



## Evaluating the Efficacy of Covid-19 Intervention in Pakistan

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### Abstract

Since the last two decades, public policy around the world, specifically in first-world countries has been guided by behavioral insights to nudge people to increase the efficacy of government interventions and policies. In this context, this study analyzes the effectiveness of government interventions and policies regarding the COVID-19 pandemic by finding if any of these were behaviorally informed and whether any behavioral insights were considered. For this purpose, focus group discussions, and episodic and semi-structured interviews were conducted with the representatives of government institutions, medical experts, and recovered patients of COVID-19. Consequently, the results depicted those only interventions and policies regarding precautionary measures, risk communication, and vaccination were behaviorally informed while none of the behavioral insights were intentionally taken into consideration but some aspects of progressive, regressive, educative, and architectural behavioral insights were identified in the COVID-19 interventions of government and the educative one performed most effectively. Moreover, emotional nudges and national and group reinforcement bias were also identified in the government interventions. Based on the results, this study emphasizes the need for the government to develop its behavioral insight team to conduct surveys and experimental-based studies to develop its behavioral insights based on its regional environmental characteristics.

**Keywords:** Behavioral Insights, COVID-19 Interventions

### 1. Introduction

Public Policy is an interdisciplinary and problem-oriented social science that focuses on the application of theory to practice to solve real-world public problems. Its general principle is the policy cycle, which involves the identification of the problem either independently or within the existing policy, formulation of policy options to address the problem, decision-making by formal institutions, implementation of prescribed policy options, and lastly evaluation of implemented policy to analyze its efficacy. Since the global outbreak of the contagious disease COVID-19, policymakers have faced the problem of mitigating its effects, leading to intervention by governments around the world, and thus for policymakers, the focus has shifted to analyzing the efficacy of COVID-19 intervention. The focus of current research is to analyze the efficacy of COVID-19 intervention in Pakistan.

A behavioral approach has also been applied by policymakers of different countries to policy issues in healthcare management systems, human safety and security, and economic livelihoods. Learning from leading economies, in terms of COVID-19, New Zealand and Ireland have made good use of behavioral insights to convey precautions in the form of vivid signs and posters. This study attempted to apply this approach to COVID-19 intervention in Pakistan to analyze its efficacy.

Since social, economic, and epidemiological policies are not deliberately behaviorally informed in Pakistan and therefore the prescribed policies do not sufficiently nudge people to achieve certain targets. The current study stipulated whether COVID-19 interventions in the chosen locale (Islamabad) were behaviorally informed or not. The attempt was also to see if any or a few of the nudges were based on the behavioral insights of the government's interventions. The importance of these insights-based nudges and how COVID-19 interventions could have been and will be behaviorally informed to increase the overall efficacy of these interventions. This study intended to provide behavioral insights into a very important question, based on the evidence on behaviorally informed interventions help in achieving the desired outcome of government policies. Questions like, what were the various government interventions regarding COVID-19 in Islamabad? Which government interventions were behaviorally informed, and which were not in the selected locale? Finding answers to these questions with this approach may be useful for MNHSRC including NCOC and NIH. Moreover, the findings may be useful in dealing with other contagious diseases like Polio, etc. or future pandemics.

### 2. Literature Review

#### 2.1. Behavioral Public Policy

(Strabheim, 2020) explains the rise of behavioral public policy on a global scale and its challenges to the rationalist tradition of public policy. He explains how behavioral sciences have been linked to the field of public policy for the last 70 years. Scholars like Lasswell (1951), Simon (1957), and Lindblom (1959) discussed the logical limitations in the decision-making of humans and how Kahnemann and Tversky in the 1980s contributed to the field of behavioral economics. How public policy journals are publishing more experimental studies based on human behavior in the last decade including the current concept of Nudges developed by Thaler and Sunstein in 2008. All of these developments led to the increasing significance of behavioral public policy in many countries

