RED CROSS OF SERBIA – COVID -19 RESPONSE

# COVID – 19 immunization process in Serbia - Public perception survey

*Report on the findings*

# Contents

# 1. Introduction

The main purpose of this report is to present the results of the public perception survey on COVID-19 and the COVID – 19 immunization process in Serbia. The focus was to obtain the opinions, attitudes, and knowledge of young people, mostly university students, as they are identified as the group that was least represented in the immunization process. According to the data from the public health institutions in Serbia, up to July 2021, the smallest percentage of the vaccinated population was youth aged 18 to 24, only 15%, which was seen as a problem in containing the pandemic.

This survey investigated whether the general attitude of the young population in Serbia, age 18-30, towards COVID -19 and the respective immunization process was built based on information and knowledge obtained through the media and/or social networks or other scientific sources. The areas analysed were:

- ⇒ Level of awareness about COVID-19 and the immunization process.
- ⇒ Knowledge of the immunization process and the vaccination status of the target group.
- ⇒ Attitudes towards vaccination.
- ⇒ Monitoring noises/rumours about vaccines.
- ⇒ Sources of information.

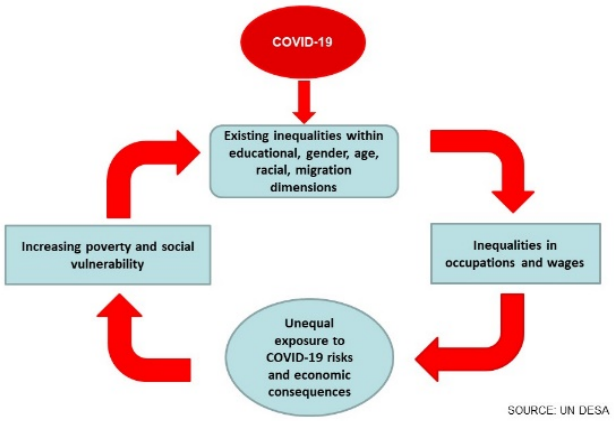
This report will further present the background problem and the context of the pandemic and the response of the state and other relevant actors including the Red Cross of Serbia, which could be linked with influencing opinions and attitudes of the young population on COVID – 19 immunization and behaviours that are contributing to the containment of the spreading of the virus.

The background problem analyses together with the review of the relevant literature on how attitudes, opinions and behaviour are being influenced and formed with young people, especially during emergencies, will provide reasoning for developing and improving the approaches to working with youth during public health emergencies and how media and specifically social media could be used to reach young people in future Red Cross of Serbia responses to public health emergencies.

## 1.1 Problem background

The COVID – 19 pandemic represents a massive global crisis that is more than a public health crisis but is rather affecting societies and economies at its core. The pandemic globally resulted in millions of deaths, poorer physical and mental health, lockdowns, and impoverished economies. The consequences of the COVID -19 pandemic are visible in the decline of the overall living condition of vulnerable groups (UN, 2020), and its impact is further expected. The pandemic is exacerbating and depending on the pre-existing inequalities, exposing vulnerabilities in a social, political, and economic system, which are in turn amplifying its impact (UN, 2020).

COVID – 19 and existing inequalities




The first case of SARS-COV-2 virus infection in the Republic of Serbia was registered on March 6, 2020. The state's answer was to prepare all structures for the epidemic response and to contain the spread of the infection by introducing measures that will limit contacts. The Republic of Serbia declared a state of

emergency on March 15 and with additional measures restricted the gatherings and movements of citizens. Public gatherings were prohibited, movement restricted at certain intervals, people over the age of 65 were given 3 hours a week for purchasing groceries, and public transport was suspended. The state of emergency has been lifted at the beginning of May 2020 following the relaxation of the movement and gathering limitation and with measures related to protective equipment in public places. The protective measures and limitations in gathering indoors and outdoors were again put in force from the end of June 2020 once the number of infected people rose. The Republic of Serbia has formed two crisis headquarters for coordinating the COVID-19 response and to eliminate/mitigate the consequences on the economy.
The Belgrade Centre for Security Policy analysed the overall impact of the coronavirus pandemic in Serbia in 2020 through 5 phases (BCSP, 2020):

1. The first wave of the pandemic was followed by the introduction of a state of emergency and the application of rigorous measures such as a movement ban for persons over 65 years of age and the introduction of a curfew (March-May 2020).
2. Improved situation with the pandemic and drastic withdrawal of all restrictive measures.
3. Significant increase in the number of infected people at the end of June 2020, the second wave of the pandemic.
4. Peaceful epidemiological situation, with a very small number of infected people, without restrictive measures (August, September 2020).
5. The third wave of the pandemic, with a record number of infected, hospitalized, and dead persons, with mild restrictive measures (October, November 2020).

A similar trend continued in 2021 and 2022 when Serbia both faced a significant increase in the number of infected people and the mild pandemic impact on people's health, with low numbers of infected or deceased. A record number of new cases daily was recorded in January 2022 with 19,901 cases of infected people, while a steady decline has been recorded from April/May to August 2022.
As of December 21, 2022, the number of newly infected persons with the coronavirus is constantly increasing, with an average of 868 new infections reported daily. Since the beginning of the pandemic, 2,436,376 infections and 17,477 deaths related to the coronavirus have been reported in the country.

COVID-19 has triggered an unprecedented global crisis that has caused an interruption or reversal of the improvements achieved in the last decade in the fields of poverty reduction and social protection. The pandemic has also caused economic changes that threaten to push the world into recession. International experts in cooperation with the World Bank estimated that around 49 million people are in extreme poverty due to the consequences of the COVID-19 pandemic. The pandemic has caused global poverty to rise for the first time since 1998 (SIPRU, 2020). Projections made during 2020 indicated that global poverty can be expected to grow from 632 million to 635 million people living on less than $1.9 daily (World Bank, 2020).

During the COVID-19 epidemic, households whose members earned income in the informal economy were particularly at risk of poverty. Among these people, the largest number are people aged 30 to 44, they usually have a secondary education, and predominantly live in urban areas in households with usually 4 members in total and 2 dependent members (UNHR, SIPRU, SDC, 2020). Further analysis shows that 50% of households with children experienced a decrease in income during the crisis, paralleled by an increase in unplanned expenses during that period, which sometimes amounted to a quarter of the monthly income (UNICEF, 2020).

In 2020, the World Bank estimated that depending on the duration of the crisis caused by the coronavirus, 125,000 to 327,000 citizens could fall into poverty due to the economic shock. The estimates also indicated that poverty in Serbia would increase by 2-4 percentage points, putting it at the level of the year 2016/2017. Indications were made, that during the year 2020, the share of the population considered at risk will increase from around 31% to 33-35%. To date, these projections have not been confirmed by officially published data.

During the pandemic, the Republic of Serbia did not increase the adequacy or coverage of programs aimed at the poorest and most vulnerable parts of the population. The measures taken by the government to reduce the negative effects of the crisis caused by the COVID-19 pandemic did not consider the (additional) vulnerability of already vulnerable groups (UNHR, SIPRU, SDC, 2020).

***COVID-19 immunization in Serbia***

The Republic of Serbia very quickly in the pandemic obtained vaccines for the mass immunization of citizens. Mass immunization started in January 2021. Four vaccines approved by the Agency for Medicines and Medical Devices of the Republic of Serbia were available to citizens, and individuals could make a choice on which to take based on their preferences, information, knowledge, and values. Those were Pfizer-BioNTech, Sinopharm, Sputnik V and Oxford/AstraZeneca vaccine.

The total number of doses of vaccines distributed until June 23rd 2022, is 8,534,688 of which citizens of Serbia received:

- 3.164.033 – first dose,
- 3,106,305 – second dose
- 1.868.327 – third dose.

As of July 2022, the total share of the population of Serbia that is fully vaccinated following the protocol (two doses) is 61.4% of the total population, while 1.10% is partially vaccinated.

Information about the importance, method, benefits, and consequences of the COVID-19 vaccines was intensively distributed through all communication channels, with the media playing a key role in information dissemination.

## 1.2 Role of the Red Cross of Serbia in COVID-19 response – overview of the results

The Red Cross of Serbia had, simultaneously as the state of emergency was declared, started with activities that were a direct response to the consequences of the coronavirus pandemic and respective measures that were put in force by the state.

The operation was conducted in three phases:

- Emergency phase included the period of the state of emergency (March 16 - May 10, 2020).
- Recovery phase (May 11, 2020 – December 31, 2021).
- Support to COVID – 19 vaccinations (January 1 – October 30, 2022).

The Red Cross of Serbia and 178 Red Cross branches have assisted more than a million individuals with different types of assistance:

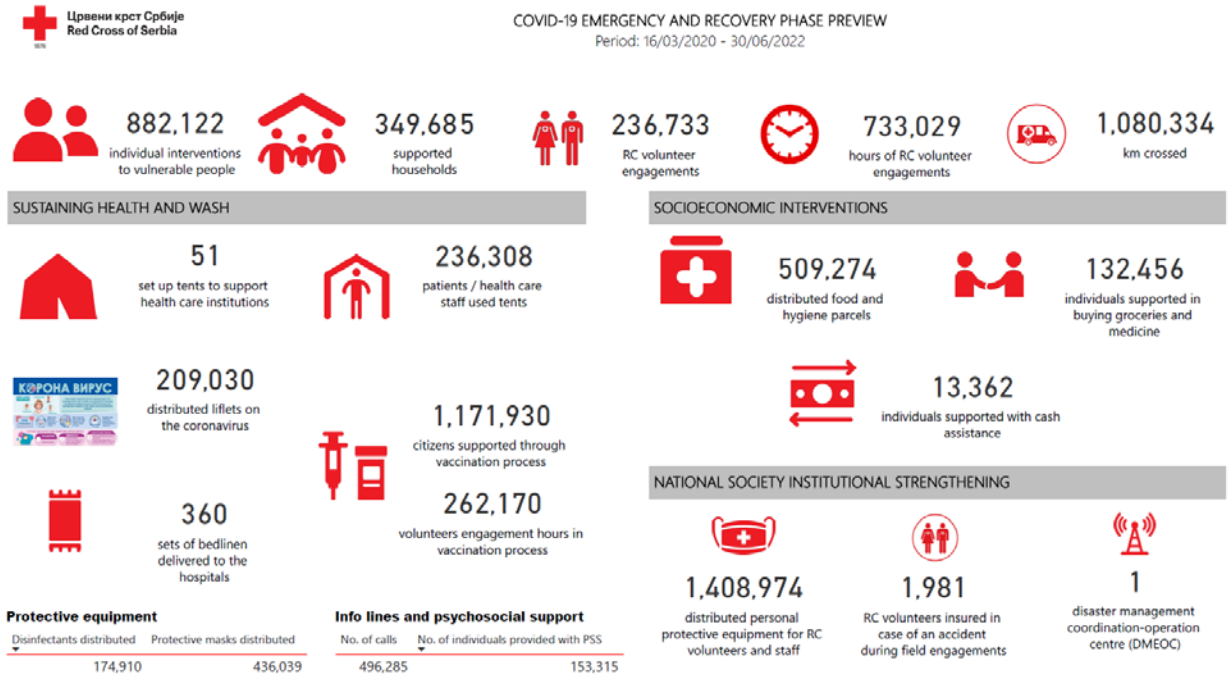
- Food and hygiene packages,
- Purchasing the most necessary groceries and medicines for senior citizens,
- Distribution of cash to the most impacted households,

- Supporting citizens in the immunization process,
- Supporting the healthcare system with beds, blankets, bedding, disinfectants, tents, and containers. Tents and containers were placed in front of healthcare institutions as additional space for waiting rooms, examination and triage of patients or space for healthcare workers.

