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COMMENTARY

Psychosocial stress and risk assessment during the COVID-19 pandemic: Some preliminary thoughts

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Abstract: Human life and activities are associated with risk, as risk is inherent in all forms of human existence and action. Risk is regarded as a phenomenological variable considering how people perceive it, especially during a crisis they experience. This paper discusses the characteristics of human behavior in a crisis, with an emphasis on hazard perception and risk assessment, for the purpose of understanding people's decisions and adaptation before, during, and after a crisis. The discussion focuses on the ongoing COVID-19 global pandemic.

Keywords: Psychosocial stress; Risk assessment; Health crisis; COVID-19; Serbia

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1. Introduction

Terms such as stress, crisis, and risk are nowadays frequently used in the scientific literature as well as in professional communication, especially now during the global coronavirus disease 2019 (COVID-19) pandemic. These terms best describe human behavior in emergencies and extreme situations. When an individual is faced with sudden, unknown, and dangerous circumstances, the first thing to emerge is a state of shock and mental and emotional inhibition, manifesting as narrowed consciousness, and sometimes even a state of catalepsy, which profoundly affects the biological sense of survival of the afflicted individual (Čabarkapa, 2016). Such responses are commonly associated with wars, severe medical conditions or injuries, earthquakes, or other "no-escape" situations due to natural or technological disasters (Seneviratne, Baldry and Pathirage, 2010).

In the majority of other stressful situations, both privately and professionally, especially in the case of psychosocial stressors, which manifest as complicated and challenging situations, a certain level of cognitive ability is retained in the earliest stage of shock and disbelief, which is why a person is able to consciously and unconsciously question what is happening and how it affects them (Biggs, Brough and Drummond, 2017). This provides an opportunity to use some of the active strategies to overcome stress, which people most often do instead of succumbing to their imminent fate of surrender and death.

The crisis caused by the uncontrolled spreading of the coronavirus has been regarded as a form of biological war against an unknown enemy, which resulted in an extensive variety of measures undertaken to combat it. The perception of such danger caused mass worldwide stress, fear, and anxiety, which suggests that there is also a fear pandemic to consider (Vujčić, Safiye, Milikić, *et al.*, 2021). The crisis has affected all social strata, and no one has been spared from the effects.

The subject matter of this paper involves description and determination of individual behavior and risk perception when facing danger and crises. The aim of the paper is to review the specific nature and complexity of risk assessment during a crisis

accompanied by stress, particularly in the case of current COVID-19 global pandemic, with an empirical focus on Serbia.

2. Psychosocial Stress and Risk Assessment

It is a well-known fact in psychology that there is a significant difference between the actual objective state and the subjective perception of objects, events, or situations, especially when there is insufficient information or when consciousness is in an altered state, for instance under extreme stress (Čabarkapa, 2016). Under the influence of thus altered perception and a series of mental, emotional, and motivational factors affecting information processing, a wide discrepancy may arise between the objectively present risk and the subjectively perceived and assessed risk (Seneviratne, Baldry and Pathirage, 2010). This paper will not discuss all the theories, factors, and types of risk associated with different areas of people's everyday life and activity, but will refer to risk in terms of negative effects on the safety, health, and well-being of individuals, groups, or society in general within the context of stress and crisis. Hazard perception and risk assessment are an important cognitive variable for the understanding of people's decisions and their adaptation before, during, and after hazardous events (Weber, 2001; White, 1974). The previous research regarding this topic indicates that there are considerable differences in risk assessments performed by technical experts, the media and the general public, and individuals of different age, gender, and culture (Seneviratne, Baldry and Pathirage, 2010).

Important psychological determinants of perceived risk include fear, exposure, and familiarity of risks (Božović, Mihajlović and Živković, 2019). Fear refers to the possibility of suffering, which is a clear emotional and cognitive indicator of what people intuitively think of risk. Exposure refers to the actual exposure of people to hazards. Familiarity pertains to the previous experience with and knowledge about a risk. Experience gained during a disaster event significantly alters personal hazard perception as well as individual opinions and behaviors in terms of preparedness for facing danger. Memory of hazardous events and disasters usually leads to increased risk perception (Božović, Mihajlović and Živković, 2019).

Of the three said factors, fear impacts human risk perception the most. When people face danger situations, their anxiety or fear of exposure to risk impacts their behavior (Mun, Moon, Kim, *et al.*, 2021). In addition to fear, individual risk perception and assessment also depend on the *type of risk* (voluntary versus involuntary), *individual characteristics* (specific personal traits, age, level of education, income group, etc.), the *nature of consequences* (immediate versus delayed), and the *ability to control risk*. People are prone to assessing risk in a multifaceted but subjective way, which is why it is important to communicate about risk – to exchange risk information interactively among risk assessors, persons in charge, the media, stakeholders, and the broader public (Brown, 2014).