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across Western Europe, Central America, Asia, Africa, and the Middle East. More than 70 behavioral sciences organizations are working around the world to translate behavioral insights into public policy. Major academic awards and prizes are being distributed among behavioral experts and authors around the world. The major argument (Strabheim, 2020) is that the significance of behavioral public policy around the world is increasing and thus it is challenging the rationalist tradition of public policy. Therefore, it is important to reduce the microfocus put forward by behavioral public policy and to pay more attention to the institutional and cultural configuration of knowledge and decision-making. For instance, the Behavioral Insight Team (BIT) argued that officials at the authority level are themselves influenced by biases that they are addressing in the form of limits of rationality. These decision-making biases are framing effects, attention and salience, confirmation bias, group reinforcement and inter-group opposition, optimism bias, the illusion of control, and the illusion of similarity. Moreover, the Randomized Controlled Trials (RCTs) considered to be the universal way of evaluating policies have their drawbacks because of their myopic focus on individual behavior and even the experts using RCTs are not immune to biases. Furthermore, behavioral interventions and nudges are usually suggested to de-bias deliberative democracy and activate citizens' voting motivation in elections, but it is argued that the intention of de-biasing democracy has its own biases. (Schubert, 2017) argues that citizens' preferences can more easily be dismissed as biases while they offer policy elites a way to realize their goals. The work of (Strabheim, 2020) mentioned the theories of political epistemology i.e. it restructures the mechanisms by which knowledge-making and decision-making are interweaved. The author identified three major phases in behavioral public policy in the past 10 years. The first phase is Interaction and Institutionalization (2010-2012). In this phase, the British government developed behavioral research teams in almost every department. In the UK the BIT established its contacts with the US Office of Information and Regulatory Affairs (OIRA), the Institute for Health and Consumer Protection in the European Commission's Joint Research Center, partnerships with the Government of New South Wales in Australia and the Ministry of Manpower in Singapore. The second phase is Standardization and Internationalization (2014-2018). In this phase, new behavioral-expertise organizations have developed, and the number of BIT staff increased with the establishment of new connections with the Behavioral Insight Network of the Netherlands, the Ministry of Finance of Mexico, and the New York City Housing Authority. The third phase is Diversification (since 2018). In this phase, behavioral expertise organizations are working in an embedded and complex relationship with a network of state and non-state actors. These three phases of development have led the small community of experts into a global industry of policy instruments. Lastly, it is suggested that policymakers and behavioral experts should be conscious of the threat of technocratic and upper-class ideas of governance in the hope that the flaws of a democratic system can be overcome by a more rational rule of knowledge.

## **2.2. Nudges, Behaviors, and COVID-19**

(Soete, 2020) analyzes the role of science in policymaking within the context of the COVID-19 pandemic. He explains how the significance of science has increased in policymaking amid COVID-19 public health challenges with the increased experimentation and testing of new vaccines. How this significance in the future can cause certain worrying issues? What are the drawbacks of the hammer approach (crush the virus approach) proposed by the global science and vaccine community and why there should be a focus on nudging? and how regional environmental characteristics are being missed out in the policymaking towards COVID-19. The major argument of (Soete, 2020) is that due to the revived significance of science in the field of policy-making amid COVID-19 led the professionals of virology and epidemiology to reject any discussion from the researchers outside of this field, which is one of a worrying issue of science-based policy advice for measures to combat COVID-19. It is a worrying issue because such professionals have suggested the only policy response of the hammer approach based on the Susceptible Infectious Removed (SIR) model. According to this model, immediate and extreme measures like social distancing, confinements, travel restrictions, and lockdowns across the board are considered to be the most effective way of reducing the number of affected people as it was being done in the last century when combating with the pandemic of Spanish Flu but there are uncertainties with this approach because it neglects the social and economic environments in which it is being implemented. For example, the social and economic environment during the Spanish Flu was different compared to the current environment of the COVID-19 pandemic. Moreover, by applying the hammer approach, one fails to assess the marginal impact of each measure because all measures are implemented all at once in the hammer approach. Therefore, it is important to shift our focus to the phenomenon of nudging in which it is easy for us to assess the marginal impact of each measure. Nudging is considered to be one of the insights of behavioral and social sciences, which the professionals of virology and epidemiology don't consider during the imposition of confinements and restrictions. This comes up as the second worrying issue of science-based policy advice for measures to combat COVID-19. Moreover, the professionals of virology and epidemiology focus only on national data while providing policy advice for combatting COVID-19 leading to a strong national bias in policymaking. This bias can be considered the third worrying issue of science-based policy advice for measures to combat COVID-19. To further understand this, issue the example of the European Union (EU) during the COVID-19 pandemic can be illustrated. To cope with this pandemic every country within the EU made policies in line with the national settings while undermining the

notion of European values to deal with the pandemic on a collective basis. For instance, major celebrated events just before the onset of this pandemic attracted spectators from all over Europe but there wasn't any collective approach to dealing with this, which resulted in the first collateral damage of COVID-19 in Europe.