According to the roles and activities implemented since the beginning of the COVID-19 crisis, the results of the Red Cross of Serbia can be presented through the following three areas:

a. Public health and WASH;
b. Reducing social-economic consequences of COVID-19 in local communities;
c. Strengthening the capacities of the Red Cross of Serbia.

A brief overview of the results is presented below.




*a. Public health and WASH*

- Red Cross Info lines: To provide assistance and relevant information to citizens 140 Red Cross branches had established **Info lines**. 496,285 calls were made with over 45,394 return calls to people needing support.
- 130 Red Cross branches organized and provided psychosocial support to citizens, volunteers and employees via telephone, SMS service (for people with hearing impairment) and internet platforms. An online platform for providing psychosocial support was developed.
- 172 Red Cross branches provided information on the risks of COVID-19, and advised on maintaining physical distance and proper use of personal protective equipment, hand washing and hygiene in general:
    - 103 Red Cross branches distributed more than 209,030 communication materials emphasizing preventive measures in local communities;
    - 436,039 protective masks were distributed;

  - 44 Red Cross branches provided support to citizens in the distribution of disinfectants at sites where storage tanks with disinfectants were installed. For that purpose, 8 tanks with a capacity of 1,500 litters were installed.
  - 174,910 people were supported with disinfectants;
- 29 Red Cross branches provided support to the health system by setting up and maintaining 51 tents for patient triage in hospitals and primary health centres. Through this, support was provided for 221,957 patients and healthcare personnel. Volunteers and employees were engaged in data processing with more than 6,023 working hours. The Red Cross of Serbia also procured and distributed 360 sets of bed linen to hospitals in Novi Pazar and Belgrade.
- 161 Red Cross branches supported the collection of more than 80,000 units of blood by organizing over 2,400 voluntary blood donation events only in 2020;
- 45 Red Cross branches supported the immunization process and directly assisted over 1,171,930 individuals. More specifically these activities included:
  - Motivating 19,985 people to be vaccinated;
  - Transporting 533 people to the vaccination site;
  - Supporting, at the vaccination site, 8,475 people with measuring body temperature, questionnaire filling, and disinfection;
  - After vaccination, Red Cross of Serbia personnel checked the health status of 1,457 persons;
  - First aid was provided to 585 persons at the vaccination site.

*b. Reducing social-economic consequences of COVID-19 in local communities*

- Needs assessment of vulnerable people has been carried out in 168 Red Cross branches which showed the urgent needs of people and the emergence of new vulnerable groups because of COVID – 19.
- Mobile volunteer teams were established in 158 Red Cross branches with the main task to support the citizens in obtaining food and medicine. Volunteers in mobile teams carried out 132,456 work orders.
- In total 415,574 food and hygiene parcels were packed by 123 Red Cross branches supporting local governance during the emergency phase.
- In total 509,274 food and hygiene parcels were distributed to vulnerable families, of which 126.864 was obtained through the support of the RCS HQ and the rest by local donations.
- Cash assistance for the most vulnerable families has been implemented thanks to the support of the SDC, UNICEF and IFRC.

*Table 1: Overview of cash assistance disbursement*

| **Donor** | **# of supported households** | **# of supported family members** | **The total amount of transferred cash assistance (RSD)** |
|---|---|---|---|
| IFRC | 946 | 2.838 | 4.057.560 |
| UNICEF | 2.549 | 10.206 | 69.619.191,03 |
| SDC | 1.045 | 2.905 | 15.528.700 |
| **TOTAL** | **4.540** | **15.949** | **89.205.451,03** |

*c.* Strengthening the capacities of the Red Cross of Serbia

The Red Cross of Serbia had at the very beginning of COVID – 19 crisis formed the Disaster Management Coordination – Operation Centre (Operation centre) to contribute to the coordination of the activities, communication with local branches and external partners, monitoring and collection of data and information. Furthermore, to contribute to the decrease of the risk of contagion and to ensure the continuity of the functioning of the RCS structure the Red Cross of Serbia HQ had developed the following:

- Instructions and guidelines for Red Cross branches on how to decrease the risk of COVID -19 contagion.
- Framework of recommended and standardized activities at the local level as a response to COVID – 19 crisis including instructions, and operational procedures.
- Plan for the implementation of measures to prevent the COVID-19 infection and its spread in the Red Cross of Serbia.
- Distributed 1.408.974 facial protective masks and gloves, and 44.969 disinfections.
- Secure the international medical insurance for 1,901 Red Cross volunteers

The Covid – 19 operation of the Red Cross of Serbia included 721 employees and 5,843 volunteers that had 733,029 hours of volunteering engagement and 538,931 hours of employee engagement. In total 1,080,344 km had been covered during the implementation of the activities. In terms of the coverage by the structured and harmonized activities directly responding to the COVID- 19 consequences in 178 Red Cross branches, this was the biggest operation of the Red Cross of Serbia so far.

## 1.3 Research question

The overall aim of this survey research is to get an insight into the attitudes of the youth between 18 to 30 on the COVID-19 vaccination, and how the information and reports found in media, the Internet and/or social media on COVID-19 and the vaccination process, influenced the forming of opinion and attitudes.
The areas covered by this survey are:

⇒ Level of awareness about COVID-19 and the immunization process;
⇒ Knowledge of the immunization process and the vaccination status of the target group;
⇒ Attitudes towards vaccination;
⇒ Monitoring noises/rumours about vaccines;
⇒ Sources of information.

Accordingly, the research question meant to be investigated and answered by this research is: *What are the sources of information mainly influencing the attitude of the population in Serbia aged 18 to 30 towards COVID – 19 vaccinations?*

## 1.4 Relevance of the research question

The intention of the person to get vaccinated, including COVID – 19 vaccines, is influenced by various factors which among others include:

- socio-demographic characteristics;
- individual beliefs and experiences;
- trust in the health care system
- safety of the vaccine and its components;
- vaccine side effect(s);
- the speed at which the vaccine is produced;
- not enough testing of the vaccine or proof that there was enough testing;
- not enough information;
- information available on the internet and social media;
- high exposure to negative information on a vaccine from media especially social media.

World Health Organization has declared the concept of “vaccine hesitancy“ as one of the ten biggest threats to global health (Godlee, F. as cited in Šiđanin, I.; Njegovan, B.R.; Sokolović, B., 2021). The available reports show that vaccine hesitance is worsened by the existence of social media, which has produced both positive and negative outcomes. Furthermore, research shows that social media have become a place where misinformation on COVID-19 is spread, and since they are the dominant source of information for most young people, that may further influence their choices and the decision to be vaccinated.
The COVID -19 pandemic had brought a rise in conspiracy theories, fake news and misinformation around the virus’s origin, treatment, and vaccine. In this context, it was hard for the public in general to distinguish scientific evidence and facts from less reliable sources of information. (J. J. Van Bavel et. Al, 2020). Social networks contributed to amplifying the spread of behaviour that are both harmful and beneficial during an epidemic, with the possibility to further spread this attitude to the network of friends and beyond (J. J. Van Bavel et. al, 2020), and add to the proliferation of fake news and/or misinformation with potentially dangerous consequences. Young people may be particularly susceptible to social influence on attitudes towards COVID – 19 vaccination considering the frequent use of social media and going online to seek medical information (Rideout et al., 2018 as cited in S. Sinclair, J. Agerstrom, 2021). For many citizens, especially young people mass media along with social networks/the Internet represent one of the most important sources of information on health problems. Thus, they can significantly influence the public's perception of media-relevant topics in the field of medicine, health, and health policy. However, more information does not mean more knowledge but can lead to more confusion or misinformation.
Besides information received through domestic media that influenced attitudes on the need for vaccination, foreign media and the drug agencies had a great influence on building the attitudes and opinions, which contributed to the decision of the individuals not to receive certain types of vaccines (Šiđanin, I.; Njegovan, B.R.; Sokolović, B. 2021, 9). There is an assumption that individuals with less favourable attitudes toward a COVID – 19 vaccination also consider that a virus is less threatening. However, the willingness of young adults to be vaccinated can positively affect the whole community (S. Sinclair, J. Agerstrom, 2021). In general, it has been shown that the greater the trust in the media and the health profession is the greater the chances are that an individual will agree to be vaccinated, which indicates the great responsibility that the media has in objective and accurate reporting that doesn’t cause panic and suspicion among citizens.

According to the available data from public health institutions, up to June 2021, the smallest percentage of vaccinated was among youth aged 18 to 24, only 15%, which is considered an obstacle in stopping the pandemic. The research on the attitudes towards COVID – 19 vaccination and the trust in the media information on vaccination, conducted in 2021, states that one of the reasons for the small percentage of vaccinated youth can be found in the doubts about the vaccine safety and efficiency, considering the speed and the technology of its production. The other main reasons were:

- ⇒ time flow, as an indicator of harmful consequences of the vaccine (28%)
- ⇒ mistrust in the quality of the vaccine (23.4%)
- ⇒ fear of side effects (13.7%)
- ⇒ distrust in the effectiveness of the vaccine (10.3%).

This eventually led to the consideration of the young person aged 25 as a COVID – 19 supercarrier: educated, nonvaccinated, does not respect the preventive measures such as physical distancing and wearing a protective mask (Šiđnin, I.; Njegovan, B.R.; Sokolović, B. 2021).
To further support the participation of youth one must have in mind that direct, non-sensationalist information from reliable sources, as well as information obtained through local media, generally increases vaccine acceptance and trust among people in general (Šiđanin, I., Njegovan, B.R., Sokolović, B. 2021).

# 2. Theoretical overview

This chapter aims to give an overview of the basic theories in the field of social identity, social influence and norms to provide context and support the understanding of the forming of and influencing the attitudes and behaviour of young people in an emergency and especially in a public health crisis. This will also add to concluding at the end of this report that could contribute to and further amplify the community work with youth and their active participation.

## 2.1 Social Influence Theory

Social Influence Theory explains how individuals adjust their behaviour to meet the demands of a social environment. Robert Gass explains that social influence involves intentional or unintentional efforts to change people's beliefs, attitudes, or behaviour (Gass, 2015). Intentional efforts are considered to be persuasion and it includes a degree of awareness on the part of the target audience, however, there are social influences that are considered to be inadvertent or accidental such as conformity, socialization, peer pressure, bystander effect, etc. It is considered that social influence results from a specific action such as a command or request, though, people also adjust or change their behaviour as a response to what they perceive other people are doing or thinking. Therefore, social influence operates through peripheral processing where the target audience is not aware of the influence attempt, which is often nongoal directed and with outcomes that can be inconsistent or unrelated to a communicator's goal (Gass, 2015,).
Social Influence Theory by Herbert Kelman proposes that the individual's attitudes, beliefs and behaviours are influenced by others through the processes of:

- ⇒ Compliance – individuals accept influence and adapt the behaviour for rewards or approval or to avoid punishment or disapproval. The social effect of accepting the influence is seen in the satisfaction coming from compliance.
- ⇒ Identification – individuals adopt the induced behaviour to create or maintain the desired relationship with another group or individual and the satisfaction comes from the "*act of conforming*".
- ⇒ Internalization – individuals accept influence after perceiving the content (the opinion and the action of others) of the induced behaviour as rewarding. The induced behaviour is accepted since it is by one's own value system. The satisfaction in this case occurs due to *"the content of the new behaviour"*. For developing desired behaviour internalizing change is crucial, since the adopted behaviour or accepted influence is following one's value system and not because there is a desire to conform to the norms.

