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RESEARCH PAPER

Assessing Risk Perception about COVID-19 in Quetta City, Balochistan

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ABSTRACT

The objective of this study was investigate the landscape of COVID-19 risk awareness, Risk Perception and preventive behaviors, regarding COVID-19 in Quetta. The way the general public perceives biological hazards significantly influences the manner in which health emergencies are addressed. It is a cross-sectional research with 323 sample size obtained through simple random sampling, data was collected through structured survey and analyzed in SPSS (Version.23). The 78.6% respondents acknowledged the existence of COVID-19 and 54.8% attributes it to natural disasters. Most of respondents (40%) get to know about COVID-19 from television and 35% consider exerts opinion most trusted information source. 83.6%, perceived that getting infected with the coronavirus can be serious. As concerns (71.2%) about future pandemics linger, sustained public health efforts are imperative. The study recommend the need for sustained Public Health efforts, the preparedness planning, and collaborative actions to navigate the complexities of the ongoing pandemic and those that may arise in the future

KEYWORDS Community Perception, COVID-19, Pandemic Preparedness, Preventive Behaviors, Risk Awareness

Introduction

On December 31, 2019, Chinese authorities notified the World Health Organization (WHO) about a disease outbreak with pneumonia-like symptoms in Wuhan City. Subsequently, on January 30,2020, the WHO designated the COVID-19 outbreak as a global public health emergency in response to the identification of cases beyond China's borders (Asnakew et al., 2020). On January 3, 2020, Pakistan identified its initial case of COVID-19. Subsequently, spanning the period up to July 5, 2023, the nation meticulously documented an aggregate total of 1,580,631 confirmed cases of COVID-19, accompanied by a consequential fatality tally of 30,656 within this temporal expanse (WHO, 2023). The confirmation of the initial COVID-19 case in Quetta, Balochistan occurred on March 10, 2020, as substantiated by (Yaseen, et al. 2020; Ilyas et al., 2020) subsequent to this, up until July 10, 2023, a cumulative total of 36,068 confirmed cases in Quetta have been officially reported (Government of Pakistan, 2023).

The way the general public perceives biological hazards significantly influences the manner in which health emergencies are addressed, impacting strategies related to risk management and communication. Consequently , the public's understanding of health- related risks can wield influence over market dynamics, public policy formulation, and individual behavioral patterns (Motta Zanin et al., 2020). Risk

perception pertains to the way individuals understand and construe the possible dangers or risks linked to a specific event or circumstance, such as the situation presented by the COVID-19 pandemic (Bang, 2008; Samadipour et al., 2022). To understand public health behaviors it's crucial to track public perceive risks and associated factors. The health behavior decision theory suggest, more people adopt preventive measures if they perceive higher risk level of infection. So, for effective risk management of pandemics including measures like vaccination and social distancing it's important to understand risk perception initially (Lee et al., 2023). In Quetta City, where healthcare institutions may be underfunded and resources scarce, it is nevertheless imperative that the public take preventive action to stop the spread of COVID-19. According to studies, the degree to which people follow the preventive guidelines has a big impact on how successfully public health initiatives handle a pandemic. People's knowledge about COVID-19 is probably going to have an impact on how strictly they adhere to the precautions. Since COVID-19 is still a problem in many areas, including Quetta, it's critical to find out how the locals view the pandemic, particularly in light of the possible lack of resources to contain further outbreaks. Measuring public perception is also essential for finding any gaps and bolstering continuous efforts to implement the best preventive measures against COVID-19.

Literature Review

The number of frameworks related to psychology and health education highlights the importance of risk perception in shaping behaviors. According to Adane Asefa et al. in 2020, people adaptation of preventive behaviors is associated with their perceiving level of high risk which in turn affects the chances of getting infection. Therefore, reliable data access about public perception associated with COVID-19 is crucial for creating best suitable risk communication strategies (Adane Asefa et al., 2020).

Novel coronavirus (COVID-19) various studies on perceived risk have showed conflict in their findings. In the USA one of the survey was conducted in which 1592 respondents showed diverse risk perception, according to them indoor activities were much more risky, then that of outdoor activities along with healthy environment with health care approach. These perception was also influenced by age, income and race, while the requirement of targeted interventions were highlighted (Erchick et al., 2022).

