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Risk Seeking Attitudes towards COVID-19 Vaccination and the role of HCPs in Norway and Pakistan

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The health impact of COVID-19, the disease caused by the SARS-COV2 virus, varies significantly between age groups. While most people suffer mild to severe symptoms and recover without needing special treatment, at risk groups such as the elderly and people with co-morbidities have been tragically hit, especially in the early phase of the 2020 pandemic. In this context, governments have facilitated an unprecedented effort to fast-track, develop and roll out a worldwide vaccination programme. Vaccination is seen as a life-saving intervention for at risk groups and a health benefit for larger segments of the population. Most countries share a commitment to large-scale vaccination to counter COVID-19. However, despite the global nature of the effort, variations have been observed on the ground both in terms of strategy, delivery and acceptance. In addition, several risks associated with the vaccination for COVID-19 have been discussed, including within the medical profession. This paper presents a qualitative analysis of risk perception approached through the lens of medical intervention by Healthcare Professionals (HCPs) in charge of administering the COVID-19 vaccination. It is based on 20 semi-structured interviews conducted in 2020 with HCPs from Norway (N10) and Pakistan (N10). The research points to several casualties and motivational conversations with HCPs are the impetus for people to take the COVID-19 vaccination. Myths and unavailability of reality and truth are the main concerns observed in Pakistan. HCPs from Norway, on the other hand, have indicated that the willingness of the patients and support from family members are key motivations to take vaccines in Norway. However, the risk-seeking attitude of people is influenced by the scare of side effects and negative media reports, and lack of trust in vaccines. This research concludes on the need for more research for determining the risk-seeking attitude of people outside the Western hemisphere before and after taking the COVID-19 vaccination.

Keywords: Risk seeking attitude, COVID-19, Vaccination, risk communication, Healthcare professionals, Norway, Pakistan.

1. Introduction

With approximately 254 million people impacted, the COVID-19 pandemic created unprecedented challenges to many healthcare systems throughout the world. The disease is caused by the SARS-COV-2 virus (Jin et al., 2021). A defining feature of SARS-COV-2 is that it is highly transmissible (Khalid, & Ali, 2020). This situation called for large-scale intervention, using vaccination as the key disease control mechanism (Price et al. 2021). Vaccination is a well-known intervention to reduce the burden of disease, death, and disability. It has been used effectively in containing/eradicating several diseases such as polio, influenza, diphtheria, MMR (Measles, Mumps, and Rubella), tetanus, hepatitis B, and pertussis (Holt et al. 2016; Khan, et al., 2020). At the height of the pandemic many feared that COVID-19 vaccine hesitancy could cause delays and become a major obstacle to global health (Afzal, et al. 2021). Ethical implications were also discussed, such as the impact on occupational health risks for healthcare professionals (HCP) who were in close contact with infected individuals (Khan, et al., 2020). Healthcare professionals have a significant role in guiding and leading people to accept the COVID-19 vaccination (Tran, et al., 2021). However, there is still very little comparative analysis about the direct experience of healthcare professionals in communicating the risks and benefits of COVID-19 vaccination. The purpose of this paper is to identify the attitudes and behaviours of people toward the COVID-19 vaccine through the lens of the direct HCP experience. Based on the different conditions experienced in Norway and Pakistan, the study attempts to identify the factors that drove people to take or refuse the COVID-19 vaccination. Furthermore, the study also attempts to identify channels of communication, for

instance whether people take advice for receiving COVID-19 vaccination from any healthcare professionals such as doctors, nurses, pharmacists, etc. Finally, this study addresses the role and challenges faced by HCPs operating in Norway and Pakistan, including the larger societal context and discussions about COVID-19.

2. Concept and discussion on Risk Science in Healthcare

Risk perception and communication play a major role for vaccine acceptance (Bouder 2015; Holt et al. 2016).