Conformity is the most common form of social influence which shows that individuals alter their behaviour to be accepted by the groups, impress other(s), or gain a sense of belonging. A key driver of behavioural change is the social influence of others where humans as social co-operators understand and interpret behavioural change as a collective problem and align more closely with those they are closely bonded (B. Tunçgenç, M.E. Zein, J. Sulik, M. Newson, Y. Zhao, G. Dezecache, O. Deroy, 2020). To support this, the results of the research on whether social influence is associated with adherence to COVID-19 guidelines show that the best predictor of the people's adherence to, for example, the distancing rule was perceived adherence of their close circle, which exceeded the effect of their own approval of the rules. Additionally, there were indications that in the rapidly changing and threatening situation of the pandemic, people had an increasing need to turn towards their bonded inner groups for reference such as family, friends of fellow citizens (B. Tunçgenç, M.E. Zein, J. Sulik, M. Newson, Y. Zhao, G. Dezecache, O. Deroy 2020). In terms of youth, it is important to have in mind that social influence from peers and family has a profound impact

on positive youth adjustment (E.H. Telzer, J. Hoorn, C.R. Rogers, K.T. Do, 2018) including behavioural change.

## 2.2 Social Identity Theory and Social Norms

Henri Tajfel and John Turner's Social Identity Theory considers that the person's sense of who they are, and their self-concept is based on the social group they belong to and describes the conditions in which social identity becomes more important than one's identity as an individual. It considers an interplay between personal and social identities with the aim to specify and predict what are the conditions in which one thinks of themselves as an individual or as a group member. This theory further addresses how social identities affect people's attitudes and behaviour regarding their ingroup and the outgroup (Campbell, 2011). In general, individuals wish to retain their positive social identity by maintaining a favourable social standing of their group in relation to the relevant outgroups.

Social Identity Theory is providing the framework for understanding the concept of social norms, how they are formed, and changed and how they operate. The social identity approach states that belonging to a certain social group provides individuals with the definition of the group, social identity that includes a description and a prescription of what is involved in being a group member i.e., group norms (F.G. Neville, A. Templeton, J.R. Smith, W.R. Louis, 2021).

Social norms are defined as rules or standards of behaviour that can be seen as a guide of individuals' actions, to help them create expectations on how others will act and promote overall coordination in social life (Smith, 2020 as cited in F.G.Neville, A.Templeton, J.R.Smith, W.R.Louis, 2021). Norms operate from a personal level to the collective one. Research on social norms and behavioural change has shown that even thou these changes are sometimes difficult they are possible, with clear messages that reinforce positive norms and correct misconceptions, particularly if these messages appeal to a shared social identity. To secure long-term changes, it is important to appeal to individuals' membership in valued groups and to change behaviour through changing social norms (F.G.Neville, A.Templeton, J.R.Smith, W.R.Louis, 2021). In conclusion to the discussion of social norms and social identity, Neville et al. argue that social norms and social identities are critical to the mass behaviour change necessary to tackle COVID – 19 pandemic. The above analysis also suggests that public health policies should focus on communication stages that would involve influential individuals from the public/community, and members of the valued group, to increase the percentage of people willing to be vaccinated or adhere to certain public health measures. Enlisting trusting voices/individuals from the community has been shown to make public health messages more effective in changing behaviour during epidemics as demonstrated during the West Africa Ebola crisis (J. J. Van Bavel et. Al, 2020).

## 2.3 Protective Action Decision Model (PADM)

The Protective Action Decision Model proposed by Lindell and Perry in 2004 was built to explain how people respond to and protect themselves against hazards and disasters (Y. Guo et al., 2022). This multistage model integrates the processing of information obtained from social context and the environment with messages sent to individuals at risk through communication channels (M.K Lindell, R.W. Perry, 2012) focusing on psychological decision-making processes in combination with information flows.

The model foresees critical pre-decision processes such as reception, exposure and attention to and understanding of warnings, and interpretation of environmental and social signs, that precede all further processing. These processes further influence three core perceptions related to the threat, protective actions, and stakeholders which in the end contribute to forming the basis for decisions on how to respond to a threat being an imminent one or long-term such as being exposed to a virus during a pandemic.

As stated by Lindell and Perry the outcome of the protective action decision-making process, together with situational facilitators and obstacles, produces a behavioural response (M.K Lindell, R.W. Perry, 2012).
To describe further and understand this multistage model, the sequential steps illustrate the way individuals typically decide whether to adopt protective actions against hazards, disasters and other crises there are several stages to consider:

- ⇒ the first stage involves individuals getting social and environmental signs that warn them about the hazard, disaster or crisis and that evoke pre-decisional processes where individuals hear, pay attention to and comprehend these warning messages.
- ⇒ the second stage is the perceptual one, where individuals develop perceptions of their risk, the protective actions available to them and the trustworthiness of sources or stakeholders.
- ⇒ in stage three individuals make decisions about the behavioural responses they will or will not take which can include: information searches, protective responses they will adopt to protect themselves from i.e. coronavirus, and emotion-focused coping mechanisms.
- ⇒ a feedback loop is the last stage of the PADM model which is used when people want to confirm or reject any warnings usually accessing a different source for information or obtaining additional information about the hazard, disaster or crisis, which protective action to use and how to enact a chosen protective action (Bergson, L., Shaw, T., & Van Leuven, N. 2021).

The PADM has mostly been applied in the areas of risk communication programs, evacuation modelling, and long-term hazard adjustment (M.K. Lindell, R. W. Perry, 2012) and this model is continuing to evolve into a useful framework for managing the societal response to environmental hazards (Bergson, L., Shaw, T., & Van Leuven, N. 2021).

# 3. Approach to research methodology

The previous chapter offered argumentation on how social influence, social norms and protective action decision-making are shaping the behaviour of individuals during a disaster, in this case specifically during COVID – 19 pandemic. The provided argumentation together with the overall context and the defined research question had set the basis for research on the general attitudes of youth in Serbia towards the COVID-19 vaccination and had shaped the methodological approach.

## 3.1 Research methodology and design

The research methodology is combining quantitative and qualitative methodology. A qualitative approach to research indicates the researcher's primary focus on the narrative description of social phenomena and on revealing the meaning that particular events and processes have for the social actors who create or participate in their creation. Quantitative research seeks to describe or explain social phenomena using numbers and quantities by measuring the correlation of factors of the investigated phenomenon with some other (Branković, 2007). As opposed to quantitative research which approaches the subject by examining some aspects of it and later generalizes the findings into a whole class (Branković, 2007), qualitative research refers to the whole in the individual cases with respect for the richness and diversity of structure, functions, relationships and connections between the subject and context thereby approaching the subject from a holistic perspective.

This research is designed to answer the question: *What are the sources of information mainly influencing the attitude of the population in Serbia aged 18 to 30 towards COVID – 19 vaccinations?* This paper is

considering whether social media and informal sources of information influence forming the attitudes of young people towards COVID – 19 vaccination.
Answering the research question required the collection, analysis and interpretation of relevant qualitative and quantitative data that are indicating possible sources of information for youth and its influence on their choices in connection to the vaccination. This research also aims to identify the type of individuals who are considered trustworthy by young people as sources of reliable information about COVID-19 and vaccination. The end goal is to recommend the possible communication channels, messages, and sources of information to influence behaviour change among youth during an emergency and/or public health crisis. The research methods used were desk study and content analysis of the contemporary expert literature and the survey research by online questionnaire.

### 3.1.1 Content Analysis

Content analysis is a systematic, objective text-based method of analysis. It is primarily a method of analysis rather than a data collection. That is why this method is usually integrated into wider frames of research design that include forms of data collection and the forms of data analysis (Prior, 2014). Content analyses can be done in parallel or sequentially with other methods.

In this report, the content analysis was done according to the strategy where it served as an important point of departure for further data analyses. Different documents, journals and articles have been analysed as a source of evidence. The analyses of the theoretical literature about the topic provided insights and information on context knowledge. The empirical literature on earlier research provided the basis for the research design where findings are taken as a starting point in posing a research question.

### 3.1.2 Survey Research

Surveys are primary research tools used to reach a larger population to collect information from a sample of people through their responses to questions (Check & Schutt, 2012, p. 160, as cited in J. Ponto, 2015) and it is a part of an overall research strategy. There are three survey research strategies:

- ⇒ quantitative research strategies, e.g., using questionnaires with numerically rated items,
- ⇒ qualitative research strategies e.g., using open-ended questions,
- ⇒ quantitative and qualitative research strategies or mixed methods.

Surveys are mostly used in social and psychological research to describe and explore human behaviour.
Surveys are considered to be easy to use especially online i.e. Survey Monkey or Kobo toolbox and they are cost-effective, with opportunities to gather data from a large sample and it is allowing the collection of both qualitative and quantitative data. Limitations of a survey can be seen in its accuracy, non–responses where respondents may choose not to respond to some questions which can lead to bias in results, and interpretation differences where respondents may have difficulties interpreting questions and thus answering.

Data in this study has been collected by a web-based Knowledge, Attitude and Practice (KAP) survey to gather qualitative and quantitative information on youth perception related to COVID – 19 vaccination. The sampling was random to avoid bias.
The survey questionnaire is available in Annex 1. of this report.

The online questionnaire, distributed via the Kobo toolbox contained 22 closed–ended questions and 7 open–ended questions divided into four sections assessing the respondent's COVID – 19 status, attitudes

on personal protection, COVID – 19 vaccination status and attitudes and knowledge on available COVID – 19 vaccine and what was their source of information related to COVID- 19 and COVID – 19 vaccination (also addressing information noise/rumours and COVID – 19 myths).

The sample group was 925 university students from 4 cities in Serbia representing different regions and the levels of development of the local municipalities they live in:

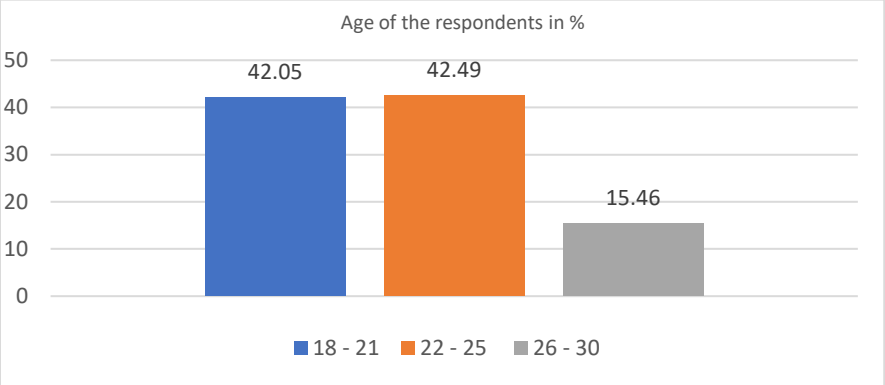
1. Belgrade
2. Novi Sad, Province of Vojvodina
3. Kosovska Mitrovica, Province of Kosovo and Metohija
4. Nis, South part of Serbia

The coordination of the survey was done by the Red Cross branches of Belgrade, Novi Sad, Kosovo and Metohija and Nis.