### 2.3. Behavioral Health Interventions

(Cutter, 2004) reviews the outcomes of behavioral health interventions of the past and analyzes which behavioral health interventions failed and which ones succeeded. What were the major reasons behind the success and failure of certain behavioral health interventions? Behavioral health interventions mean interventions that are constituted to alter the measures that individual take about their health. Since the 1970s, behavioral health interventions have been implemented at three levels i.e. interventions at the individual level, at the community level, and at the national level. The major argument (Cutter, 2004) is that successful behavioral health interventions are the result of one of the three theories. The first one is the theory of permeation which means when information permeates widely it breaks the inertia of people and thus the interventions can have effective outcomes. The second one is the theory of externalities which means the action of one person can affect those around him/her and thus it can induce behavioral change due to behavioral intervention. The third one is the theory of peer effects which means that individuals behave in a manner that is prevalent with the behavior of other people in a group. Moreover, national interventions have much greater outlasting effects as compared to individual or community-level interventions. The reason for this is that at individual and community level interventions the above-mentioned three theories don't fit adequately. At individual and community level interventions, information doesn't permeate well enough to have a lasting effect. Similarly, the theory of externalities and peer effects also doesn't hold because of the insufficient information permeation. These theories may not be right in explaining why some behavioral health interventions succeeded and some failed, and why the behavioral health interventions at the national level were more successful as compared to those at the individual or community level. However, it can be said that understanding why some behavioral health interventions succeeded and others failed, is an essential task in minimizing health-related problems. Despite the numerous studies conducted on using various behavioral insights-based interventions in public health policies specifically during pandemics like COVID-19, many of these existing studies have focused on developed countries, leaving a significant research gap in other parts of the world. For instance, many developing countries like Pakistan do not have official BIT or BIU to behaviorally inform public health policies while taking into consideration the regional environmental characteristics. Therefore, in this case, COVID-19, and Pakistan simultaneously. To address this contextual research gap, this study is conducted, which will guide future researchers and policymakers on how and what to consider while behaviorally informing public policy in Pakistan.

## 3. Methodology

### 3.1. Research Strategy and Design

The current research is qualitative research. The first and second research questions are about highlighting the number of interventions developed, operationalized, and exercised by NCOC in Islamabad. Qualitative research is chosen as the study's research strategy. The research design was descriptive as it intended to list the behaviorally informed interventions in Pakistan, describe the effectiveness of these interventions, and how interventions were made more behaviorally informed. The Units of Data Collection were the individuals, groups, processes, phenomena, visuals, documents, and symbols that yield data.

### 3.2. Research Methods and Sampling Techniques

The research methods for the current research included interviews (individual and group interviews). For eliciting data on behavioral responses, receptivity, compliance/non-compliance, etc. episodic interviews were conducted with UDC 1. In these episodic interviews, both episodic and semantic knowledge of behaviors were elicited from UDC 1. The data collected through interviews was then transcribed and analyzed using thematic analysis. A theoretical sampling technique was used for this UDC, which entails collecting data till the point of saturation is achieved. We tried securing data for this UDC from different governmental interventions targeting COVID-19 testing, SOPs compliance, and vaccination. The selection criteria were those people who contracted the virus and have recovered. Focus group discussions were also conducted in which group heterogeneity was ensured along the axis of age, gender, and severity of symptoms.

With UDC 2, semi-structured interviews were conducted to collect behavioral insights. A combination of closed- and open-ended questions was asked on nudges, SOP compliance, heuristics, and institutional responses to COVID-19 in Pakistan. The data collected through interviews was transcribed and analyzed using thematic analysis. A purposive sampling technique was used as these UDCs entail knowledge, expertise, and experience related to the subject matter.