2.1 Risk Perception:

Risk perception is the subjective judgments that people make regarding the characteristics, severity and impacts of the risk. Lay perceptions of real risk situations often differ from those of experts (Slovic et al. 1982). Subjective perceptions are affected by several individual, cognitive, affective, and contextual factors (Tversky and Kahneman 1973; Slovic 2010). Vaccine perception is no exception (Bostrom 1997). Similarly, the risk itself may also be affected by affective factors, which include the mood, feelings, and emotions of the individuals (Siegrist & Árvai, 2020). Contextual factors may also influence the risk perception of vaccines, including the availability of alternative situations as part of the information sources, and the framing of the risk information (Bostrom 1996; Evans et al. 2023). Finally, the perception of individual vaccine risks includes demographic factors such as age, gender, personality traits, and previous experiences with the individuals (Holt et al. 2016).

2.1.1 Risk-Seeking Attitudes:

A distinctive stream of research is looking into the cognitive underpinnings of risk acceptance, more specifically what motivates risk- seeking attitudes. A risk-seeking attitude refers to a situation where an individual is willing to accept greater economic uncertainty in exchange for potentially higher returns (Yu et al., 2021; Cordina, & Lauri, 2021). A significant amount of literature has presented that the risk attitudes for various people vary significantly among people at different times. Risk-seeking is not directly related to the probability of harm. Chan et al. (2020), have indicated that a considerable body of knowledge suggests that the risky prospects are relatively not linear concerning the probabilities. For example, people usually tend to remain in terms of the known probabilities instead of the unknown probabilities (Page et al., 2014). The consequence is that external factors such as information, mediation and communication may significantly impact on risk-seeking attitudes.

2.1.2 Risk-Seeking Attitudes and Fourfold Patterns:

Cognitive features associated with people's attitudes have been well studied (Tversky, &Wakker, 1995). Trautmann and van de Kuilen, (2018) have attempted to define and present the recent developments in the common features of people's attitudes towards risks, The risk payoffs have been considered significant in terms of normal monthly income. The risk-seeking attitude for smaller probabilities in terms of gains has been considered to be inconsistent concerning the observations made in the risky ventures (Miller et al., 2021). Faccioli et al. (2019) have attempted to explain the combination of risk aversion as well as risk-seeking attitudes concerning the utility function of the convex and concave regions. However, it is important to note that the fourfold pattern arises in terms of wider payoffs, which may not be explained in terms of the utility function of the money (Gutteling, & Wiegman, 2013).

2.1.3 Risk Communication in Healthcare:

Healthcare workers, agencies, and professionals have a strong responsibility for risk communication to the people, the general public, and individuals involved in the process (Ab Aziz et al., 2019). This is also crucial in the COVID19 context (Balog-Way and McComas 2020). It is important to note that risk communication attempts to improve the understanding of risk, which ultimately promotes better decision-making among healthcare workers and provides clinical management practices (Zhang et al., 2020). Digitalisation and more generally technological advancements create opportunities for direct access and transparency, which in turn reinforce the role of HCPs as trusted mediators' purveyors of contextualised risk communications (Bouder et al. 2015).

2.1.4. Role of HCPs in Vaccine Risk Communication:

Health care professionals have a critical role to play in supporting effective vaccination decisions (Holt et al. 2016). When patients visit clinical settings, HCPs- including doctors, nurses, and hospital staff are essential trusted channels about the nature and management of COVIS-19 risks (Balog-Way and McComas 2020). HCPs can easily become an influential source of information about covid-19 and other vaccines.

3. Research Methodology

Four questions were developed to explore the relationship between risk-seeking attitudes and the role of HCPs:

1. How do HCPs view the drivers influencing people to take the COVID-19 vaccines?
2. How do HCPs view the barriers that refrain people from taking the COVID-19 vaccines?
3. How do HCPs view the enabling factors that underpin risk-seeking attitudes regarding the COVID-19 vaccination?
4. How do HCPs experience challenges in communicating COVID-19 vaccination?

One key challenge of the COVID-19 pandemic response has been the need to reconcile global action with a variability of national dynamics and conditions. Choi et al. (2020) have pointed to gross differences across countries, in particular the fact that unlike affluent countries, middle and low-income countries have struggled to get adequate access to COVID-19 vaccination. Tahir et al., (2021) also highlight societal barriers, in particular communication challenges such as language and culture. In rural areas, for instance, the vast majority of the people are illiterate or do not speak the dominant language, which creates additional difficulties to communicate about the impact of the vaccine (Schmelz & Bowles, 2021).