The majority of the respondents are attending Belgrade University 74%, Faculty of Economy, followed by the Faculty of Biology and Medicine. The students from the University of Novi Sad, Nis and Kosovska Mitrovica consisted 21% of respondents, while 5% of respondents are attending private universities in different cities in Serbia (Kragujevac, Kraljevo, Novi Pazar, Ub etc.). 49% of the sample are students of social science, 30% study science, and 17% are in medical studies.
One of the advantages of students as a target group is that they are coming from different social backgrounds and differently developed municipalities of Serbia making the sample group as diverse as possible representing the whole territory of Serbia.

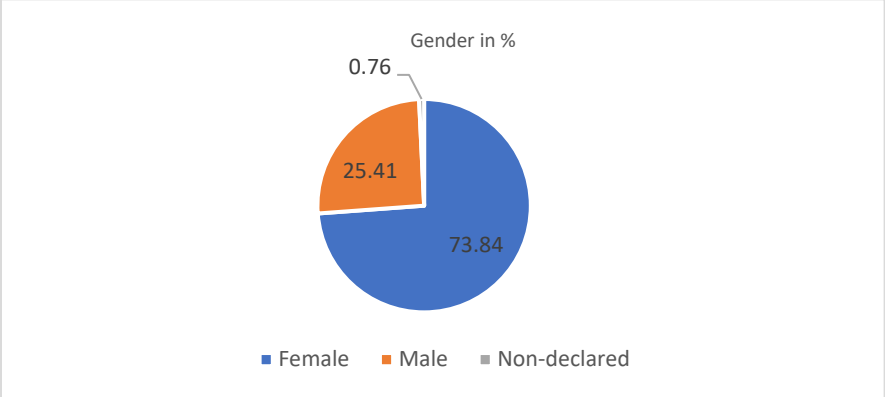
Most of the respondent is between 22-25 years of age 42.49%. The respondents' age between 18-21 represented 42.05% while 26 – 30 years of age was 15.46%.

Chart 1. Age of the respondents




In terms of gender, most respondents are females 73.84%.

Chart 2. Respondents gender




The majority of the participants responded that they do not have any chronic disease 88.86%.

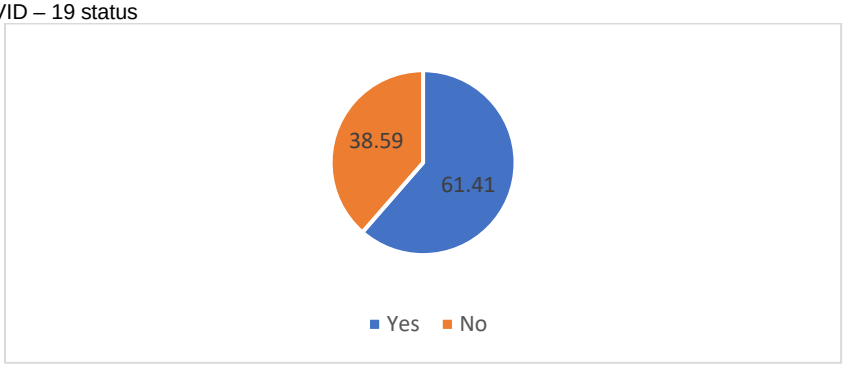
# 4. Interpretation of the research results

The following chapter will provide a detailed presentation and analysis of the survey results allowing the development of the discussion and the respective conclusion related to the research question - *What are the sources of information mainly influencing the attitude of the population in Serbia aged 18 to 30 towards COVID – 19 vaccinations?* The findings will be analysed in detail following the order of the questions posed in the survey questionnaire and clustered in the four sections elaborated on previously.

## 4.1 COVID – 19 status

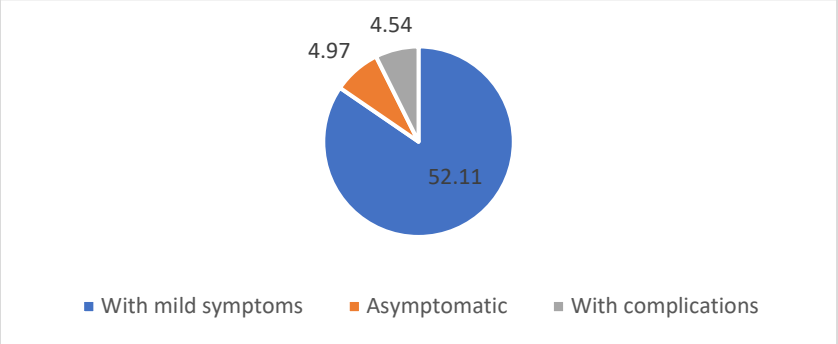
Most of the respondents at the time of answering the survey had recovered from COVID – 19, 61.41% while 38.59% were not infected by coronavirus at the time, and only 1.08% were infected during the survey.

Chart 3. Current COVID – 19 status




The majority of the respondents reported that the infection was with mild symptoms 52.11% or asymptomatic 4.97, and only 4.54% had COVID-19 with serious symptoms. 44.76% confirmed COVID-19 by the PCR test.

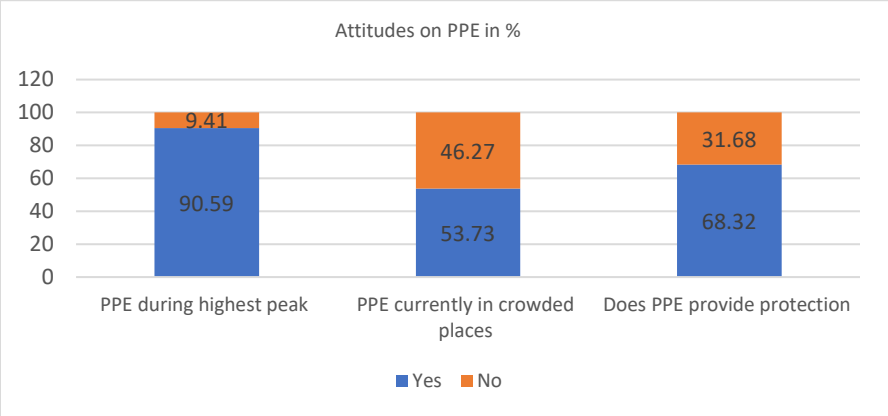
Chart 4. *The severity of the COVID – 19 illness?*




## 4.2 Attitudes on COVID-19 personal protection (PPE)

Respondents reported that during the COVID -19 peak of infections they were wearing PPE, 90.59%, while 53.73% said that they are currently wearing PPE in crowded places like public transportation, the faculty, and shops. 68.32% of responders consider that the PPE provides adequate protection against COVID-19.

Chart 5. COVID – 19 PPE



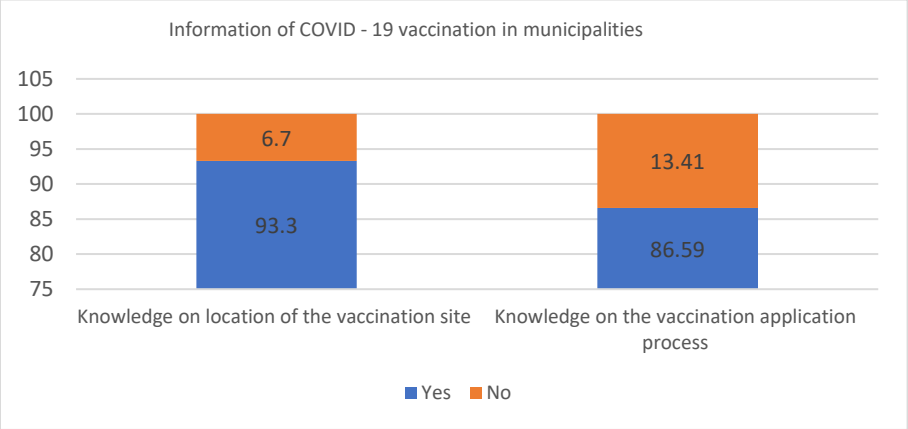

Majority of respondents that consider that the PPE does not provide adequate protection from coronavirus support their attitudes as presented in the sum-up quotes below:

- ⇒ *The PPE protects others from me and does not protect me from getting the infection from other people.*
- ⇒ *The PPE is not effective if others do not use it or use it properly/adequately.*
- ⇒ *In despite wearing PPE, I got infected by COVID-19.*
- ⇒ *The PPE does not provide 100% protection against coronavirus.*
- ⇒ *There is no proof that the PPE is effective.*

## 4.3 Respondents' vaccination status and attitudes on COVID – 19 vaccination

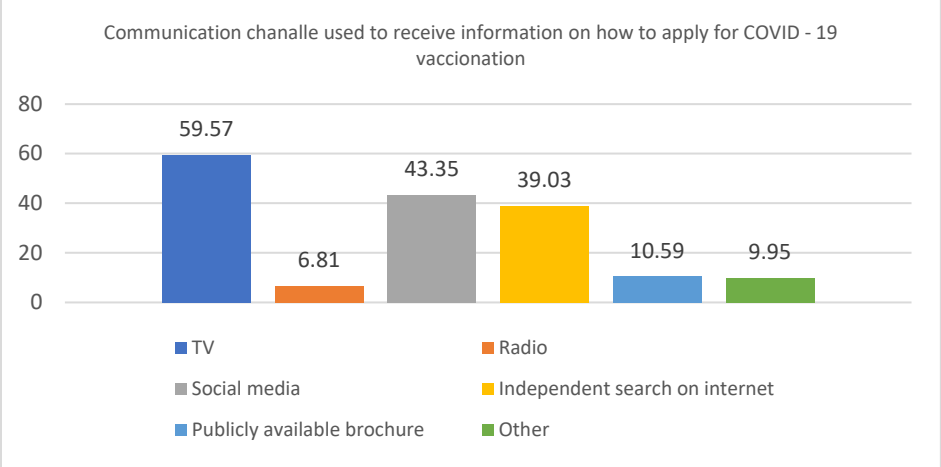
On the question do respondents know where the COVID- 19 vaccination site is in their municipality, 93.3% answered positively, and on the question do they know how COVID – 19 vaccination application goes, 86.59% reported that they know the procedure.

Chart 6. Information on COVID – 19 vaccinations




Most respondents reported that they have received information on the possibility to apply for COVID – 19 vaccines in their municipality by TV 59.57% and social media 43.35%.