In the diverse global context different studies have irradiated factors which shape COVID-19 risk perception in different ways. Ethiopians has uncovered high risk perception due to community based myths and suboptimal practice (Zarnab & Muzaffar, 2023; Aliyi et al., 2022), in the same manner one more study by (Asnakew et al., 2020), revealed high vulnerability, seriousness in perception and media consistency in Ethiopia. The Nigerian Studies showed requirement of tailored health promotion with strong awareness but low risk perception (Adenike et al., 2020). Another study by Yemenis reveled nuanced understanding (Halboup et al., 2023), The south Koreans has emotional and analytical measurements of risk perception (Lee et al., 2023). The French studies highlights sprouting risk perception (Attema et al., 2021), Whereas another study of Italy shows that there was media encouragement (Motta Zanin et al., 2020). In Saudi and Middle East respondents has seen high risk perception (Abdel et al., 2020), and the Iranian studies showed that there was room for improved awareness regarding risk perception (Samadipour et al., 2020).

Thus, the primary objective of this study is to examine the perceptions of general population in Quetta city across three key domains: COVID-19 risk awareness and knowledge, Risk perception related to COVID-19, and prevailing preventive behaviors.

By investigating these dimensions, our study seeks to provide valuable information about the community's understanding of the pandemic, their attitudes towards associated risks, and the efficacy of their preventive measures. The findings will not only enhance our understanding of public response in Quetta city but also contribute to informing targeted interventions, shaping effective communication strategies, and aiding decision-making for public health authorities and policymakers not only for current pandemic but for future as well.

Material and Methods

The research employs a cross-sectional research design to assess COVID-19 risk perception in Quetta city. The sampling technique used for data collection was probability sampling with simple random sampling. The total number of households was (276,711) according to the Population Census of 2017. The sample size obtained by using Arkin and Colton (1963) formula.

$$n = \frac{NZ^2 \times P \times (1 - P)}{Ne^2 + \{Z^2 \times P \times (1 - P)\}}$$

This formula took into account a degree of variability of 30% (0.03), a Confidence level of 95% (1.96), and a level of precision of 5% (0.05), resulting in a calculated sample size of 323 participants.

Data was collected through structured survey covering COVID-19 risk awareness, risk perception, and preventive behaviors. Multiple-choice items and Likert-scale questions were employed to compute these aspects. To summarize the survey responses descriptive statistics were applied.

Ethical considerations were Paramount, including obtaining ethical approval, ensuring informed consent, and safeguarding participant privacy throughout the research process.

Results and Discussion

Respondent's Profile

The gathered dataset encompasses a range of demographic and socio-economic variables. Participants' ages spanned from 17 to 74 years, with an average age of 32. The dataset indicated an average household size of 10 individuals, varying from 3 to 48 members. Gender distribution revealed that 76% of respondents were male, while 24% were female. The majority of participants (96%) reported no disabilities. In terms of marital status, 56% were single, and 43% were married. In terms of education, 50.5% held a Master's degree, 18.6% had completed secondary or High School, while smaller proportions fell under other categories. Occupation-wise, 28.2% were unemployed, 24.1% held temporary employment, 36.8% held permanent employment, and 10.8% were engaged in daily wage labor. The average monthly household income was recorded as 78,783 Rupees, approximately 278.41 USD, as of May 1, 2023. Where one USD equaled Rs 283.3876 (State Bank of Pakistan, 2023).

COVID-19 Risk Awareness and Knowledge

In the context of the global COVID-19 pandemic, understanding the level of risk awareness and knowledge among the public is of paramount importance in effectively

managing the spread and impact of the virus. The section of article delves into the nuanced landscape of COVID-19 risk awareness and knowledge by exploring the dimensions of information source, the authenticity of information sources, belief in COVID-19's existence, interpretations of its origin, insights into transmission modes, awareness of symptoms, and adaptation of preventive measures.

