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The COVID-19 Risk Perception: A Qualitative Study among the Population in an Urban Setting in Burkina Faso

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Abstract: Background: The population's adherence to public health recommendations depends on many individual and collective cultural, socioeconomic, institutional, and environmental factors and the perception of the risks involved. This study aimed to describe and analyze the perception of risk related to coronavirus in the general population. Methods: A qualitative, exploratory cross-sectional study was conducted in Ouagadougou, the capital city of Burkina Faso. It involved the general population (youth and adults, men and women, traditional practitioners, religious leaders, and opinion leaders). The data were analyzed using the thematic analysis method. Results: Respondents perceived COVID-19 as deadly, dangerous, and highly contagious. It emerged that respondents perceived themselves to be at risk of being infected by the virus. This risk exposure is linked to several factors. These include the dangerousness of the disease contaminated by direct contact, the feeling of vulnerability linked to working conditions (traders, exposing themselves and others to the disease), status (elderly, and sick,), gender (mobility of men compared to women), and the risk relationship (the individual perceived as being a potential danger to his family/relatives). Vulnerability depended on the immune status of the people (elderly people, pregnant women, and people with chronic diseases), working conditions (shopkeepers, and traders), and also socioeconomic categories (wealthy people). Conclusion: Policymakers and actors in the response to COVID-19 should develop communication strategies to better address ongoing challenges.

Keywords: COVID-19; risk perception; vulnerable people; people at risk; Burkina Faso

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1. Introduction

The African continent was one of the last to be affected after Europe and the United States by the coronavirus. Africa officially recorded its first case on 15 February 2020. In French-speaking West Africa, a significant number of cases have been recorded in Burkina, Côte d'Ivoire, and Senegal (Ministère de la santé 2020).

On 9 March 2020, Burkina Faso announced the first two confirmed cases of COVID-19 in Ouagadougou. The evolution of the pandemic has been characterized by an increasing trend in the number of infected persons and a spatial expansion of areas demonstrating community-based multi-hub transmission (Ministère de la santé 2020).

The rapid increase in the number of cases could be explained by the lack of knowledge of the disease and the failure to respect prevention rules despite the announced measures, including containment (Coulibaly and Tuo 2020).

To contain the spread of the virus among the population, Burkina Faso has implemented the preventive measures recommended by WHO to protect against human-to-human transmission of COVID-19, such as the temporary closure of schools and universities; the introduction of a curfew on the national territory; the closure of land and air borders; the closure of large markets; the confinement of affected cities; the banning of urban and

interurban public transport; social distancing; the banning of gatherings; and the establishment of a national health policy. The effectiveness of these measures depends on population adherence to public health recommendations (Betsch et al. 2020; van den Broucke 2021). Studies have shown that community adherence to recommended COVID-19 safety measures is relatively low (Defar et al. 2021; Ferdous et al. 2020; Yehualashet et al. 2021).

A study pointed out that compliance with disease control measures depends on many individual and collective cultural, socioeconomic, institutional, and environmental factors and people's perception of the risks involved (Mathonnat et al. 2021). In addition, the community's adherence to control measures is largely affected by their health belief towards COVID-19 and preventive measures (Yehualashet et al. 2021). Some authors say risk perception determines individual behavior (Calvert et al. 2010; Fayolle et al. 2008; Orobi and Raoul 2021). Orobi and Raoul (2021) indicated a positive influence of risk perception on the adoption of response measures against COVID-19.

An individual's perception of risk in the face of an unknown phenomenon, such as COVID-19, is shaped by danger and outrage as well as cultural and economic context. The number of people exposed, infected, and sick can be considered the danger, while the way the public and patients respond to messages about risk mitigation is related to outrage (Malecki et al. 2021).