**Table 1: Study's Methodological Framework**

UDCs	Research Methods	Research Instruments	Sampling	Approach and Tool of Analysis
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UDC 1 (Covid-19 recovered patients)	Episodic Interview (6 EIs) & (2 FGDs with 9 participants)	Interview Guide for EIs & Topic Guide for FGDs	Theoretical sampling	Approach: Thematic Analysis Tool: Framework Analysis
UDC 2 (Medical experts) and UDC 3 (Representative of government institution – NIH)	Semi-structured interviews (3 SSIs)	Topic Guide/Interview Guide	Purposive Sampling	Approach: Thematic Analysis Tool: Framework Analysis

### 3.3. Process of Data Collection

Interviews were conducted with 18 respondents: six COVID-19 recovered patients via episodic interviews, and another nine through focus group discussions. For semi-structured interviews, one of the interviewees was the Chief Scientific Officer at NIH and the other two were medical doctors, who were included due to their role in policy-making during the pandemic. These doctors provided insights into behavioral aspects of policy formulation. One was a consultant cardiac surgeon at CDA Hospital, and the other a resident PG in internal medicine at Shifa Hospital.

### 3.4. Locale of the Study

During COVID-19, different approaches have been utilized but the behavioral approach to analyze the efficacy of COVID-19 intervention was the most relevant one considering the increasing importance of behavioral sciences in public policy around the world (Sunstein C. R., Behavioral Science and Public Policy, 2020). In our study locale of Islamabad, the Islamabad administration adopted the policy of “Smart Lockdown” in which areas with elevated disease incidence were identified as “Hotspots”. These hotspots were further divided into geographically based hotspots and temporal hotspots. The major purpose of these hotspots and smart lockdowns was to break the cycle of disease transmission without locking down the whole city (NCOC, 2021). “The Final Guidelines for Smart Lockdown” issued by the National Command and Operation Center (NCOC) involves a list of interventions. The purpose of selecting Islamabad as our study locale and as a case for our analysis was the realization that Islamabad as federal capital of Pakistan and NCOC as a major governing body sitting in Islamabad and dealing with the situation of COVID-19 in Pakistan were not only easily accessible to the researcher but keeping in view the importance of Islamabad, it was also an important guiding case in point for other provincial capitals within Pakistan and federal capitals around the world. Moreover, Islamabad as a case for our analysis was easily acceptable to authorities at the decision-making level in Islamabad resulting in a more behaviorally informed intervention.

## 4. Results

### 4.1. Analysis of Primary Data

Primary data was gathered by the researcher himself. This firsthand data was gathered from the focus group discussions and episodic interviews conducted with UDC 4 and semi-structured interviews conducted with UDC 1 and 3. Keeping in view the research objectives and conceptual framework, the data gathered was then classified and analyzed into five main themes i.e. Pandemic/COVID-19 experience, behaviorally informed interventions, FEAST framework, nudged practices, and non-nudged practices. However, this paper specifically focuses on the first two which also somehow touches upon the next three.

### 4.2. Pandemic/COVID-19 Experience

The theme of the pandemic/COVID-19 experience and its subsequent sub-themes were discussed with a total six respondents of only episodic interviews because they were able to extensively explain their episode of pandemic/COVID-19 experience by talking about whether they had been through any pandemic-like situation in their past, the sources from which they knew about COVID-19, the instant at which they realized about the severity and deadliness of COVID-19, the physical health-related symptoms that they had experienced, the causes of COVID-19 which they think to have contributed to their infection and lastly the impact of COVID-19 infection on their life. The theme of the pandemic/COVID-19 experience is then classified into the following sub-themes.

#### 4.2.1. Pandemic Past Experience

Pandemic experience means whether respondents had been through any pandemic-like situation in his/her past. This indicates their approach and planning towards COVID-19 pandemic in terms of following precautionary measures or moving towards testing and vaccination. Only one respondent (Respondent No.01 Ali) of episodic interview has experienced dengue epidemic in the past. According to his interview verbatim, “Iss aik saal do pehlay mai nay, mujay dengue howa that ho uss say mujay kaafi uh experience raha hai k kis thara COVID hai!” (A year or two earlier I had dengue disease due to which I had enough experience of what COVID infection is like).