The provided Table 1 outlines the diverse array of sources from which individuals have gathered information regarding COVID-19 preventive measures. The data is presented as percentages, offering insights into the distribution of information-seeking behaviors among respondents. Notably, television broadcasts have been a significance source, with 47.2% of individuals relying on this medium for information. Traditional channels such as newspapers or news websites have contributed to the awareness of approximately 9.1% of responds. In contrast, health professionals have directly included 7.9% of individuals. Government social media pages have played a role in informing 8.3% of the population, indicating the significance of official communication channels. Additionally, community discussions and social media platform have served as source for 2.8% and 22.2% of respondents, respectively. It's worth mentioning that a small fraction of 1.2% did not obtained COVID-19 information from any of the specified sources.

Table 1
Source of Information about COVID-19 Measures

Variable	Frequency	Percentage (%)
Television	129	40
Social media	65	20
Newspaper or news site	31	10
Health professionals	29	9
Government social media pages	30	9
Community discussions	16	5
Radio	11	3
None	12	4
Total	323	100.0%

The presented Table 2 offers a comprehensive view of the perceived authenticity of various sources of information about COVID-19. Each source is accompanied by the percentage of respondents who consider it reliable. Notably, the opinions are diverse, reflecting different levels of trust in different channels. Experts, including epidemiologists and doctors, hold the highest level of credibility at 35.3%, highlighting the significance of professional insights. Government courses including agencies involved in calamity management, are trusted by 13.0% of respondents, emphasizing the role of official communication. Interestingly, Social media garners a substantial 19.5% as a source of information, indicating the influence of digital platforms. Close contacts like friends and relatives are considered authentic by 8.4%, underlining the role of personal networks.

Meanwhile, other sources such as national and provincial disaster management authorities, electronic and print media, and official governmental bodies are perceived as authentic by varying Smother percentages. This diversity underscores the complex landscape of information sources in the context of COVID19, where people rely on a range of channels to stay informed.

Table 2
Authentic Source of Information about COVID- 19

Variable	Frequency	Percentage (%)
Experts (e.g. epidemiologist, doctor)	114	35.3
Social media	63	19.5
Government (e.g. agencies that help people in calamity)	42	13.0
Electronic media	30	9.3
Close contacts (e.g. friend, relative)	27	8.4
National Disaster Management Authority (NDMA)	25	7.7
Provincial Disaster Management Authority (PDMA)	9	2.8
no one	7	2.2
Print media	6	1.9
Total	323	100.0%

The Table 3 encapsulates crucial insights into the beliefs held by a specific population regarding the pandemic. Among those surveyed, 78.6% acknowledge the existence of COVID-19, while differing opinions arise concerning its origin, with 45.2% attributing it to being man-made and 54.8% considering it a natural occurrence. Participants identify neglectful human behavior (36.2%), natural occurrence (21.1 %), and divine will (23.2%) among the reasons for COVID-19 emergence. The Table 3 also outlines prevalent modes of transmission, common symptoms, and preventive measures. Notably, 76% believe in droplet inhalation as a mode of transmission, and 83% endorse complete inoculation as a preventive measure. This study contributes to the understanding of public perceptions, shedding light on the complexities of COVID-19 risk awareness and knowledge within this specific community.

Table 3
Comprehensive Insights: COVID-19 Beliefs and Awareness

Variables		Frequency	Percentage (%)
Believe on Existence of COVID-19			
Yes		254	78.6
No		69	21.10
COVID-19 Kind of Disaster			
Man made		146	45.2
Natural		177	54.8
Reasons of COVID-19 Occurrence			
Neglecting behavior of humans		177	36.2
Naturally occurred		68	21.1
Fate		7	2.2
Allah's will		75	23.2
Poor governance		56	17.3
Mode of COVID-19 Transmission			
Inhalation of droplets from infected people	yes	247	76.5
	no	32	9.9
	Don't know	44	12.6
Direct contact with infected people	yes	248	76.8
	no	40	12.4
	Don't know	35	10.8