Studies reported that during disasters, decisions are made based on the perceived risk to the community by policymakers (Vartti et al. 2009; Yeung et al. 2017). The perceived risk of individuals developing COVID-19 is considered the primary motive for change (Orobi and Raoul 2021) in the Health Belief Model, which assumes that the higher the perceived threat, the more an individual will change their behavior to avoid that threat (Muller and Spitz 2012). Similarly, the protective motivation theory posits that an individual's compliance with preventive measures depends on his or her level of risk perception of the current health threat. According to this theory, an increase in perceived threat severity, vulnerability to the threat, response effectiveness, and self-efficacy facilitates adaptive intentions or behaviors (Floyd et al. 2000).

Previous studies in Burkina Faso have often analyzed perceptions about the population's knowledge of COVID-19 (Mathonnat et al. 2021; Zongo et al. 2020). Mathonnat et al. conducted a survey on the perceptions of COVID-19 and the related behaviors among households in Burkina Faso in 2020. Their results showed that the majority of respondents take the epidemic very seriously and consider that the health consequences, and even more so, the economic consequences, will be serious. Zongo et al. conducted an online and quantitative study among people in Burkina Faso and abroad. Their objectives were to understand the perceptions of the population on COVID-19, their needs in terms of information, and their appreciation of preventive measures. Little is known about the community's perception of the risk of COVID-19. Investigation of COVID-19 risk perceptions in the general population could help in the fight against the future pandemic.

This exploratory study was designed to describe and analyze perceptions of COVID-19 risk in the general population in Ouagadougou during the lockdown in 2020.

2. Materials and Methods

2.1. Type of Study

This was a qualitative study on the perceived risk of the general population in the context of COVID-19. The qualitative approach allows for an understanding of a complex and detailed problem situation based on the meaning that the people who experience it give to it (Creswell and Clark 2006; Fortin 2010). It can be used to capture the opinions and representations of populations to better understand social and cultural phenomena that often escape quantitative methods (Patton 2002). From this perspective, the qualitative approach is the most appropriate for achieving the objectives of this research.

2.2. Study Population

The study participants were chosen based on the sociodemographic characteristics of the population (youth, man, woman, etc.) in the city and the people considered influential at the community level, such as traditional leaders. Convenient sampling was used. Overall, the study population was composed of different social groups: youth and adults, men and women, traditional practitioners, traditional leaders, religious leaders, and opinion leaders (municipal councilors, and association leaders).

2.3. Site Study

The research took place in Ouagadougou, the capital city of Burkina Faso. Burkina Faso is a West African country with a population of approximately twenty-one million in 2020. Ouagadougou is located in the center of the country, with a population of 2,453,496 inhabitants in 2020. It is subdivided into 12 boroughs and 55 sectors. The city was considered the epicenter of the epidemic in Burkina Faso because 80.81% of the total number of patients screened for COVID-19 were concentrated. As of February 10 2022, this number was estimated at 13,841, with 171 deaths (CORUS 2022). In addition, during the period of the study, the city concentrated on the public health facilities which took in charge of COVID-19 patients, and few health workers received training.

Five boroughs out of twelve were selected according to their geographical location (01 Downtown, 01 East, 01 West, 01 South, 01 North). In each of the boroughs, a sector and then a plot was randomly selected for data collection. These were Kamsonghin, Tanghin, Bissighin, Dassasgho, and Trame d'acceuil Ouaga 2000, respectively.

2.4. Data Collection

Data collection was conducted from 8–14 May 2020 by a team of five interviewers. At that time, there were no vaccines and no treatment. The entry point for data collection was a key informant community or religious leader who helped identify respondents. Given the epidemic, in-depth individual interviews were preferred to minimize contact and avoid clustering due to group discussions. In-depth individual interviews were conducted face-to-face with respondents while respecting distancing measures. The average length of the interviews was forty-five minutes (45 min). An interview guide was used by the interviewers during all interviews. The interviews were conducted in the participant's preferred language, primarily in Mooré and French. The objective was to describe and analyze perceptions of COVID-19 risk in the general population. Each participant was interviewed once. All interviews were recorded using a digital recorder after obtaining the respondents' authorization.