All of the remaining respondents (Respondent No.02 Ahmed, Respondent No.03 Haroon, Respondent No.04 Emaan, Respondent No.05 Alya and Respondent No.06 Qudratullah) of episodic interviews didn’t experience any

pandemic as past experience. Respondent No.02 Ahmed, Respondent No.03 Haroon and Respondent No.06 Qudratullah explicitly said no when asked if they faced any pandemic like situation in their past. Moreover, according to the interview verbatim of Respondent No.04 Emaan, “Nai, nai. Aisa koie first, yeh tho jo COVID ka tha, yeh mera first experience tha, jo sari jo cheezain band hoin, saray institutions band ho gahay.” (No. I haven’t faced such. COVID was my first experience of pandemic in which things and institutions were shut down). Similarly, according to the interview verbatim of Respondent No.05 Alya, “Nahi, iss say pehlay iss thara ka koie pandemic, koie viral disease jo hai mai nay face nahi ki uh like jo corona itself hai woh mujay do dafa howa hai. Aik mujay January do hazar eekis may howa tha aur dusra mujay June do hazar bayees howa.” (No. Before this I have never faced any pandemic or viral disease, but I was infected with COVID twice, first in January 2021 and secondly in June 2022).

#### 4.2.2. Knowledge about COVID-19

Knowledge about COVID-19 means, the time at which and the source from which the respondents knew about COVID-19 so that they may adopt reliable countermeasures that were required in order to remain safe from the infection. This indicates that knowing about the instant at which respondent knew about COVID-19 helped them to respond to the situation as early as possible. Similarly, knowing about their source of information may help to understand if there were any government assisted communication of information and if there were any misinformation that affected them.

Three of the respondents heard about COVID-19 pandemic via media platforms. According to the interview verbatim of Respondent No.03 Haroon, “Yeh tho exactly yaad nai hai bs lakin jo media may hai, media k through suna tha.” (I don’t remember it exactly, but I heard about it via all that’s in media). Similarly, according to the interview verbatim of Respondent No.05 Alya, “Sab say pehlay news pay suna.” (First of all, I heard about it on the news). Lastly, according to the interview verbatim of Respondent No.06 Qudratullah, “COVID k baray may sab say pehlay mai nay media say he suna hai.” (First of all, I heard about it on media).

One of the respondents heard about the COVID-19 pandemic through the local people in her neighborhood. According to the interview verbatim of Respondent No.04 Emaan, “Ok. Tho pehlay uss time jab COVID start howa that ho mai idar he thi gaon may hunza may tho pehlay mai nay first-time inn logon say suna tha k aisa koie virus aya hai aur iss say halat itnay kharab howay hain yeh aur woh. Mai nay baad may uss pay search ki, internet pay dehka, news may dehka tho aisay suna tha. Tho first jo mai nay suna tha yeh mai nay logon say suna tha.” (Ok. When COVID was first started, I was in my village Hunza. So, I first heard about it from people that a kind of virus is transmitted due to which the situation is worst. Later on, I searched about it on the internet, I saw it on the news. So, I first heard about it from the people of my village).

#### 4.2.3. Severity/Deadliness of COVID-19

Severity/Deadliness of COVID-19 means the instant at which and the source from which respondents realized the severity and fatal effects of COVID-19. This indicates that realizing the severity of COVID-19 compelled respondents to adopt reliable countermeasures like precautionary measures, testing and vaccination more strictly and seriously. Moreover, it also impelled respondents to inquire into the reliable information of severity in order to tackle the increasing misinformation.