Contaminated animals	yes	66	20.4
	no	139	43
	Don't know	118	36.5
Contaminated object/surface	yes	165	51
	no	69	21.4
	Don't know	89	27.6
Mosquito bites	yes	25	8
	no	188	58
	Don't know	110	34
Symptoms Of Coronavirus			
Fever	yes	287	89
	no	30	9.3
	Don't know	6	1.9
Cough	yes	277	85..8
	no	33	10.2
	Don't know	13	4.0
Fatigue	yes	172	53.3
	no	88	27.2
	Don't know	63	19.5
Sore throat	yes	220	68
	no	62	19.2
	Don't know	41	12.7
Aches/ pains	yes	195	60
	no	76	23.5
	Don't know	52	16.1
Diarrhea	yes	61	19
	no	150	46.4
	Don't know	112	34.7
Loss of taste or smell	yes	247	76
	no	51	15.8
	Don't know	25	7.7
Shortness of breath	yes	262	81
	no	35	10.8
	Don't know	26	8
Chest pain	yes	191	59.1
	no	68	21.1
	Don't know	64	19.8
Preventive Measures of COVID-19			
Getting completely inoculated	yes	268	83
	no	26	8
	Don't know	29	9
Use soap regularly while rinsing your hands	yes	284	88
	no	21	6.5
	Don't know	18	5.6
Shun proximity with someone who has contracted with cough and fever	yes	254	79
	no	39	12
	Don't know	30	9.3
	yes	179	55
	no	81	25.1

Evade contact with surfaces and animals without any precautions	Don't know	63	19.5
Currently is no treatment or vaccine for the COVID 19	yes	155	48
	no	90	28
	Don't know	78	24

Risk Perception Regarding COVID-19

The data presented in Figure 1 reflects the responses of individuals risk perception. Notably, a significant majority, 83.6%, either agreed or strongly agreed that getting infected with the coronavirus can be detrimental to one's health. In contrast, a substantial proportion, 62%, expressed some level of agreement with the notion that recovering from COVID-19 can be a challenging process, Furthermore, a noteworthy finding is that 61.6% of respondents agreed or strongly agreed that among respiratory diseases, Coronavirus causes the most deaths, underlying a general awareness of the virus's severity. Another key Insight is that 64.4% acknowledged that COVID-19 has the potential to disrupt daily life and work. Additionally, social perceptions were explored, with 65.9% agreeing or strongly agreeing that people might face criticism if they contract the virus, shedding light on the social stigma associated with COVID-19. In terms of preventive measures, a majority (64.4%) emphasized the importance of taking precautions to avoid contracting the coronavirus. Moreover, a significant 74.6% believed in the effectiveness of proper treatment and isolation for curbing the virus's spread. Furthermore, the importance of staying informed and following healthcare and government guidance was underscored, with 77.7% expressing agreement or strong agreement in this regard. Finally, regarding future pandemic, a substantial 71.2% expressed some level of agreement with the idea that there is a high possibility of another pandemic like COVID-19 occurring in the future, highlighting concerns about future public health challenges.