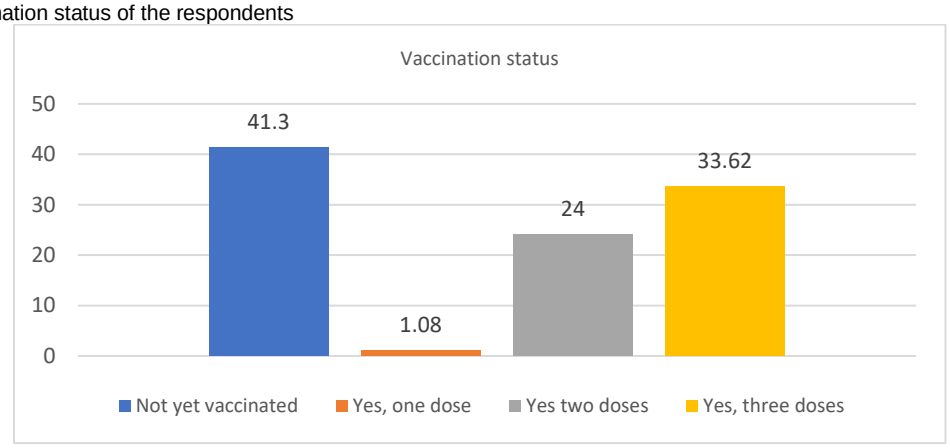
Chart 7. Channels of information on the possible application for COVID – 19 vaccination at the local level?




To clarify what other channels and sources of information are used the respondents mostly emphasized their close surroundings i.e., parents, friends, and primary health doctors. They also indicated that the information was also received via SMS messages from the public health institute, and at their respective faculty or colleagues from work and the Red Cross branch.

Most of the respondents are COVID – 19 vaccinated and revaccinated 58.7%, including only one dose, while 41.3% reported that they had not yet been vaccinated. 33.62% received all three doses of the COVID – 19 vaccine.

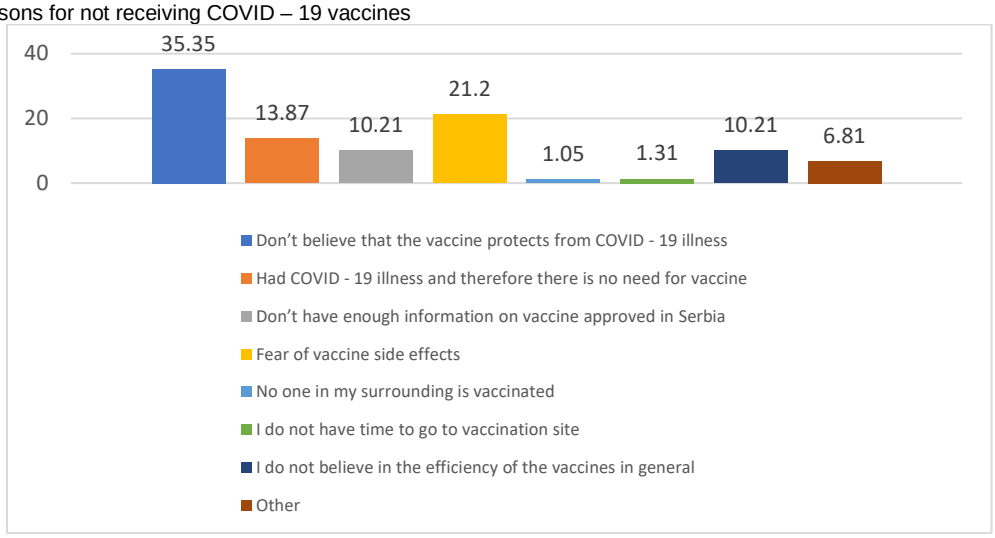
Chart 8. Vaccination status of the respondents




382 respondents that answered that they have not received the COVID -19 vaccine indicated that the reasons are, as summed up in the two quotes below:

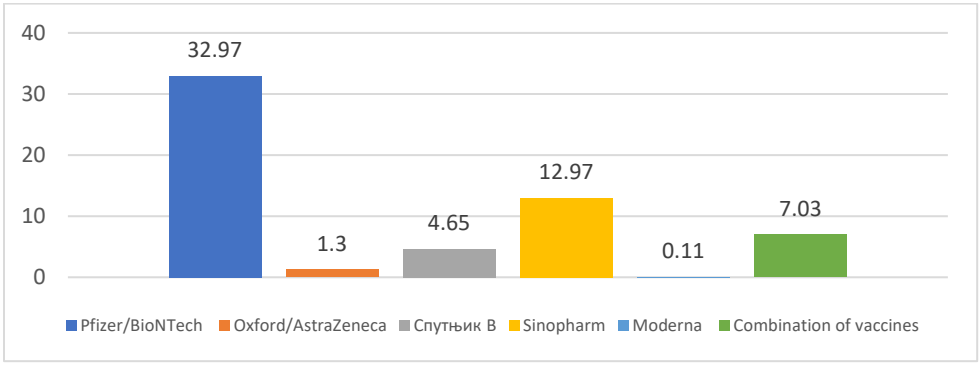
- *I do not believe that the vaccine protects from COVID-19 illness* – 35.35%
- *I have a fear of vaccine side effects* – 21.20%

Chart 9. Reasons for not receiving COVID – 19 vaccines




Of those who had been vaccinated the majority selected Pfizer/BioNTech vaccine 32.97% and the second choice was Sinopharm 12.97%.

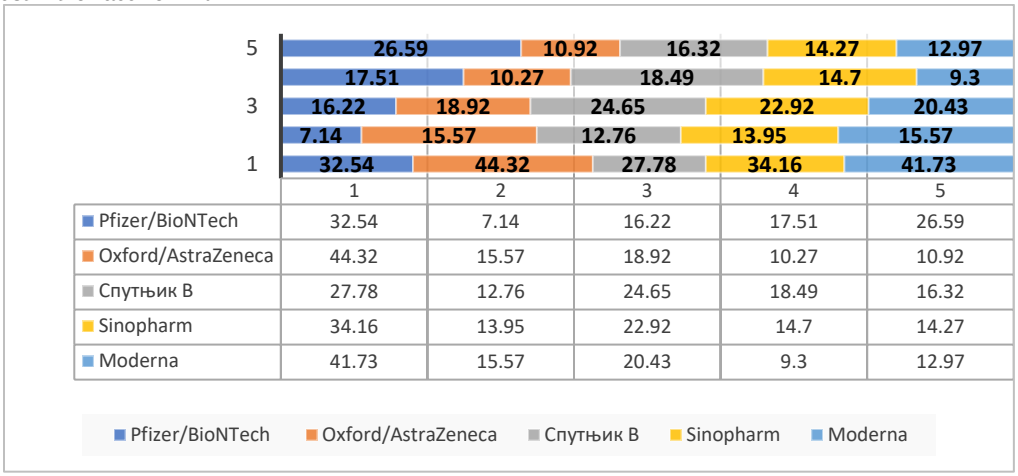
Chart 10. Type of COVID – 19 vaccine received



Of those who have received the combination of the vaccines the most common combination was Sinopharm – Pfizer/BioNTech (26) and Pfizer/BioNTech-Oxford/AstraZeneca (11).

This survey has investigated respondents' trust in the COVID-19 vaccines available in Serbia. The respondents could mark on a scale from 1 to 5 the level of their trust where 1 represented *no trust at all* and 5 *great trust*. The greatest trust is in the Pfizer/BioNTech vaccine 26.59% and no trust at all for Oxford/AstraZeneca 44.32%. The overall analysis of the answers to this question indicates the prevalence of the general lack of trust in vaccines.

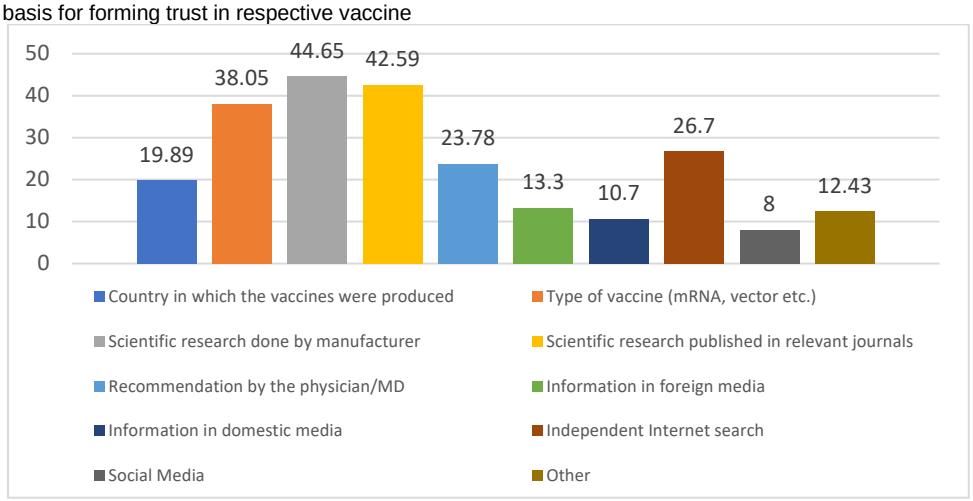
Chart 11. Trust in the vaccine in %




| | 1 | 2 | 3 | 4 | 5 |
|---|---|---|---|---|---|
| Pfizer/BioNTech | 32.54 | 7.14 | 16.22 | 17.51 | 26.59 |
| Oxford/AstraZeneca | 44.32 | 15.57 | 18.92 | 10.27 | 10.92 |
| Спутњик В | 27.78 | 12.76 | 24.65 | 18.49 | 16.32 |
| Sinopharm | 34.16 | 13.95 | 22.92 | 14.7 | 14.27 |
| Moderna | 41.73 | 15.57 | 20.43 | 9.3 | 12.97 |

On request to state on what ground the trust in certain vaccines is based, the respondents indicated scientific research on vaccine efficiency done by the vaccine manufacturer 44.65% and the available and relevant scientific research found in scientific journals and other relevant online sources 42.59%.

Chart 12. The basis for forming trust in respective vaccine



115 respondents that selected that they have based their trust in certain vaccines from other sources stated that they do not have trust in the vaccine at all and that their mistrust is based on personal contact with people that had been vaccinated and had COVID – 19 infection after all. Likewise, the basis of the mistrust was their own experience, personal understanding of the vaccine and the timeline between the vaccine being manufactured, tested, and then put into public use. For those that have understood the question, the basis of trust was information received from their close circle i.e., research and knowledge of their university professors, and explanations offered to them by parents or friends with science background (experts).