2.5. Data Analysis

All interviews were transcribed. All the transcripts were imported into QSR NVIVO 12 software. Then they were organized and coded according to a nonrigid thematic coding grid. Sections of text were labeled according to specific themes and areas of interest related to the study questions. A thematic content analysis was used to highlight categories related to the research objectives.

2.6. Ethical Issues

The overall protocol was submitted to the Health Research Ethics Committee of the Ministry of Health and received its approval (deliberation CERS N°2020-4-083). Voluntary and informed consent was requested from all participants after reading the information about the survey. All participants signed the consent form.

3. Results

3.1. Respondents Characteristics

The results presented here were collected from 65 respondents. They were 23 women and 42 men with a mean age of 38 $\pm$ 13.6 years. These respondents were from households

with an average size of 7 people. Most of these households had no pregnant women (77%), no one aged 60 or older (69%), and no one with a chronic disease (78.3%). On the other hand, a large proportion (80%) had at least one child aged 15 years or less.

3.2. Community Perception of COVID-19 Disease: Deadly, Dangerous, or a Non-Lethal Cold

Most respondents classified COVID-19 as a deadly disease due to the lack of a vaccine (data collection done before the vaccine was introduced) to fight this disease, "It is very dangerous and deadly because there is no vaccine against the virus" (Female, 20 years old, Shopkeeper).

For some, it was the most dangerous disease they ever experienced. The reason was that it was highly contagious and could be transmitted in daily contact. In that sense, a community leader said:

> *"There have been a lot of diseases that have come and gone. When we were young, we were told about measles and meningitis. But I think this disease is more dangerous than all those diseases we had before . . . Because it is too contagious. Compared to what they say, it's not like other diseases at all. You can't greet each other, you can't sit together, you can't even sleep together. It's bad enough . . . "*. (Community leader, 46 years old, City Councilor)

There were also those for whom the danger of the disease varied, according to the continents. The disease would be less dangerous in Africa because of the youth of its population who were less vulnerable.

> *" . . . we find that this disease is not as dangerous in Africa because the African population is mostly young, so this population is not too exposed . . . apart from that I can really say that in Africa this disease is dangerous, but in Africa, it is not really dangerous"*. (Man, 37 years old, Project Manager)

Besides all these points of view, some compared it to a non-lethal cold for Africans. Additionally, these had doubts or simply did not believe in the existence of COVID-19.

> *"My way of speaking is to tell you that I don't believe in the disease. If I am perhaps sick, I can protect myself because I know that if I don't do it, it can worsen my illness, otherwise, I don't believe in this illness. And even if it exists, it can't kill Africans because cold doesn't kill."*. (Male, 25 years old, Security Agent)

Some speeches showed that perceptions have changed over time. The disease was perceived as dangerous when it was still far away. However, this perception changed for some people after the cases were declared in Burkina Faso.

> *" . . . At first, everyone believed it was true and I wore my mask. When we learned that in China, France, in the USA it was killing, we were afraid. But then everyone understood that it was not what we believed and people gave up and went back to their habits. It's not because it doesn't exist, it's because it doesn't kill in the way they want us to believe. It can't kill Africans or I didn't say it doesn't exist."*. (Male, 25 years old, Security Agent)

3.3. Perceived Risk of Contracting Coronavirus

Most respondents perceived themselves to be at risk of contracting the disease. Traders considered themselves at high risk because of the number of people they were in contact with due to their work. They constantly handled banknotes and coins that passed through several hands. A shopkeeper revealed the following:

> *"I feel that I am a person at risk . . . because you don't know where misfortune can come from unless you are going to take the precautions of protection but you see that I am a trader. Even though the money I receive it has been said that the disease can be transmitted through that so you can't say that you are not a person at risk, especially in the exercise of our function we are people at risk unless we follow the barrier measures to avoid contracting the disease."* (Male, 42 years old, Trader)

In addition to the workplace, some respondents considered that all people remained vulnerable to the risk of contamination. A traditional chief explained he following:

> *"Everyone is considered to be at risk because even a child who contracts the disease can infect an adult, so at that moment everyone is at risk."*. (Male, 50 years old, traditional leader)

This respondent reinforced that idea: "*We can all get the disease easily, if one person is susceptible to the disease, we are all susceptible to the disease. We are all vulnerable*." (Female, 22 years old, student).