Four of the respondents realized about the severity and fatal effects of COVID-19 through electronic, print and social media platforms. According to the interview verbatim of Respondent No.01 Ali, “Jitnay bhi news channels pay uh woh athay thay inn ki death aur woh usski tho tho uss say andaza ho raha tha k matlab yeh kitna severe hai aur kitna ziada pehal raha hai taizi say.” (Reports shown on news channels about the death of people and the quick spread of COVID was indicating its severity). And according to the interview verbatim of Respondent No.02 Ahmed, “Yeh mai nay khud nai dehki matlab iss thara koie qareebi rishtadaar bhi foat nai howa aur jitna bhi suna sab social media yeh uh electronic media jo hai iss k baray may, iss may humain patha chala k iss thara bhi ho sakta hai.” (I have not witnessed its severity directly nor did any of my close relative died but I have heard about it on social and electronic media). Similarly, according to the interview verbatim of Respondent No.04 Emaan, “Deadly disease last time jab mai nay uh situation dehki news pay China may tho tab mujay yaqeen howa k jo iss k jo signs hain thorhi si severity hai, uss k khatraat ziada hain tho yeh mujay apnay. Jo China, jab China peak pay tha tho tab mujay iss ka patha chala tha.” (Last time when I saw the situation of China in news then I believed about its severity and danger). Lastly, according to the interview verbatim of Respondent No.05 Alya, “That was again in twenty nineteen jab world k andar corona jo hai woh uh pehlay China aya tha lakin China k baad jab dusri countries may gaya uh uh, I am not sure shahid Brazil tha ya konsa country tha jahan pay massive amounts of deaths howay thay k jahan pay even k logon ko bury karnay ka ya unn ko dafan karnay ka bhi jo hai woh intizam nai tha uh mai nay dehka, apna personal experience batha rahi hon, news may tha, videos thi k trucks k andar jo hai woh dead bodies ko woh lay kar jathay thay hospitals aur unn ko dump kar rahay thay tho that was the very first time jab pehli dafa ehsas howa k waqai uh aik bohut he mushkil cheez hai jo dunya face kar rahi hai jo unqareeb yahan pay bhi ho jahay gi jo k ho bhi gahi, do theen mahino k baad phir woh Pakistan may bhi ah gahi.” (That was again in 2019 when COVID was spreading from China to all over the world. I am telling you my own experience of what I saw in news and videos. I am not sure if it was Brazil or some other country where massive amount of deaths occurred and there wasn’t any arrangement to bury them. They used to take dead bodies

in trucks to the hospitals and then dump them. It was the very first time when I realized its severity and how the world is facing it. And it was soon coming to Pakistan and it did come after two or three months).

One of the respondents realized the severity and fatal effects of COVID-19 through the risk communication that was transmitted via the government-assisted dial tones when one used to call someone on the phone. According to the interview verbatim of Respondent No.03 Haroon, “Jab hum phone mila rahay thay tho kehta hai k corona bohot khatarnak hai, yeh hai, woh hai.” (When we used to phone call, the message on dial tone would indicate corona as very dangerous, etc.

#### 4.2.4. Effect/Impact on Life

Effect/impact on life means the repercussions of COVID-19 when respondents were infected with it. These repercussions were usually related to personal, work, and family life, etc., and varied from person to person. It is also important to note that some of the impacts were negative and some positive while most of the repercussions were related and interdependent. Nevertheless, this indicates that knowing about the impact of COVID-19 on the life of respondents may help us in identifying the areas in which the government can improve their activity by efficiently nudging people to not only adopt reliable countermeasures but to also lessen the negative effects of COVID-19.

#### 4.3. Behaviorally Informed Interventions

The theme of behaviorally informed interventions and its subsequent sub-themes were discussed with a total of eighteen respondents from all of the conducted interviews i.e. episodic, focus group discussions, and semi-structured interviews because this specific theme was significant for the research objectives and conceptual framework. The theme of behaviorally informed interventions is then classified into the following sub-themes.

##### 4.3.1. Progressive Interventions

Progressive interventions mean that according to respondents the government interventions regarding COVID-19 had beneficial effects on the poor class of society. Such aspects are important to understand because in a third-world country like Pakistan, the majority of the population is living below the poverty line. It further indicates whether the government while making policies and implementing interventions, incorporated all of the classes of society to benefit specifically the poor class to increase the overall efficacy of COVID-19 interventions in Pakistan.