An exploratory case study approach (Yin 2009) was therefore adopted to contrast opposite cases. We selected two countries, Norway and Pakistan. Norway as a 'perfect' baseline case: it is a high-income country where the vaccination programme has enjoyed a smooth delivery and high take up rates (Skjesol and Tritter 2022). By contrast Pakistan is a middle-low-income country where vaccination initiatives have posed more burden on society (Khan et al., 2020). However, it is required that COVID-19 acceptance should be identified in Norway. Unlike Norway Pakistan has also experienced high levels of reluctancy in accepting COVID-19 vaccination (Khan et al., 2020). For example, many parents in Pakistan are not convinced about the merits of COVID-19 vaccination (Miller et al., 2021). There are also practical reasons for the lack of coverage in various parts of Pakistan. For instance, logistical barriers, inefficient healthcare professionals, and lack of awareness among poor people living within the country are some of the most important factors that can contribute to vaccine insertion among people in Pakistan (Aziz et al., 2021).

3.1 Research design

A total of 20 interviews were conducted. 10 healthcare professionals from each country were invited to participate in a semi-structured interview following a conventional social science approach (Sovacool et al., 2018). Male and female respondents made up 50 percent of the sample in each nation. The interviews were listened to, and manually coded. The design ensured voluntariness and confidentiality. Finally ethical approval was obtained. The data was triangulated with a rigorous review of research and media sources.

4. Results

For sake of clarity, the presentation of the results follows the research questions. A thematic analysis of the interviews is presented for both countries separately. For each question the main two themes that emerged have been reported. Given the small size of the sample this allows to depict a clear picture of the dominant aspects.

4.1 Norway

Question 1: 1. How do HCPs view the drivers influencing people to take the COVID-19 vaccines?

Theme 1: Depends on the patients' whims

Three male respondents raised this aspect implicitly suggesting there is little predictability about existing drivers. One Respondent for instance stated: *"It depends on the patient" (RP, 18)"*

Theme 2: HCPs play a key role.

This response is the second most frequent. Both family discussion and motivational conversations between HCPs and patients encourage patients to take up the vaccine. Female respondents in particular have stressed this aspect. One of the Respondent Mentioned:

"They were convinced after I counselled them about the benefits of getting vaccinated therefore, they showed less resistance" (RP, 16)"

Question 2: How do HCPs view the barriers that refrain people from taking the COVID-19 vaccines?

The respondents provided varying responses to these questions, touching on two main themes

Theme 1: Scare of side effects generally linked to negative media reports.

Two out of ten respondents mentioned this aspect with an equal male-females split. One of the Respondent Mentioned:

"Scare of side effects of COVID-19" (RP, 11)"

Another respondent has mentioned that:

"Negative media reports provide bad consequences" (RP, 17)"

Theme 2: Lack of trust in the vaccines

Two out of ten respondents mentioned the lack of trust in vaccines as one of the most prominent issues with an equal gender split. One of the Respondent Mentioned:

"They lack trust in vaccine and fear that they might get ill because of this" (RP, 12)"

Question 3: How do HCPs view the enabling factors that underpin risk-seeking attitudes regarding the COVID-19 vaccination?

Two main themes emerged.

Theme 1: Attitude of the people to participate in the vaccination process.

The results of the study have indicated that the attitudes of the people who have been exposed to the vaccination process have influenced them to take the COVID-19 vaccine.

Theme 2: People are convinced that inspiration from family members drives them to take the COVID-19 vaccine.

As family members were a key driver of positive perception, so were they also of risk-taking attitude. Some limitations were observed, however. **O*ne of the Respondent Mentioned for instance:***

"Yes, some were convinced but most were still not willing to get themselves vaccinated." (RP, 15)

Question 4: How do HCPs experience challenges in communicating COVID-19 vaccination?