However, for some, climate conditions in Burkina Faso could help reduce the risk. For these people, the warm climate of Burkina should contribute to reducing the risk of spreading the disease. Because the virus is not resistant to higher temperatures.

> *"In countries where it is cooler, the disease is more prevalent than in countries where it is very hot, so it depends on the climate, and then here the sun is strong but there is no sun, and it is cooler. So that means that the virus does not tolerate heat, but where there is coolness the virus survives for a long time, so that can explain the fact that there are more deaths in countries where there is coldness"*. (Male, 48 years old, Director of secondary school)

The respondents had a perception of their risk of contracting the disease at home from their family members. For them, a family member could contract the virus outside and spread it to the other members of the family. A youth man stated the following:

> *"Often you are called to go out to the market, so we can say that the family is vulnerable because someone can go out of the house to get infected and then bring it home. And then there are the older brothers who go to work to feed the family, so they too can catch the disease and then come and contaminate the family."*. (Young man, student, 23 years old)

The risk of contamination of the family was permanent, especially because there are asymptomatic people. Additionally, a person may be infected several days before triggering the disease, which further increases the risk of contagion. One of the respondents said the following:

> *"We said it can be with you days before it shows up, so we can't know who is sick or not. If it's not triggered, then everyone is at risk of contamination whether you're big or small everyone can be a means of contamination for the other."*. (Male, 50 years old, traditional leader)

3.4. Perception of Who Is Most at Risk of Being Infected

The respondents identified the most vulnerable people to COVID-19. The elders were identified as the most vulnerable by all the respondents due to their weak immune systems.

> *"He has no strength left and his body can no longer regenerate the medicines that are given to him; in this case, a small disease catches him because his body does not have enough antibodies to defend itself, so he dies. Even young people."*. (Adult male, 49 years old, Teacher)

The vulnerability of the elderly is even greater when they have other chronic diseases, such as asthma and diabetes, for example.

> *"If they have a particular disease like asthma or they're diabetic or something like that. But for someone who has all these faculties and who is not sick, I'm sure that most people have made the coronavirus without realizing it."*. (Male, 42 years old, Trader)

Other people with chronic health conditions were also identified as the most vulnerable. Regardless of their age, if they are infected, they could develop serious complications.

> *"I know that even if you are young and you already suffer from another disease and if you contract the disease you can die, we also know that the elderly also suffer from other diseases, for example, I have diabetes, it started 6 months ago but before I did not know the*

way to a health center. But as my organism is already weakened if I catch another disease, it can be fatal because the organism is weak". (Male, 50 years old, traditional leader)

Pregnant women are vulnerable because of their pregnancy, which makes them more fragile and more exposed to other diseases, including COVID-19. According to some respondents, COVID-19 could have negative consequences on the outcome of the pregnancy.

"A pregnant woman is a vulnerable person, even if you are pregnant and you have malaria, you can have an abortion, so the pregnant woman is vulnerable and if you are already sick and you contract this disease again, you can die". (Man, 50 years old, traditional leader)

For others, men are also vulnerable because, unlike most women, men must go out to work which put them at greater risk of being infected. A woman argued the following:

"Here in Burkina, women, it is true, most women are fighters, but there are other people who do not accept that their wives work, so most women are at home, and it is the men who work, so surely the men are the ones who are too exposed.". (Female, 34 years old, businesswoman)

Traders are also vulnerable because they are in permanent contact with many people at their workplaces. One respondent stated the following:

"Since they are in contact with people all the time, if I take the example if someone comes to buy a product and the person has this disease and the person has not taken (preventive) measures, ... a trader also does not take the (preventive) measures, he neglects, they can contaminate each other, so they are more exposed.". (Female, 26 years old, student)

Finally, the wealthy people were recognized as vulnerable because the first cases were declared among them.