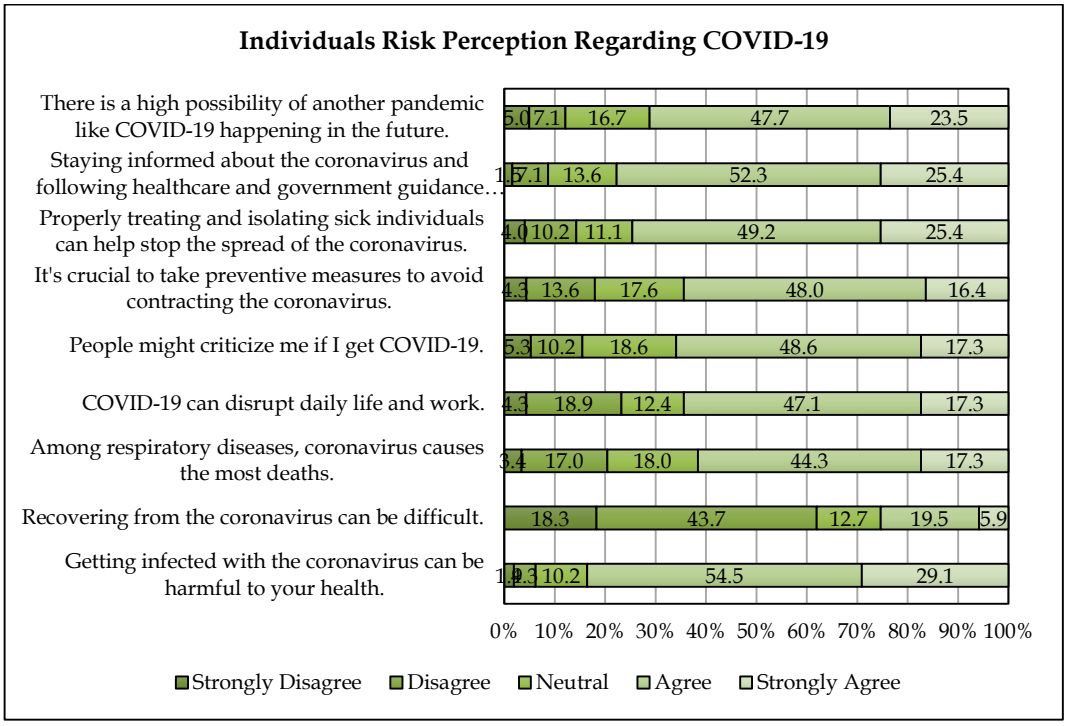

Figure 1 Individuals Risk Perception Regarding COVID-19

Public Preventive Behaviors against COVID-19

The Table 4 presents survey data on individuals' adherence to COVID-19 safety measures, measured on 5 point Likert scale. On average, respondents reported "sometimes" following safety measures, with a mean score of 3.25 for general safety observance. Notably, they seem to rigorously practice social distancing, as indicated by a mean score of 3.48, though there is considerable variability in responses. Respondents also frequently avoid close contact with symptomatic individuals (means score 3.32) and consistently wear facemasks in public (mean score 3.55). However, practices like avoiding unprotected surfaces (mean score 3.08) and wearing mittens (mean score 2.52) appear less consistent. These findings suggest that while some COVID- 19 safety measures are well-followed, others show more variation in individual behaviors, highlighting the need for targeted public health messaging and interventions to promote consistent adherence across all measures.

Table 4
Public Preventive Behaviors against COVID-19

Variable	M	SD
How consistently do you observe safety measures suggested by government to limit the outbreak of COVID	3.25	1.168
How rigorously do you keep social distancing	3.48	3.871
How frequently do you evade from get together	3.18	1.265
How do you shun being touched your eyes, nose, mouth and face.	2.94	1.278
How frequently do you rinse your hands with either sanitizer or a soap	3.41	1.316
How frequently do you avoid being closed with people who have fever and cough	3.32	1.185
How frequently are you donning facemask whenever you're at office and public places	3.55	1.187
How frequently do you avoid using local conveyance?	3.21	3.160
How frequently do you stop touching unprotected surfaces that are often touched by others	3.08	2.017
How frequently are you confined to home to not getting affected by COVID-19	3.18	1.099
How frequently do you put on mittens at your workplace	2.52	1.274

Note: 5-point Likert Scale (1= None, 2= Rarely, 3= sometimes, 4= Frequently, 5= Always), N= 323

Conclusion

Epidemics and pandemics are unexpected events that can happen anytime (Aliyi et al., 2022). People face many challenges during this times, and the effects touch every part of life. So, this study delves into the COVID-19 landscape in Quetta, revealing a well-informed population with a commendable understanding of the virus's health risks. While individual's exhibit consists adherence to certain preventive measures, variations exist, necessitating targeted interventions.

The identified social sigma emphasizes the importance of community support and awareness campaigns. Ongoing research, adoptive Strategies, and effective risk communication are crucial to align with evolving public perceptions and behaviors.

As concerns about future pandemics linger, sustained public health efforts, preparedness planning, and collaborative actions are imperative. This study contributes valuable insights for informed decision-making, enhancing communication Strategies, and addressing the unique challenges posed by COVID-19 and potential future health crises in Quetta.

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