Respondents mostly pointed to external causes:

Theme 1: Lack of information and awareness about COVID-19 vaccination

The results of the study have indicated that people do not have much information and awareness about vaccine take up. This theme has appeared in a third of the responses.

Theme 2: Negative propaganda about COVID-19 vaccination

The results of the study have indicated that the HCPs perceive problems of negative propaganda while providing COVID-19 vaccines. One in five respondents mentioned this aspect.

4.2 Pakistan

Question 1: How do HCPs view the drivers influencing people to take the COVID-19 vaccines?

The two main themes that emerged were as follows:

Theme 1: Conversations with HCPs play a vital role in favour of vaccination:

This theme was mentioned by three respondents, two males and one female. One respondent mentioned:

"After so many casualties, yes, I believe that conversation with patients affects their willingness to take vaccination?" (RP, 9)"

Theme 2: Motivational conversations with the patients encourage them to take the vaccine.

Two respondent one man and one woman specifically mentioned the role of motivational conversations. For example, one respondent***:***

"Motivate the patient to take the vaccine through motivational conversations." (RP, 4)"

Question 2: How do HCPs view the barriers that refrain people from taking the COVID-19 vaccine.

The responses were numerous and varied significantly. Among the key themes:

Theme 1: Myth that people die in 2 years after taking the COVID-19 vaccine.

One striking result was the prevalence of myths that influence people to take vaccines. 4 out of ten HCPs (3 males, one female) mentioned this aspect.

One of the Respondent Mentioned:

"They believe in absurd myths" (RP, 8)"

Another respondent mentioned that:

"It's 50/50, the society we live in is largely controlled by beautiful myths and still there are people not believing those. So can't say much" (RP, 1)"

In particular a prevalent myth in Pakistan seems to be the fact that people would die after two years of taking the vaccine.

Theme 2: Unavailability of the reality and truth

The flipside of myth, i.e., the unavailability of reliable information, was also mentioned by two respondents (one male one female). One respondent also vented frustration:

"Sometimes it gets frustrating when people are not flexible enough to understand the truth" (RP, 7)"

Question 3: How do HCPs view the enabling factors that underpin risk-seeking attitudes regarding the COVID-19 vaccination?

The two main themes that play in favour of risk-seeking attitudes are the following:

Theme 1: After making the vaccination compulsory, people are willing to accept the vaccine.

Three respondents (two males, one female) mentioned this aspect, which is about practical compliance motivations. One of the Respondent Mentioned:

"Now they are willing to get vaccinated because vaccination card is made compulsory for many offices works, international travels, etc" (RP, 10)"

Theme 2: Friends, family members, colleagues, and other people provide inspiration to get vaccinated.

This theme, mentioned by three respondents (one male two females), can be considered to be the second most prominent factor. Friends and family are the main counter-influence able to mitigate the negative impact of unavailability of scientific information. One of the Respondent Mentioned*:*

"Family friends' colleagues are almost vaccinated and that too with not much resistance" (RP,5)"

Question 4: How do HCPs experience challenges in communicating COVID-19 vaccination?

The top two types of answers were as follows.

Theme 1: Lack of awareness of the people who have to take the COVID-19 vaccine.

This theme appeared in two responses, one male one female. They indicated that *"due to lack of awareness." (RP, 4)* people were often unaware of the requirements to get vaccinated in the first place.

Theme 2: Uncertainty about the side effects of COVID-19.

To respondents, one male one female also indicated that people were confused about the magnitude of possible side effects. *One of the Respondent illustrated this fact:*

"It is more about the uncertainty about side effects the vaccine may cause. Many people compare this to the flu vaccine which resulted in side effects. Little access to knowledge increases uncertainty among patients. Patients hear others who received the vaccine got side effects. Lots of propaganda out which is incorrect information." (RP,6)

5. Discussion

The purpose of this study was to learn more about risk-seeking attitudes toward COVID-19 vaccination in Norway and Pakistan. We wanted to capture the HCPs views on key drivers, barriers, willingness to take risk and key communication issues. The study shows that in both countries perceptions as well as risk-seeking attitudes largely depend upon trusted sources of information. These are of two types: family, friends, colleagues, and, on the other hand, HCPs. In both countries HCPs are in a strong trusted position that enables them to positively influence the take up of vaccines. This reality extends previous findings from European countries (Bouder et al. 2015) to lower income countries.