"Since this disease began it is the "grotos" (that is to say, the wealthy people) who are infected. There is no poor person among the sick, they are all rich people who are always in contact with everything fresh . . . in regular contact with everything fresh.". (Male, 24 years old, student)

4. Discussion

This study analyzed the perceptions of COVID-19 risk in the general population. The results allow an understanding of the perceptions that populations have of the risk but also the vulnerability linked to the COVID-19 pandemic.

The results indicated that COVID-19 is perceived as a deadly, dangerous, and highly contagious disease. Respondents recognized that it is a real disease, that it is transmitted by simple contact, and that there is no vaccine against the virus.

Similar results to our study have been observed regarding the dangerousness of the disease. In Senegal, a study showed that healthcare providers perceived the virus as dangerous, deadly, and highly contagious (Sougou et al. 2020). Another study in Senegal found that 9 in 10 participants perceived COVID-19 to be very or somewhat dangerous to their health (Kearney et al. 2022). In Ethiopia, nearly 9 out of 10 participants (87.5%) perceived COVID-19 as a serious disease (Asnakew et al. 2020). In Thailand, about 70% considered it a serious and dangerous disease (Srichan et al. 2020) and 50% of the participants considered it a serious and deadly disease in Iran (Honarvar et al. 2020). Similarly, two other studies conducted in China showed that the majority of people thought the COVID-19 epidemic was very serious and scary (Chen et al. 2020; Li et al. 2020). A study conducted in France indicated that 70% of respondents considered COVID-19 to be particularly contagious and severe, much more than seasonal influenza. This study highlighted that risk perception was more acute among women (UMR Vitrome et al. 2020).

Therefore, this high-risk perception could lead the population to respect preventive measures (Cipolletta et al. 2022). As some studies pointed out, individuals who perceive a health problem as serious are more likely to adopt preventive behaviors to avoid its occurrence or to reduce its severity (Champion and Skinner 2008). At the time of the study,

there were no vaccines. Nowadays with the availability of the vaccine and the advance in sciences and the spread of fake news, their risk perceptions may have changed and their preventive behaviors too.

The findings showed that respondents perceived themselves to be at high risk of becoming infected depending on some factors. These included the number of outside daily contact, working, and gender conditions.

Similar factors were found in other studies. Reddy et al. found that risk perception varied by age, population group, employment status, and dwelling type (Reddy et al. 2020). A study conducted in France showed that the perception of COVID-19 risk was strongly related to time spent away from home. Thus, people who went out for more than two hours rated their risk of infection nearly 9 percentage points higher than those who went out for between one and two hours. Conversely, the risks of infection were perceived as lower by people who did not go out at all, or, on the contrary, went out most frequently (UMR Vitrome et al. 2020). Sougou et al. in their study mentioned that married respondents consider themselves more likely than single respondents to be at risk (Sougou et al. 2020).

Our findings also identified the most vulnerable people. Vulnerability according to the respondent depended on the immune status (such as elderly people, etc.), the working conditions (shopkeepers, traders, etc.), and the social status (wealthy people, etc.).