Seven out of the total eighteen respondents from all types of interviews acknowledged that government interventions regarding COVID-19 were beneficial for the poor class of society. These progressive interventions were based on rewards, awareness and provision of basic necessities. According to the interview verbatim of Respondent No.07 Saima, “Progressive, uh tho iss thara thi k matlab jaisa ap nay kaha hai k koie uh cheezul attractive bana deta hai tho matlab aik cheez hum log roz dekh rahay hain par uss may matlab aik uh yeh factor industries ya jo bhi kar rahay thay unki side say yeh aya tha k uss nay uh unn ko matlab masks jaisay attractive bana diye thay ya sanitizers.” (These were progressive in the sense that masks and sanitizers were made attractive by the industries etc.). And according to the interview verbatim of Respondent No.08 Minahil, “Mmm meray lihaz say tho uh progressive hogi kyun k uh jab vaccination start hoie thi tho unhon nay aik aisay infographic dena shu start kar diye thay jis may unhon nay non-vaccinated aur vaccinated person k comparison diye iss ki waja say jis may jo jo non-vaccinated may COVID ki jo ratio thi wo kam thi tho iss waja say log bohot ziada attract howay aur iss say ziada vaccination ko support mili, promotion hoie uss ki.” (According to me, these were progressive because when the vaccination started, government propagated infographics depicting comparison between vaccinated and non-vaccinated person due to which it attracted a lot of people and promoted vaccination). And according to the interview verbatim of Respondent No.09 Maria, “Progressive tho thi.” (These were progressive). According to the interview verbatim of Respondent No.10 Hania, “Progressive iss sense may thi like kisi ko layman ko bhi kisi cheez k baray may nai patha tha tho wo due to the di dial tones and all that stuff, wo uss say information hasil karta wo.” (Progressive in the sense that layman got information about COVID via dial tones etc.). And according to the interview verbatim of Respondent No.11 Anila, “Progressive iss thara say thi k jitnay bhi yeh uh use ho rahay thay ads waghaira may ah rahay thay uh tho who logon k andar awareness la rahay thay. Iss k ilawa different companies nay jo k kabi pehlay sanitizer ka ad hum nay shahid kabi pehlay wo uh COVID say dehka he nahi tha lakin uh uss COVID k time may hum nay sanitizer ko pehli dafa ad dehkay o hum nay dehka k wo uh abi atha ja raha hai, barhta ja raha hai tho uss thara say yeh progressive bhi tha aur logon k andar awareness ah rahi thi.” (Progressive in the sense that the content of advertisements was mostly about awareness. Moreover, companies which have not advertised advertisements for sanitizers before were advertising it now. Hence, these were progressive and also increased awareness in people). Similarly, according to the interview verbatim of Respondent No.12 Maqsoom, “Yeh progressive iss thara thi k unhon nay sirf superficial awareness di thi, uss ki waja say difference of opinion ah raha tha aur uss ki waja say logon may crave of knowledge barh raha tha k knowledge ka craving barh rahi thi, iss say logon nay khud self-awareness shuro ki aur detail knowledge acquire ki, iss thara yeh progressive thi.” (These were progressive because the awareness led people toward different opinions as result of which people were curious about COVID and they started getting self-awareness). Lastly, according to the interview verbatim of chief scientific officer of NIH and Respondent No.18 Dr. Waseem Malik, “Progressive reward ki surat may matlab agar dehkain jo hai woh mask dy diya, hand sanitizer distribute

kar diye tho yeh cheezain bhi hoie hain k logon ko jo hai behaviorally encourage kiya gaya k ap yeh mask use karain, hand sanitizer use karain. Tho agar ap inn ko progressive may laitay hain thot ho yeh cheez hai.” (In terms of progressive rewards, masks and hand sanitizers were distributed. Moreover, people were behaviorally encouraged to use masks and hand sanitizers. If you take these things in term of progressive, then there they are).

#### 4.3.2. Regressive Interventions

Regressive interventions mean that according to respondents the government interventions regarding COVID-19 had harmful effects on the poor class of society. Such aspects are important to understand because in a third world country like Pakistan, majority of the population is living below the poverty line. It further indicates whether the government while making policies and implementing interventions, tried to reduce the number of regressive interventions or its harmful effects in order to increase the overall efficacy of COVID-19 interventions in Pakistan. These regressive interventions were based on closure of institutions, travel restrictions, SIMs closure, mandatory vaccination and complete lockdown.

Eight out of the total eighteen respondents from all types of interviews acknowledged the regressive interventions of governmental policies.

Out of the total eight only one of the respondents mentioned that government interventions regarding COVID-19 were harmful for the poor class of society because a lot of institutions were closed, and it was difficult for common masses and poor classes to approach institutions to get the required services. According to the interview verbatim of Respondent No.04 Emaan, “Saray institutions band ho gahay, zahir si baat hai jab saray band ho gahay tho thorha control howa.” (All of the institutions were closed. It is obvious when all of the institutions were closed then it was controlled a bit).

Two of the respondents mentioned that government interventions regarding COVID-19 were harmful to the poor class of society because there were restrictions on traveling by the government and it became difficult for common masses and poor classes to travel to their workplaces that are specifically out of the city or country and thus it caused harmful economic effects. According to the interview verbatim of Respondent No.03 Haroon, “Ap travel nai kar saktay thay.” (You were not allowed to travel). Similarly, according to the interview verbatim of Respondent No.13 Abdul Ghaffar, “Flights band kar di thi, specially wo mumaalik jahan COVID ziada tha.” (Flights were stopped in countries with high COVID positive rate).