*The way how mentioned vaccines are working are logical and do not cause me a distrust. Their application and effects in practice is what makes me skeptical, because a huge number of vaccinated people got sick both during the current strain of the virus and after when new variants appeared. Also, the resistance to vaccination that I feel now caused by social behavior, compulsion, judgment and belittling of the views of all those who refuse to be vaccinated. Also, the lack of transparency about the political and financial benefits that our country has from the number of vaccinated people, manipulation of numbers; the number of infected people in our country depended on whether it was time of elections, in Montenegro it now depends on the extent to which they are ready to sacrifice the tourism season etc. I stopped believing in numbers because here even the authorities do not give true information only what suits them. I got vaccinated because I believe in medicine, but the further the pandemic developed, the more it seemed to me that medicine played a small role in the whole story. The mistrust of the vaccine has grown proportionally with the mistrust of the people who lead us. Vaccination should be something that is rational and obvious to everyone that it is positive, and vaccination against COVID has become like a dogma.*

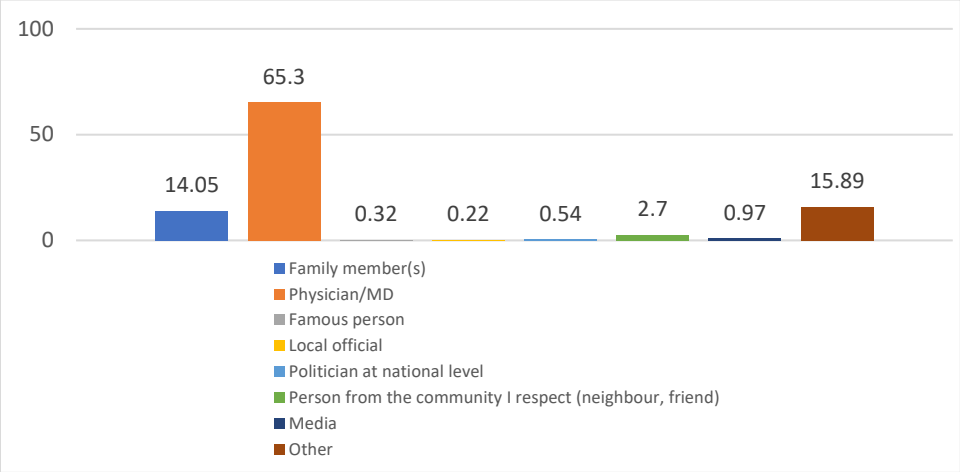
The attitudes towards COVID – 19 vaccines were additionally examined through the offered statements where the respondents had to *agree*, *partially agree*, *disagree* or mark *don't know*. The results show that participants believe the COVID – 19 vaccine is preventing serious COVID – 19 illness, that vaccines are useful and provide protection from COVID- 19 and are safe. However, the dominant majority agrees and partially agrees with the statements that COVID – 19 vaccine is not needed since COVID -19 is not so common, when others become COVID-19 vaccinated they do not need to be vaccinated and that the pharmaceutical companies are earning profits on vaccines. The results are presented in Table 1.

Table 1. Attitudes on COVID – 19 vaccines.

| | Agree | Partially agree | Disagree | Don't know |
|---|---|---|---|---|
| Vaccines prevent serious COVID-19 illness | 45.95% | 31.24% | 15.89% | 6.92% |
| The vaccine is useful and protects from COVID – 19 infections | 32.86% | 30.59% | 28.11% | 8.43% |
| Vaccine is safe | 30.81% | 30.70% | 20.76% | 17.73% |
| COVID – 19 vaccine is not needed anymore since COVID -19 is not so common anymore | 43.57% | 23.57% | 18.38% | 14.49% |
| When others become COVID-19 vaccinated, then I do not need to get the vaccine | 67.46% | 19.89% | 7.03% | 5.62% |
| Pharmaceutical companies earn profits from vaccines | 48% | 26.81% | 14.59% | 10.59% |

Respondents stated that they mostly believe their physician/MD, 65.3 % when they need advice on the COVID – 19 vaccinations.

Chart 13. Who do you believe the most when receiving advice on the COVID-19 vaccine?




The 147 respondents that stated other as an answer to the above question listed the following sources, they believe the most when asking for advice of COVID – 19 vaccine:

- ⇒ *Science sources and medical/biology and virology experts – 45*
- ⇒ *Myself – 23*
- ⇒ *I don't believe anyone – 13*
- ⇒ *Experts from my family and friends circle – 5*
- ⇒ *I do not seek advice - 2*
- ⇒ *WHO-1*

On the scale going from *agreeing*, *partially agreeing*, to *disagree* and *don't know* the respondents assessed the statements that are related to facts and myths on COVID-19 vaccines. Results show that respondents believe that vaccines can control the spread of COVID – 19, but also that the immunity after recovering from COVID – 19 illness is better than vaccine-derived. Also, 53.08% disagree with the statement that the vaccine does not always protect, so it should not be taken and 63.14% with the statement claiming that there is no need for PPE after being vaccinated. 55.57% of respondents agree or partially agree with the statement that the COVID-19 vaccine was developed too quickly without adequate research and is not safe. Respondents disagree with the statement that if someone has had COVID-19, they do not need to be vaccinated and with the statement that the COVID-19 vaccines can give the COVID-19 disease. The following statements do not give a basis for a certain conclusion of what most of the respondents' opinion is:

- ⇒ Vaccines contain harmful ingredients that can adversely affect my health: 34.05% disagrees but 30.49% do not know.
- ⇒ COVID-19 vaccines affect fertility: 40.65% disagree but 41.30% do not know.
- ⇒ The side effects of the vaccine are really dangerous: 37.19% agree or partially agree, 30.49% disagree and 32.32% do not know.

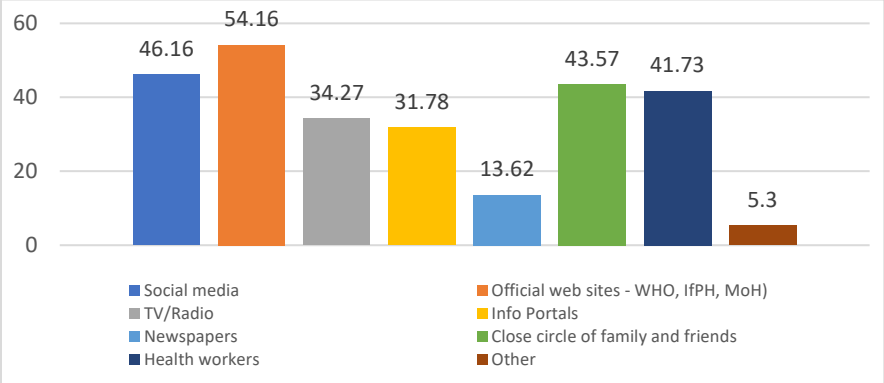
Table 2. COVID – 19 Facts and Myths

| | Agree | Partially agree | Disagree | Don't know |
|---|---|---|---|---|
| Vaccines can help control the spread of COVID-19 | 44.79% | 27.68% | 18.49% | 9.08% |
| Natural immunity after contracting COVID-19 is better than vaccine-derived immunity | 32.11% | 27.68% | 17.84% | 22.38% |
| The COVID-19 vaccine was developed too quickly without adequate research and is not safe | 31.35% | 24.22% | 30.81% | 13.62% |
| If someone has had COVID-19, they do not need to be vaccinated | 12.97 | 18.59% | 49.08% | 19.35% |
| Vaccines contain harmful ingredients that can adversely affect my health | 18.05% | 17.41% | 34.05% | 30.49% |
| The COVID-19 vaccines can give me the COVID-19 disease | 8% | 9.51% | 59.68% | 22.81% |
| COVID-19 vaccines affect fertility | 7.35% | 10.70% | 40.65% | 41.30% |
| The side effects of the vaccine are really dangerous | 16.22% | 20.97% | 30.49% | 32.32% |
| The vaccine does not always protect, so it should not be taken | 14.92% | 17.08% | 53.08% | 14.92% |
| I can stop wearing PPE and can continue to behave as I did before the COVID-19 pandemic, after the vaccine | 5.51% | 13.84% | 63.14% | 17.51% |

## 4.4 Sources of information

Respondents had to select the sources of information from which they are receiving the information on COVID – 19 and the COVID-19 vaccination process. They had the possibility of selecting multiple answers. Analyse shows that most of the respondents, 54.16% stated that they are receiving this information from the official websites i.e. WHO, Institute for Public Health (IfPH) and the Ministry of Health (MoH), while 46.16% also seek information on social media (Facebook, Twitter, Instagram etc.), close circle of family and friends 43.57%, health workers 41.73%, TV/Radio 34.27%, info portals 31.62%, newspapers 13.62%.

Chart 14. Sources of information

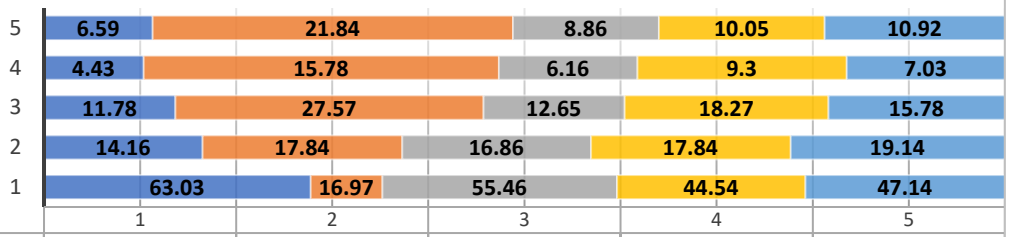



The 49 respondents that stated other as an answer to the above question listed the following as an information source they use for seeking information on COVID – 19 and the COVID-19 vaccination process:

- ⇒ *Science sources and articles – 14*
- ⇒ *I do not have any interest in receiving COVID – 19 information - 12*
- ⇒ *Professors from my Faculty – 4*
- ⇒ *All above – 3*

The respondents could mark on a scale of 1 to 5 where 1 represented very easy and 5 very difficult, the level of difficulties on the following statements presented in chart 15. Analysis of respondents' answers shows that they did not have any difficulties in finding the information they needed and are related to the symptoms of COVID- 19, what to do if they are COVID-19 infected, finding the information on COVID – 19 vaccination and understanding the recommendation on COVID-19 vaccination. Inconclusive is the data on the difficulties in assessing whether the information on COVID – 19 vaccine in the media is reliable where 34.81% found it easy or partially easy to access the reliability of this information while 37.62% found it difficult or partially difficult.

Chart 15. Level of difficulty approaching information




| | 1 | 2 | 3 | 4 | 5 |
|---|---|---|---|---|---|
| Find the information you need about the symptoms of COVID 19 | 63.03 | 14.16 | 11.78 | 4.43 | 6.59 |
| Assess whether information about the COVID-19 vaccine in the media is reliable | 16.97 | 17.84 | 27.57 | 15.78 | 21.84 |
| You understand information about what to do if you think you have COVID-19 | 55.46 | 16.86 | 12.65 | 6.16 | 8.86 |
| Find the information you need about the COVID 19 vaccine | 44.54 | 17.84 | 18.27 | 9.3 | 10.05 |
| You understand the recommendations about the COVID-19 vaccination | 47.14 | 19.14 | 15.78 | 7.03 | 10.92 |

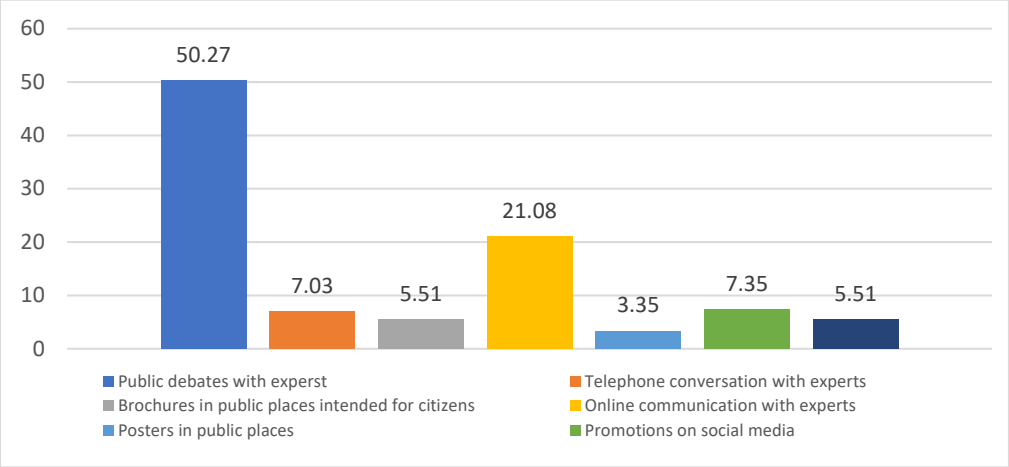
The respondents showed their level of trust in different channels of communication through the scale going from *trust*, *partial trust*, to *distrust* and *don't know*. Distrust has been shown in social media 48.97% and newspapers 51.78%. The greatest trust has been shown in the official website of WHO, the Institute for Public Health and the Ministry of Health: 40.22% - *trust* and 43.57% - *partial trust;* close circle of family and friends: 58.38%; health workers: 40.43% - *trust* and 48.11% - *partial trust*; and official institution and bodies at the national level: 42.81% - *partial trust.*
The results are presented in Table 3.