The elderly people, those with chronic health conditions such as asthma and diabetes, were identified as vulnerable individuals with a high risk of contracting COVID-19. Similarly, the elderly and people with other chronic diseases would constitute the risk groups in other studies (Coulibaly and Tuo 2020). Similar results indicated that people with comorbidities are at highest risk for COVID-19 compared to the rest of the population (Honarvar et al. 2020; Mya et al. 2020). COVID-19 would lead to higher mortality in elderly people and patients with chronic diseases, including coronary artery disease, diabetes, chronic lung disease, and hypertension (Tavakoli et al. 2020). This perceived vulnerability may positively influence the uptake of recommended measures among those considered at risk. Reed-Thryselius et al. found that individuals with high-risk perceptions more frequently reported practicing protective behaviors against COVID-19 (Reed-Thryselius et al. 2022). Similar results were found by other studies (Yıldırım et al. 2021). However, people may not feel vulnerable or concerned, even though they are active agents of virus transmission. In a study conducted in South Africa, study participants revealed that youth do not see themselves as being in danger of being infected with the virus that caused the COVID-19 pandemic. This study found a denial of the existence of the disease and that the youth believe they are immune to COVID-19 (Schmidt et al. 2021).

The social condition according to respondents was a factor of vulnerability, especially wealthy people who are regularly in contact with what is "cool", i.e., air conditioning at the office, home, and car. The main explanation could be due to communication at the beginning of the pandemic in the country. Indeed, the first cases publicly declared by the government in Burkina Faso were people socially recognized to belong to either the political class or high socioeconomic categories (Douce 2020). This situation contributed to shaping these superstitious beliefs around high-risk groups. This revealed how individuals' risk perceptions about certain diseases could be altered by media (Choi et al. 2017). Other studies in Africa found similar results. Studies have shown that widespread community beliefs about coronavirus indicate that it affects only the affluent living in wealthy urban communities (Essouga et al. 2020; Musiki Kupenza et al. 2020; Seck 2021) white people, elders, and rich people (Essouga et al. 2020). A study conducted in Nigeria revealed the same perceptions that the virus was a disease of the rich that could not affect the poor (Julius 2020). In South Africa, wealthy "white" South Africans have been accused of transmitting the disease, but also people of Asian origin (Schmidt et al. 2021).

Limitations of the Study

Although the study was conducted in an urban setting, the epicenter of the epidemic, the rural areas were not included. At the time of the data collection, the capital city

was under lockdown, which restrained mobility outside this area. Findings could not be generalized to the entire country instead of similar areas. Despite these limitations, the study brought attention to perceived risks that may affect adherence to preventive measures such as vaccination.

5. Conclusions

Our study analyzed coronavirus-related risks in the general population in Ouagadougou, the capital city of Burkina Faso. It helped to understand the population's perception of risk in the context of coronavirus disease. It contributed to scientific knowledge by providing early data on risk perception of the COVID-19 pandemic in a low-income country.

It showed that respondents perceived COVID-19 as deadly, dangerous, and highly contagious. Respondents also identified the elderly, those with chronic medical conditions, and those with high socioeconomic levels as vulnerable.

These perceptions could minimize the risks related to COVID-19 and could lead to non-compliance with preventive measures.

Understanding the population's perceived risk could help policymakers and actors in the response to COVID-19 to develop communication strategies to better address ongoing challenges, such as adherence to vaccination.

Future research should focus on the identification of appropriate messages for behavior changes and adequate channels of communication.

Finally, strategic preparedness and response to future epidemics should develop appropriate communication by policymakers and other actors involved in the response.

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Institutional Review Board Statement: The study was conducted following the Declaration of Helsinki and approved by the Health Research Ethics Committee of the Ministry of Health in Burkina Faso and received its approval (deliberation CERS N°2020-4-083). Participation in the study was completely voluntary, and details about the study's objectives and significance were provided to participants before completing the survey.

Informed Consent Statement: Informed consent was obtained from all subjects involved in the study.

Data Availability Statement: The data presented in this study are not publicly available due to ethical reasons. Participants did not give permission for sharing data.

Conflicts of Interest: The authors declare no conflict of interest. The funders had no role in the design of the study; in the collection, analyses, or interpretation of data; in the writing of the manuscript, or in the decision to publish the results.

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