Risk perception is important in determining health protective behavior during the crisis caused by the COVID-19 pandemic (Mun, Moon, Kim, *et al.*, 2021). Public perception and social construction of risks and threats are important for analyzing, assessing, and responding to crisis situations (Borodzicz, 2005; Beck, 1992; Mun, Moon, Kim, *et al.*, 2021). Strategies and methods are being developed for the design of national or regional risk maps, with clear indications of the effects, including not only safety and health effects but also economic and social costs. Such assessments and scenarios should be instituted beforehand and used proactively to draw an adequate response from the community and hold proper political debates on risk acceptance (Borodzicz, 2005).

To explain why different people assess different risks differently, scientists proposed three paradigms: *Axiomatic*, *sociocultural*, and *psychometric* (Weber, 2001; White, 1974). Studies dealing with the axiomatic paradigm focused on the general biological and psychological principles and on the way people subjectively transform the objective information about the risk. The sociocultural paradigm is prevalently focused on culture, rather than on individual psychology, as the explanation of differences in risk decision-making. Anthropologists and sociologists claim that risk perception is rooted in cultural and social factors and that culture is essential to explaining the differences in risk perception. Studies examining the psychometric paradigm have shown that people's emotional reactions to risk events or behaviors affect their assessment of the degree of risk, as the assessment often goes beyond the objective consequences, claiming that both experts and laypersons fully perpetuate false representations of several aspects of danger (Weber, 2001; White, 1974). Researchers identified the most common systemic biases that could justify the misconceptions concerning risk. Such biases resulted from a set of general inherent rules observed by individuals in everyday situations. These rules are technically called heuristics, and their purpose is to make complex mental tasks as simple as possible. Systemic biases that could justify the misconceptions about risk include overconfidence, desire for safety, and the conviction that something *will never happen to me/us* (Witte, Meyer, and Martell, 2001). A common misconception is the idea that, when an unfortunate event or accident occurs, it is less likely to occur for a long time afterward. People are prone to assessing

risk in a multifaceted but subjective way, which is why it is important to communicate about risk – to exchange risk information interactively among risk assessors, persons in charge, the media, stakeholders, and the broader public (Witte, Meyer, and Martell*,* 2001).

3. The Specificity of the Global Health Crisis caused by the Current COVID-19 Pandemic

The appearance of the coronavirus strain (SARS-CoV-2) that causes the COVID-19, which led to a pandemic by affecting almost every world country, has resulted in collective stress and a unique crisis in Serbia and the rest of the world, changing the routine of personal and family life and suspending many types of work, trade, and communication (Vujčić, Safiye, Milikić, *et al.*, 2021).

When the pandemic was officially declared, it appears that many countries were underprepared for a prompt and decisive response to the psychosocial stress and the crisis. The risk of an epidemic had initially been underestimated in most countries, but when the WHO declared a pandemic, a panic-driven race ensued to find the necessary assets, resources, and methods to control the emergent disease. Since this is a case of a biological hazard that also poses a health risk for the entire human population – not just the directly afflicted countries, decision-making regarding control measures has been entrusted to health experts – epidemiologists, virologists, infectologists, and other medical specialists. Serbia, as well as most other countries, arrived at a political and general social consensus that it is best to allow the experts to make decisions regarding risk assessment and to recommend measures for dealing with the COVID-19 crisis. Although government measures were essential for containing the spread of the COVID-19, the disrupting of a normal life during the state of emergency has proven to be a serious threat to the mental health and well-being of the general population, students and especially health care workers, as shown in the previous studies (Vujčić, Safiye, Milikić, *et al.*, 2021; Safiye and Vukčević, 2020; Safiye, Vukčević and Čabarkapa, 2021). On March 31, 2020, "Telekom," the largest mobile service provider in Serbia, sent the following text message to all users: "The situation is dramatic. We are approaching the scenarios seen in Italy and Spain. Please, stay home," which caused additional fear and increased the perception of risk among citizens (Vujčić, Safiye, Milikić, *et al.*, 2021).

However, risk assessment is not as simple as one might initially assume, especially when one considers all aspects of risk – types, levels, and consequences. Experts are expected to formulate clear, unequivocal, and depoliticized conclusions, on the basis of which public policies are then formed. When a situation is complex and it threatens to have serious consequences for the individuals and the society, the question arises if epidemiologists are currently the only ones who are competent to develop public policies and what is currently understood as professional expertise, which is called on by the political decision-makers. Does professional expertise also involve economists, psychologists, sociologists, statisticians, and other experts, who could form a multidisciplinary team and provide answers on crisis communication strategies, change management, and assessments of health, psychological, and economic losses in the different ways public policies are carried out?