Table 3. Level of trust in communication channels

| | Trust | Partial trust | Distrust | Don't know |
|---|---|---|---|---|
| Social media (Facebook, Instagram, Twitter, etc.) | 2.59% | 41.84% | 48.97% | 6.59% |
| Official websites - WHO, IfPH, MoH) | 40.22% | 43.57% | 13.19% | 3.03% |
| TV/Radio | 4.65% | 45.73% | 40.65% | 8.97% |
| Info portals | 6.59% | 50.27% | 32.54% | 10.59% |
| Newspapers | 3.46% | 33.3% | 51.78% | 11.46% |
| The close circle of family and friends | 13.62% | 58.38% | 20.97% | 7.03% |
| Health workers | 40.43% | 48.11% | 8% | 3.46% |
| Official institutions and bodies at the national level | 24.86% | 42.81% | 23.89% | 8.43% |

The respondents stated that the best way of informing people about COVID – 19 vaccines is through public debates with experts 50.27% and online communication with experts 21.08%.

Chart 16. The best way of informing people about COVID – 19 vaccination




The 51 respondents that stated other as an answer to the above question listed the following as the *best way of informing people on COVID – 19 vaccination* which could be summed up through belove quotes:

- ⇒ *For younger and middle age groups promotion on social media, and for older age groups direct phone calls.*
- ⇒ *More experts that are presenting in public without political interference.*
- ⇒ *Public campaigns.*
- ⇒ *Direct talks with the public.*
- ⇒ *All offered.*

- ⇒ *Without contradictory statements.*
- ⇒ *Lectures in the workplace and educational institutions.*
- ⇒ *In health centres, universities, schools, and workplaces by experts, and health workers, as well as through student organizations and student activism, through brochures, and public debates by experts and tribunes.*
- ⇒ *To answer tricky questions that people are actually interested in, and not just repeat the official, now a worn-out story that people who have decided not to get vaccinated don't even listen to anymore. Allowing those people to verbalize what's bothering them and taking their concerns seriously, not mocking them. We have the arrogant cover provided by science, and it means nothing to them, it only causes repulsion. You won't change anything if you don't take seriously the root cause of mistrust. To an expert, it seems insane, but to an ordinary person completely correct. It is not the format of advertising the vaccine that matters, but the content. And I repeat, any information will be better received if those who give it try to understand those to whom they give it. More compassion, less overbearing.*
- ⇒ *All of the above should be used so that as many people as possible are vaccinated and this agony finally ends.*
- ⇒ *It would be best if they didn't inform us, because 99% of what they say is a lie.*

# 5. Discussion

Taking a departure point from the fact that the youth between 18 to 24 years of age are representing the smallest percentage of vaccinated in Serbia and that this was considered an obstacle in stopping the pandemic the Red Cross of Serbia conducted the research aimed at investigating how the attitudes and respected choices of youth is Serbia towards COVID -19 vaccination are being formed and influenced.
One of the research done in Serbia in 2021 on youth attitudes towards COVID – 19 vaccination and the trust in the media information on vaccination, stated that one of the reasons for the small percentage of vaccinated youth can be found in the doubts about the vaccine safety and efficiency, considering the speed and the technology of its production. The other main reasons were:

- ⇒ time flow, as an indicator of harmful consequences of the vaccine (28%)
- ⇒ mistrust in the quality of the vaccine (23.4%)
- ⇒ fear of side effects (13.7%)
- ⇒ distrust in the effectiveness of the vaccine (10.3%).

This eventually led to the consideration of the young person aged 25 as a COVID – 19 supercarrier: educated, nonvaccinated, does not respect the preventive measures such as physical distancing and wearing a protective mask (Šiđnin, I.; Njegovan, B.R.; Sokolović, B. 2021).

The Red Cross of Serbia survey indicated that the respondents, even though by the time of the survey, had COVID – 19 illness with mild symptoms did adhere to the measures and rules posed by the government as a response to the perceived COVID -19 threat. They used PPE and still do in crowded places; the majority are vaccinated and were following the information on COVID – 19 mostly through TV and social media. They know where the vaccination site is and how to apply for the vaccine. The 41.3% that is not vaccinated did not do it due to fear of the side effect of the vaccine and the belief that the vaccine cannot protect them from getting COVID-19. This they base on personal experience and the experience of their close circle. The dominant attitude towards a vaccine and its effects is distrust. This goes in line with what this research shows, the youth did understand what the COVID symptoms are and how vaccines work etc. but all this mixed with fake news and conspiracy theories added to the difficulties of young people to adequately

assess the reliability of the information received through various channels. However, they do demonstrate that the influence made by their university professors and experts is deep since all the information on COVID – 19 and the vaccine are sought after in the scientific journals or official websites of WHO or the institute for public health and the advice on how to act in terms of vaccination is asked from their professors, MD or family and friends they consider are experts in the respective field. Even though they frequently use social media as a source of information on COVID – 19 they demonstrated distrust in the information received through this communication channel.

The research question of this paper was: *What are the sources of information mainly influencing the attitude of the population in Serbia aged 18 to 30 towards COVID – 19 vaccinations,* and the findings indicate that the attitudes towards COVID – 19 vaccination and the respective decisions that drive the behaviour of youth is induced by the behaviour, attitudes and the opinions of their close circle of people. In this case, it is the scientific community at the respondents' respective faculties (university professors, scientists, colleagues) and their family members and friends especially those that they are considering experts.
This goes in line with what the above presented Social Influence Theory and concept of social norms are proposing, that individuals are altering their behaviour to be accepted by the groups, impress other(s) or gain a sense of belonging to a certain circle, mostly the one they consider close. This is additionally supported by the findings that people's adherence to, for example, the distancing rule during the pandemic was perceived as adherence of their close circle, which exceeded the effect of their own approval of the rules. Additionally, in the rapidly changing and threatening situation, people have an increasing need to turn towards their bonded inner groups for reference. These groups are usually family, friends or colleagues, and citizens (B. Tunçgenç, M.E. Zein, J. Sulik, M. Newson, Y. Zhao, G. Dezecache, O. Deroy 2020). In terms of youth, the profound impact on their behaviour, opinion and attitudes is seen in the social influence of their peers and family (E.H. Telzer, J. Hoorn, C.R. Rogers, K.T. Do, 2018). Social norms and social identities are critical to the mass behaviour change necessary to tackle COVID – 19 pandemic and influence behaviour.

These findings could in future positively shape the community approach of the Red Cross of Serbia during emergencies where youth could be an agent of change and considerable community influencers in terms of behavioural changes as a response to threats, if the Red Cross staff and volunteers are to be considered as their inner circle, trustworthy partner, and expert in the certain field with whom they want to cooperate and have a sense of belonging to the organization. Furthermore, the values that are at the core of the Red Cross could be a basis for this trust especially if the youth can rely on these values. That can be a starting point in developing desired behaviour through internalizing the changes since the adopted behaviour or accepted influence is by one's value system and not because there is a desire to conform to the norms.

The Red Cross of Serbia would like to make a reservation when it comes to the findings of this research and the sample group. First, the individuals that responded voluntarily to the survey had an inner drive and the motivation to contribute despite being visibly overwhelmed by the information and the reporting on COVID – 19 and its constant presence in all media combined with the presence of fake news and conspiracy theories. The further what burden the youth were also contradictory statements of what they consider are the experts and politicians, and the decision made during the pandemic that directly affected them (i.e. lockdown during the period of exams). Also, all respondents are students and are greatly influenced by science and scientific thinking, therefore their decision and behaviour are directly linked to what was the narrative at their respective faculties. Despite all the above and being overwhelmed with their doubts about vaccine efficiency and the usefulness of PPE measures they adhere to these measures and the majority

got vaccinated. Respectively our reservation is made in terms of not having a diverse representation of the youth group which could allow us to double-check our findings and draw the conclusion and argue with certainty that the inner circle of youth is the main influencer of their attitudes and opinions on COVID-19 and the COVID-19 vaccination rather than social media.

# 6. Conclusion

This paper is considering what sources of information had the most influence in forming the attitudes and opinions of young people during COVID – 19 which drove their decision on the behaviour and vaccine acceptance. Answering the research question required the collection, analysis and interpretation of relevant qualitative and quantitative data that could indicate possible sources of information for youth and its influence on their choices in connection to the vaccination. This research also aimed to identify the type of individuals who are considered trustworthy by young people as a source of reliable information. The end goal was to recommend the possible communication channels, messages, and sources of information to influence behaviour change among youth during an emergency and/or public health crisis.
The research methods used were desk study and content analysis of the contemporary expert literature and the survey research by online questionnaire.

The theoretical overview had given us an insight that the considerable influence on youth to adhere to certain rules and to change their behaviour as a response is greatly connected with the attitudes, opinions and behaviour of their close circle such as the university community, parents, peers etc. Furthermore, for them to internalize certain behaviour they will accept the certain influence after perceiving the content of the induced behaviour as rewarding and following one's value system. For developing desired behaviour internalizing change is crucial, since the adopted behaviour or accepted influence is by one's value system and not because there is a desire to conform to the norms (H. Kelman, 1957). Also, to secure these changes in the longer term, it is important to appeal to individuals' membership in valued groups and to change behaviour through changing social norms (F.G.Neville, A.Templeton, J.R.Smith, W.R.Louis, 2021). The Protective Action Decision Model also allowed us to understand how individuals are reaching their decision and assess them when it comes to which protective action to use and how to enact a chosen protective action, and additionally confirm or reject the warnings by accessing different sources for information or obtaining additional information about the hazard, disaster or crisis, (Bergson, L., Shaw, T., & Van Leuven, N. 2021).

The findings of this research indicate that the considerable influence on youth in reaching decisions related to COVID – 19 vaccination and respectively behavioural changes is made by the influential individuals they consider close, from the university or members of the valued group, experts, family members or colleagues. Therefore, youth need to be considered partners and equal participants in any health-related policies and measures directly affecting them. Public health policies and decisions should also include communication strategies that would involve these influential individuals to increase the percentage of people willing to adhere to certain policies and measures. Enlisting trusting voices/individuals from the community has been shown to make public health messages more effective in changing behaviour during public health crises.