The main difference between the two countries relates to the perceived source of the misinformation about the vaccine. While in Norway HCPs primarily blame the media, Pakistani HCPs are more focused on myths and

"ignorance". Content analysis of Norwegian and Pakistani sources support this dichotomy. For instance, we identified several conspiracy theories in Pakistan particularly associated with renowned politicians that indeed may spread myths (Perveen et al., 2022). While Norwegian HCPs see their role primarily as offering reliable information, Pakistani respondents are also more likely to present the challenge of communication in terms of offering "truth" .

The attitude of HCPs is therefore not identical in both countries. The Pakistani respondents seemed more confident that they can change the outcome through direct intervention, correction and providing the truth. Thus, suggests that a paternalistic conception of the relationship between doctors and patients (Holt et al. 2016) is still predominant. In Norway HCPs, although less paternalistic in their attitude, seem at a loss when it comes to taking risk perceptions on board, implying that patients' attitudes are hard to predict.

The results also point to distinctive problems associated with HCPs in Pakistan while providing COVID-19 vaccination. These include a lack of awareness of the people taking the COVID-19 vaccine and uncertainty about the side effects of COVID-19. Furthermore, providing information in the Pakistan healthcare system calls for improvements in the advertisement processes and walk-in vaccination facilities and reducing waiting queues for patients.

As far as Norway is concerned, more attention should be paid to scare of side effects and negative media reports, and lack of trust in the vaccines compared to the common conception that Norway is a high trust country where smooth delivery can be expected. Therefore, providing reliable information to the people through appropriate channels and designing effective policies at the governmental level should be the strategies and communication styles adopted by HCPs in Norway

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6. Conclusion:

This small-scale exploratory study offers valuable yet limited insights into the similarities and differences that characterize risk-seeking attitudes in high and middle-lower income countries. Although this is beyond the scope of the study this research can also prompt some discussions about designing risk communication beyond the Western hemisphere. It urges us to carry out more risk research in African, Middle Eastern, and Asian countries to better understand relational factors such as perception, attitudes and trust channels. This may result in more effective risk communication on the part of HCPs.

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Appendix A.

a. Summary of Results:

Table

Identified Themes	Frequency of themes	Percentage of themes	Percentages of Responses	
			Male	Female
Results from Pakistan				
1. After several casualties, patients consider a conversation with the HCPs to be effective for taking the vaccination.	3	30%	2	8
2. Motivational conversations with the patients encourage them to take the vaccine.	2	20%	1	9
3. The myth is that people die in 2 years after taking the COVID-19 vaccine.	4	40%	3	7
4. Unavailability of the reality and truth	2	20%	6	4
5. After making the vaccination compulsory, people are willing to accept the vaccine.	3	30%	5	5
6. Friends, family members, colleagues, and other people provide inspiration to get vaccinated.	2	30%	2	8
7. Lack of awareness of the people to take the COVID-19 vaccine.	2	20%	3	7
8. Uncertainty about the side effects of COVID-19.	2	20%	6	4
9. Bring improvements in the advertisement processes	2	20%	5	5
10. Walk-in vaccination facilities and reducing waiting queues	2	20%	2	8

Results from Norway				
11. Depends on the willingness of the patients	3	30%	3	7
12. Family members encourage the patients.	1	10%	6	4
13. Scare of side effects and negative media reports	2	20%	5	5
14. Lack of trust in the vaccines	2	20%	2	8
15. The attitude of the people to participate in the vaccination process	2	20%	1	9
16. People are convinced that inspiration from their family members drives them to take the COVID-19 vaccine.	2	20%	7	3
17. Lack of information and awareness about COVID-19 vaccination.	3	30%	4	6
18. Negative propaganda about COVID-19 vaccination.	2	20%	9	1
19. Providing reliable information to the people through appropriate channels	2	20%	2	8
20. Designing effective policies at the governmental level.	2	20%	7	3