Complex and dynamic states necessitate a systemic, active, contextual, and multidisciplinary approach instead of the bureaucratic implementation of previous practices. Occasionally, previous good practice can prove successful in dealing with certain issues, for instance in containing infectious diseases in China and in Serbia, but it became clear that in every crisis, the available information and resources need to be adjusted to the local context, which should be accompanied by a vigorous approach and the preparedness to take certain risks. Therefore, in addition to public policy makers, crisis management teams and expert teams should also include top experts from different fields, who could ensure that the dynamic and complex processes are dealt with vigorously and according to the best available data. Comparative studies of the effects of different strategies in different countries, focusing on the advantages and disadvantages of different models currently in use (e.g., what can be learned from China, Germany, Sweden, Italy, South Korea, Russia, the USA, or Singapore), can prove useful, but must not be simply copied and applied to the current circumstances in Serbia. The principle of complexity and vigorousness in assessing risk and combating the pandemic would further involve simultaneous collection, monitoring, and interpretation of data in terms of economic, psychological, social, and other societal effects, in addition to analyzing statistical indicators of health and taking medical measures to save every life.

Analysis of the current state and scenario in Serbia's fight against COVID-19 has generated several questions: What is the best solution based on all currently available data; is the 20th century-based epidemiology and the manner of handling previous epidemics (the plague, Spanish flu, smallpox, anthrax, swine influenza, and avian influenza) really the best way to handle a virus with a mortality rate of about 1%; does isolation or mandatory hospitalization of asymptomatic cases make sense; how does a curfew contribute to the prevention of virus spread; and does the fear caused by insufficient knowledge about the virus justify all the measures taken?

It is reasonable to accept that the issue can be resolved using previously successful strategies. Alternatively, simple solutions can be offered to appease the populace or more drastic measures can be taken as if dealing with an extremely infectious and dangerous disease. Nevertheless, it is difficult to provide definite answers to the above questions that could validate simple strategies. First of all, decision-makers have to consider the assessment of the type and level of risk to which people are exposed as individuals, a group, or the entire nation. In addition, successful strategies and individual measures rely on the consensus across all levels and careful involvement of all stakeholders. Ultimately, the question is whether citizens should be forced to behave in a specific way or whether they should be allowed to choose such behavior, either because they trust the authority that imposes it or because they personally think it makes sense. It is well known that fear of repression can be a powerful tool for ensuring social obedience, but the patterns of behavior established this way cannot be sustained in the long run. If a single solution is implemented with strict persistence to minimize risk and avoid fatalities, individual solution strategies may emerge based on subjective risk assessment, which would, in turn, disrupt the established social structure. Likewise, the decision-makers have to take the time factor of the crisis and risk into account to be able to vigorously and flexibly adapt measures and solutions.

In times of collective stress and societal crisis, the characteristics of national culture should not be disregarded. Some individuals and communities have a highly pronounced need to avoid danger and uncertainty, so during a crisis they tend to adhere to their rigid beliefs and behavior, to be less tolerant toward innovations, and to feel an emotional need for strict rules. Under the current circumstances, such a trait of national culture has proven favorable for strategies that rely on enforcement, obedience, and preservation of order and control in some countries (e.g., South Korea, China, or Germany), whereas in other countries (e.g., Italy, Spain, France, and Serbia), it was difficult to implement the social measures of control and enforcement. It is true that specific regions and social strata were more ready to act obediently and to accept control, while others displayed a more liberal attitude and broke the rules of conduct during a state of emergency. All this ultimately boils down to the characteristics of risk management, the level of psychosocial stress, and the individual and social risk assessment. In new and unfamiliar situations, it is always beneficial to use well-established knowledge and skills, especially when they are certain to produce favorable results; however, in cases involving a high degree of uncertainty, anxiety, and stress, effective risk management is based on the preparedness to do something that others might find impossible.

4. Conclusions

At the turn of the 21st century, the balance of caring for human well-being and the quality of life shifted, with safety issues becoming more important, so risk assessment became a legal obligation when conducting numerous activities in many countries. Beck described the efforts that the stakeholders – governments, corporations, and others – expended to manage risk perception and risk management policies (Beck, 1992). If the natural disasters are accompanied by technological and anthropogenic crises and disasters, such as climate change, urban overpopulation, drinking water shortage in many parts of the world, and the risk of new diseases and epidemics like the ongoing COVID-19 pandemic which had destructive effects on every aspect of people's lives, then it is reasonable to assume that the remainder of the 21st century will be ridden with ever-emerging crises having ever more serious consequences, while the mechanisms in place used for prevention, preparedness, control, and response will fail to keep up. All the aforementioned factors impose an urgent need to establish new mechanisms of risk control both globally and nationally, as the crisis caused by the COVID-19 pandemic is still ongoing.

Conflicts of Interest

The authors declare no conflicts of interest.

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Authors' Contributions

All authors participated in the preparation and writing of the paper and meet all the criteria for authorship. Conceptualization: Milanko Čabarkapa and Teodora Safiye; writing – original draft preparation: Teodora Safiye and Milanko Čabarkapa; writing – review and editing: Medo Gutić; visualization: Milanko Čabarkapa, Teodora Safiye and Medo Gutić; and supervision: Medo Gutić. All authors have read and agreed to the published version of the manuscript.

Ethical Approval

Not applicable as this paper does not involve human subjects.

Availability of Supporting Data

Data utilized to this paper are from secondary sources and available to the public.

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