronic disease, risk group and the fact that respondents had family members who had died from a disease caused by a new coronavirus. The results of the research also point to the conclusion that the FCV-19S scale has good performance in measuring psychometric variables, and that it can be successfully applied in studies examining the impact of a pandemic on the mental health of the population.

2. Research methodology

In the period from June to August 2020, a survey was conducted on a total of 160 inhabitants from the urban and rural area of the Brcko District of Bosnia and Herzegovina with whom this topic was discussed, after which data were obtained on whether and how many people of different age groups are afraid of coronavirus.

The survey included people who were available at a given time and who were willing to talk. Among the respondents were: high school students, college students, work colleagues, relatives, friends, as well as casual interlocutors with whom the pandemic and fear of the coronavirus were discussed. Having in mind the way in which the data were collected, this is a non-random sample, which by its nature is suitable, that is, fitting or convenient. Therefore, the results of the research refer only to the observed group of respondents and cannot be generalized to the total population.

Two characteristics were observed: age group of subjects and fear of coronavirus. For the purposes of the research, the respondents were grouped into four age groups: the first group: young and younger middle-aged (from 15 to 29 years), the second group: middle-aged (from 30 to 49 years), the third group: older middle-aged (from 50 to 64 years, and the fourth group: older (65 years and older). Fear of coronavirus criteria was observed through four modalities of response: very afraid, somewhat afraid, not very afraid, not afraid at all. After gathering the answers, the data are sorted by age groups of the respondents and modalities of observed traits and are shown in the contingency table.

Data were analyzed using descriptive statistics methods, as well as using a nonparametric Hi-square test of independent features, based on contingency table analysis. Excel was used for graphical display, while data processing for the purposes of contingency table analysis was done in the 3BStat program.

3. Analysis of data on the age of respondents and fear of coronavirus

Differences in terms of age of respondents by age groups and fear of coronavirus were observed on absolute and relative data and using a graphical representation.

Table 1 provides data on whether and how much respondents, by age groups, are afraid of coronavirus.

Table 1: Data on age groups of subjects and fear of coronavirus

Age group/ Fear of coronavirus	Very afraid	Somewhat afraid	Not very afraid	Not afraid at all	Total
Young and younger middle-aged	6	9	10	15	**40**
Middle-aged	11	12	11	6	**40**
Older middle-aged	19	9	7	5	**40**
Older	19	10	6	5	**40**
Total	**55**	**40**	**34**	**31**	**160**

Source: Author's calculation.

Of the total number of respondents, most are those who are very afraid (55 of them or 34.4%). As expected, most of those who are very afraid are among the respondents older than 50 years of age, and the least among those younger than 30. 40 respondents are somewhat afraid, which is a quarter of the

total number. 34 of them are not very afraid (or 21.2%), while 31 (19.4%) are not afraid at all. Among those who are not afraid at all, most of the respondents are under 30, and the least are over 50.

Table 2 provides relative data on the fear of coronavirus and the age of the respondents, which only completes the earlier assessments of differences by age groups of respondents.

Table 2: Data on age groups of subjects and fear of coronavirus (in%)

Age group /Fear of coronavirus	Very afraid	Somewhat afraid	Not very afraid	Not afraid at all
Young and younger middle-aged	15,0	22,5	25,0	37,5
Middle-aged	27,5	30,0	27,5	15,0
Older middle-aged	47,5	22,5	17,5	12,5
Older	47,5	25,0	15,0	12,5
Total	**34,4**	**25,0**	**21,2**	**19,4**

Source: Author's calculation.

A graphical representation of relative data on age groups of subjects and fear of coronavirus is given in Figure 1.

Figure 1: Age groups of subjects and fear of coronavirus
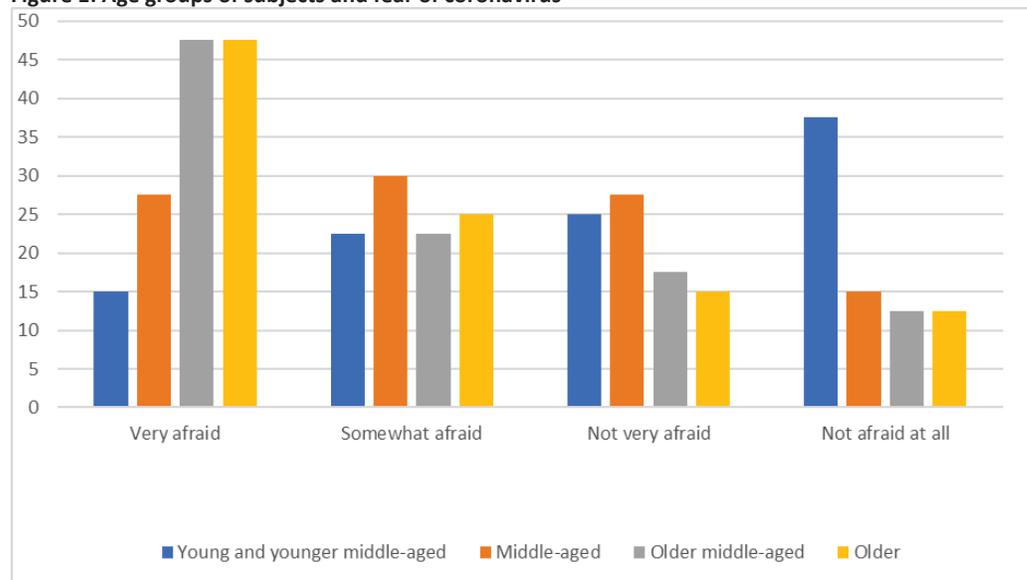
Source: Author's calculations.