Having all the above-mentioned in mind the Red Cross should in the future shape its community work with youth during emergencies and public health crises by establishing a trustworthy relationship where the Red Cross staff and volunteers would be perceived as a part of their inner circle, a partner, and an expert in the certain field with whom community wants to cooperate and have a sense of belonging to. The possible

communication channel used is direct contact in the community and social media through which to promote its position and integrity.

Our values in the core of the Red Cross Principles are the basis of this trustworthy relationship and we need to continue to communicate and behave according to these values for the youth to rely on them and respectively the Red Cross. That is a basis for developing a behaviour which could positively influence the outcomes in emergencies or public health crises by which the young people would internalize these changes, and the adopted behaviour or accepted influence by the Red Cross since the proposed action is by their own value system.

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# Annexe 1. Survey questionnaire

*(translated)*

| # | Question | Possible answers | | |
|---|---|---|---|---|
| Dear Sir/Madam,<br>Your participation in this research will provide us with valuable insights into the attitudes of young people about the COVID-19 vaccination, as well as the influence of the media and social networks on opinions and decisions regarding the COVID-19 pandemic and the respective vaccination process. Please mark your consent to participate in the research below:<br>*I agree to participate in the research of the Red Cross of Serbia: Public perception of Covid-19 and the vaccination process. The Red Cross of Serbia undertakes to comply with the regulations on the storage of personal data by the Law on the Protection of Personal Data (Official Gazette of the RS No. 87/2018) and to use the information obtained through the research to compile a summarized report without displaying individual responses and user data.*<br>• I agree | | | | |
| Date | | | | |
| Place of living | | | | |
| Name of the Faculty | | | | |
| Age | | 18-21 | 22-25 | 26-30 |
| Gender | | Female | Male | Other/ I do not want to answer |
| Do you have any chronic diseases? | | Yes | No | I do not know/I refuse to answer |
| COVID -19 STATUS | | | | |
| 1 | Did you had a COVID – 19 illness | Yes | | No |
| 2 | Do you currently have COVID - 19 | Yes | | No |
| 3 | I you had COVID – 19 illness, was it | Asymptomatic | Mild form | With complicated symptoms |
| 4 | I you had COVID – 19 illness was it confirmed with a PCR test | Yes | | No |
| ATTITUDES ON PPE | | | | |
| 5 | During the period of the highest number of infected people in Serbia, did you wear PPE (mask, gloves)? | • Yes<br>• No | | |
| 6 | Do you wear PPE in a place with crowded places (in public transport, at faculty, in the store)? | • Yes<br>• No | | |
| 7 | Do you think that PPE provides you with an adequate level of protection against COVID-19? | • Yes<br>• No | | |
| 8 | For those that answer *NO* to the previous question: Please state the reasons why you believe that PPE does not provide you with an adequate level of protection against COVID-19. | | | |
| VACCINATION STATUS AND ATTITUDES ON COVID-19 VACCINATION | | | | |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 9 | Do you know where you can get the COVID-19 vaccine in your place of living? | • Yes<br>• No | | | | | |
| 10 | Do you know how to apply for the COVID-19 vaccine? | • Yes<br>• No | | | | | |
| 11 | Where did you get information about the possibility of applying for vaccination in your place of living? | • TV<br>• Radio<br>• Social media<br>• Independent research on the Internet<br>• Through brochures available in public places<br>• Other | | | | | |
| 12 | For those that selected *Other* to the previous question: Please indicate where you got the information about the possibility of applying for vaccination in your place of living. | | | | | | |
| 13 | Have you been vaccinated against COVID-19? | • No, I haven't been vaccinated yet<br>• Yes, with one dose of the vaccine<br>• Yes, two doses of the vaccine<br>• Yes, three doses of the vaccine | | | | | |
| 14 | For those that previously answered *YES:* What vaccine did you receive? | • Pfizer/ BioNTech<br>• Oxford/AstraZeneca<br>• Sputnik V<br>• Sinopharm<br>• Moderna<br>• A combination of vaccines | | | | | |
| 15 | For those that answered *a combination of vaccines*: Please indicate which vaccines you received if you were vaccinated with different vaccines. | | | | | | |
| 16 | For those that answered *No* to question 18: If you have not received a COVID-19 vaccine, what is the main reason for your decision? | • I do not believe that the vaccine protects against the disease<br>• I have had COVID-19 and I believe that I do not need to be vaccinated because of this<br>• I don't have enough information about vaccines approved in Serbia<br>• I am afraid of the side effects of the vaccine<br>• No one in my surrounding is vaccinated<br>• I don't have time to go get vaccinated<br>• I generally do not believe in the effectiveness of vaccines<br>• Other (specify) | | | | | |
| 17 | On a scale of 1 to 5, where 1 is NO TRUST AT ALL and 5 is GREAT TRUSTS, indicate the level of trust you have in the following vaccines | | 1 | 2 | 3 | 4 | 5 |
| | | Pfizer/ BioNTech | | | | | |
| | | Oxford/AstraZeneca<br>Sputnik V | | | | | |
| | | Sinopharm | | | | | |

| | | | | | |
|---|---|---|---|---|---|
| | | Moderna | | | |
| 18 | On what foundation do you base your trust in a particular vaccine? | • Country of origin of the vaccine manufacturer<br>• Vaccine type (mRNA, vector, or inactivated virus vaccine)<br>• Available scientific research on the effectiveness of the vaccine done by the vaccine manufacturer<br>• Available and relevant scientific research on vaccine efficacy available in scientific journals and relevant sources<br>• Recommendation of the MD<br>• Information obtained through foreign media<br>• Information obtained through domestic media<br>• Information obtained from Internet searches<br>• Information on social networks<br>• Other | | | |
| 19 | For those that selected *Other* to the previous question: Please indicate the basis of your trust in a particular vaccine | | | | |
| 20 | To what extent do you agree with the following statements? | *a. The vaccine prevents a more severe form of the disease* | | | |
| | | Agree | Partially agree | Disagree | Don't know |
| | | *b. The vaccine is beneficial and protects against infection* | | | |
| | | Agree | Partially agree | Disagree | Don't know |
| | | *c. The vaccine is safe* | | | |
| | | Agree | Partially agree | Disagree | Don't know |
| | | *d. Vaccination against COVID-19 is unnecessary because COVID-19 is not that common anymore* | | | |
| | | Agree | Partially agree | Disagree | Don't know |
| | | *e. When everyone else gets vaccinated against COVID-19, then I don't need to get one* | | | |
| | | Agree | Partially agree | Disagree | Don't know |
| | | f. *Pharmaceutical companies make money from vaccines* | | | |
| | | Agree | Partially agree | Disagree | Don't know |
| 21 | Who do you trust most when you want to get advice about vaccinations? | • Family member<br>• MD / selected doctor<br>• Famous person<br>• Priest<br>• Local official<br>• Politician at the highest level<br>• Person from the community that I value (neighbour, friend)<br>• Media | | | |

| | | |
|---|---|---|
| | | • Other (specify) |
| 22 | For those who answered *Other* to the previous question: Please state whom you trust most when you want advice about vaccinations. | |
| 23 | To what extent do you agree with the following statements? | *a. Vaccines can help control the spread of COVID-19* |
| | | Agree / Partially agree / Disagree / I don't know |
| | | *b. Natural immunity after contracting COVID-19 is better than vaccine-derived immunity* |
| | | Agree / Partially agree / Disagree / I don't know |
| | | *c. The COVID-19 vaccine was developed too quickly without adequate research and is not safe* |
| | | Agree / Partially agree / Disagree / I don't know |
| | | *d. If someone has had COVID-19, they do not need to be vaccinated* |
| | | Agree / Partially agree / Disagree / I don't know |
| | | *e. Vaccines contain harmful ingredients that can adversely affect my health* |
| | | Agree / Partially agree / Disagree / I don't know |
| | | *f. The COVID-19 vaccines can give me the covid-19 disease* |
| | | Agree / Partially agree / Disagree / I don't know |
| | | *g. COVID-19 vaccines affect fertility* |
| | | Agree / Partially agree / Disagree / I don't know |
| | | *h. The side effects of the vaccine are really dangerous* |
| | | Agree / Partially agree / Disagree / I don't know |
| | | *i. The vaccine does not always protect, so it should not be taken* |
| | | Agree / Partially agree / Disagree / I don't know |
| | | *j. After vaccination, I can stop wearing PPE and can continue to behave as before the COVID-19 pandemic* |
| | | Agree / Partially agree / Disagree / I don't know |
| SOURCES OF INFORMATION | | |
| 24 | How do you get information about topics related to COVID-19 and the COVID-19 vaccination process? | • Social media (Facebook, Instagram, Twitter, etc.)<br>• Official websites (World Health Organization, Institute for Public Health, Ministry of Health)<br>• TV/Radio<br>• Information portals<br>• Newspaper |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| | | • close circle of friends, parents, etc.<br>• Health workers<br>• Other (specify) | | | | | |
| 25 | For those who answer *Other* on the above question: Please indicate how you obtain information on topics related to COVID-19 and the process of the COVID-19 vaccination. | • | | | | | |
| 26 | On a scale of 1 to 5, where 1 is VERY EASY and 5 is VERY DIFFICULT, indicate how easy or difficult it was for you to: | | 1 | 2 | 3 | 4 | 5 |
| | | Find the information you need about the symptoms of COVID 19 | | | | | |
| | | Assess whether the information about the COVID-19 vaccine in the media is reliable | | | | | |
| | | You understand information about what to do if you think you have COVID-19 | | | | | |
| | | Find the information you need about the COVID-19 vaccine | | | | | |
| | | You understand the recommendations about the COVID-19 vaccination | | | | | |
| 27 | To what extent do you trust each of these media | Social media (Facebook, Instagram, Twitter etc.) | | | | | |
| | | Trust | Partially trust | Do not trust | I don't know | | |
| | | Official websites (WHO, Institute for Public Health, Ministry of Health) | | | | | |
| | | Trust | Partially trust | Do not trust | I don't know | | |
| | | TV/Radio | | | | | |
| | | Trust | Partially trust | Do not trust | I don't know | | |
| | | Info Portals | | | | | |
| | | Trust | Partially trust | Do not trust | I don't know | | |
| | | Newspapers | | | | | |
| | | Trust | Partially trust | Do not trust | I don't know | | |
| | | A close circle of friends, parents, etc | | | | | |
| | | Trust | Partially trust | Do not trust | I don't know | | |
| | | Health workers | | | | | |
| | | Trust | Partially trust | Do not trust | I don't know | | |
| | | Institutions and bodies at the national level | | | | | |
| | | Trust | Partially trust | Do not trust | I don't know | | |

| | | |
|---|---|---|
| 28 | What do you think is the best way to inform citizens about the COVID-19 vaccination? | • Public debates with experts<br>• Telephone conversation with experts<br>• Brochures in public places<br>• The possibility of online communication with an expert<br>• Posters in public places<br>• Promotions on social networks<br>• Other (specify) |
| 29 | For those that answer Other to the above question: What do you think is the best way to inform citizens about the COVID-19 vaccination? | • |
| THANK YOU | | |