The different participation of age groups in the assessment of fear of coronavirus can be seen even better by observing the attitudes of respondents grouped in only two modalities: they are afraid (very or little) and not afraid (much or not at all). Of the total number of respondents, 90 of them (or 59.4%) are afraid of the corona virus (very or somewhat), while 65 or 40.6% are not afraid (much or not at all). The youngest group of respondents, aged between 15 and 29, makes up 37.5% of all respondents who are afraid, while in that group there are 62.5% of those who are not afraid of the virus. The opposite situation is in the oldest group of respondents, those aged 65 and over, who make up 72.5% of all respondents who are afraid, or 27.5% of those who are not afraid of the coronavirus.

See data in Table 3.

Table 3: Descriptive statistics

Age group /Fear of coronavirus	Afraid (very or somewhat)	%	Not afraid (much or at all)	%
Young and younger middle-aged	15	37,5	25	62,5
Middle-aged	23	57,5	17	42,5
Older middle-aged	28	70,0	12	30,0
Older	29	72,5	11	27,5
Total	95	59.4	65	40,6

Source: Author's calculations.

Given that the descriptive analysis of the data showed that there are appropriate differences in terms of fear of coronavirus by age groups, a more detailed analysis and investigation of the possible existence of interdependence with these characteristics was conducted. The data obtained in this way refer to the attributive (descriptive or categorical) characteristics of the respondents, which were measured on a nominal measurement scale and shown in the contingency table. Consequently, a nonparametric Chi-square test of the independence of two features, based on the analysis of the contingency table, was used in the interdependence analysis. There is a null hypothesis that the observed features are independent of each other. The statistical program 3BStat was used for data processing.

The processing results and output from the 3BStat program are given as follows (Table 4).

Table 4: Research results

X2 square independence test of two variables	
H0: The variable given by columns and the variable given by rows are INDEPENDENT	
H1: The variable given by columns and the variable given by rows are DEPENDENT	
Variables	
	Columns were used: Very afraid, Somewhat afraid, Not very afraid, Not afraid at all
TESTING RESULTS	
The hi square statistic is: 4.37 + 0.55 + 2 + 2 + 0.1 + 0.4 + 0.1 + 0 + 0.26 + 0.74 +	
0.26 + 0.74 + 6.78 + 0.4 + 0.98 + 0.98 = 20.6563	
Freedom degree number v:	9
Contingency ratio C:	0,338
p-value	p-value = 0,014
Conclusion:	Ho is rejected with a risk of 0.05. We conclude that the variables are DEPENDENT.

Source: Author's calculations.

Test results show that, at the level of significance of 0.05, the null hypothesis or the hypothesis about the independence of the mentioned characteristics, is discarded, and that the alternative hypothesis is accepted, that the characteristics are interdependent. In order to assess the level of dependence of the observed characteristics, Pearson's contingency coefficient was calculated (Lovrić, M., Komić, J., Stević, S. 2017), which is 0.338. Considering that the stated coefficient in each specific case depends on the number of rows and columns in the contingency table, the corrected contingency coefficient was calculated, which is 0.391. Based on that, it can be concluded that there is a connection between the fear of coronavirus and the age of the respondents, but that it is not expressed. The same conclusion is reached by applying Kramer's contingency coefficient (Lovrić, M., Komić, J., Stević, S. 2017), which is 0.2075.

Since a non-random sample was used in the study, the results cannot be generalized to the entire population from which the sample was selected. Therefore, the conclusion about the interdependence of fear of coronavirus and age of the respondents is valid only for the observed group of respondents.

Conclusion

As expected, the results of the research showed that the fear of coronavirus is also present among the respondents from the observed group. Of the total number of respondents, most are those who are very afraid. Among them, most respondents are older than 50, and the least from the group younger than 30. A quarter of the total number of respondents are somewhat afraid. 21.2% are not afraid of many of them, while 19.4% are not afraid of them at all. As could be expected, among those who are not afraid at all, most of the respondents are under 30, and the least are over 50.

If we look at the attitudes of respondents grouped in only two modalities: they are afraid (very or little) and not afraid (much or not at all), it can be seen that of the total number of respondents, 59.4% are afraid of coronavirus (very or somewhat), while 40.6% are not afraid (much or not at all). The youngest respondents, aged between 15 and 29, make up 37.5% of all respondents who are afraid, while among them are 62.5% of those who are not afraid of the virus. The opposite is true in the oldest group of respondents, who make up 72.5% of all respondents who are afraid, as well as 27.5% of those who are not afraid of the coronavirus.

The observed differences in terms of fear of coronavirus by individual age groups of respondents raised the question: Is there a connection between these two characteristics, observed through their modalities? The study of the interdependence of certain age groups of respondents and different modalities of fear of coronavirus, showed that the connection exists, but that it is not expressed.

A suitable, fitting or appropriate sample was used in the research, which is why the stated results are valid only for the observed group of respondents and cannot be generalized to the entire population of the Brcko District of Bosnia and Herzegovina.

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