One of the respondents mentioned that government interventions were regarding COVID-19 were harmful for the poor class of society because government was ready to close mobile phone SIMs (Subscriber Identity Module). According to the interview verbatim of Respondent No.05 Alya, “SIMs bhi band karnay ka kaha gaya.” (Government was even ready to block their cellular sims).

Four of the respondents mentioned that government interventions regarding COVID-19 were harmful for the poor class of society because vaccination became mandatory for accessing majority of services and thus poor people were unable to vaccinate themselves due to one or another reason. According to the interview verbatim of Respondent No.03 Haroon, “Ap travel kartay thay tho jagah jagah pay ap ki woh jo vaccination jo hai certificate dikaani parhti thi, uss k ilawa ap travel nai kar saktay thay. Restaurant may ap jathay tho uss k ilawa agar woh nai hai tho kahna nai kah saktay thay aur specifically jo Islamabad city may jo barhay barhay city may in cheezon ko banaya gaya, offices waghaira ho gaya.” (You were not allowed to travel without vaccination certificate. Same was the case in restaurants, you were not allowed to eat and in big cities like Islamabad one was not allowed to enter offices without the vaccination certificate). And according to the interview verbatim of Respondent No.12 Maqsoom, “Regressive yun thi k unhon nay bilkul jis thara bahi nay kaha k mandatory kar diya tha.” (These were regressive too because vaccination was mandatory). And according to the interview verbatim of Respondent No.13 Abdul Ghaffar, “Mai issi say continue karon ga aggressive say jo unhon nay kaha k jali uh yeh mai...” (I will continue with the aggressive aspect of these as he had said that fake vaccination certificates were produced because vaccination was mandatory). Lastly, according to the interview verbatim of Respondent No.14 Shafiq, “It was more than hundred percent aggressive. Aggressive kaisay tha k humain option nahi diya gaya tha k hum vaccine lagwa saktay hain hum vaccine nahi lagwa saktay. Humari buses ki ticket iss say associate kar di gahi thi, humaray SIMs k number iss say associate kar diye gahay thay, humaray foreign travel iss say associate kar, even k humari university bhi iss baat say associate kar di gahi thi” (It was more than hundred percent aggressive. It was aggressive because we weren’t given any option other than getting vaccinated. Our buses tickets, SIMs, foreign travel and even university was associated with vaccination).

Two of the respondents mentioned that government interventions regarding COVID-19 were harmful for the poor class of society because government completely locked marketplaces and working areas due to which they were unable to do any mobility to earn livelihood for themselves. According to the interview verbatim of Respondent No.13 Abdul Ghaffar, “Government nay kaha tha k shaam 7 k baad ap markets nai kol saktay. Parks bilkul band kar diye thay, shopping malls bilkul band kar diye thay, institutions bilkul band kar diye thay humaray, university ki example hai, aur tourist jo spots thay wo bilkul band kar diye thay.” (Government ordered the closure of markets after 7 PM. They were completely shutting down parks, shopping malls, institutions, universities and tourist spots). Similarly, according to the interview verbatim of chief scientific officer of NIH and Respondent No.18 Dr. Waseem Malik, “Yeh sanction tho lagai hain na. Sanctions lagai hain k jin schools’ k andar positivity ziada hain

schools band kar diye gahay. Jin offices k andar ayi unn offices ko jo hai wo kiya gaya. Smart lockdowns lagahay gahay, regressive lagahay gahay.” (These sanctions were applied. Sanctions were applied in schools and offices with high positivity rates. Smart lockdowns were launched regressively). This shows that indeed there were lockdowns but according to the representative of NIH, it was smart lockdown and only those areas were locked where the rate of COVID-19-positive persons was maximum.

#### 4.3.3. Educative Interventions

Educative interventions mean that according to respondents the government interventions regarding COVID-19 was intended to educate, enlighten and aware the people. Such aspects are important to understand because in a third world country like Pakistan, literacy rate is low, and the chances of misinformation is high. Therefore, educative interventions tackle the lingering issue of increasing misinformation and thus it increases the overall efficacy of COVID-19 interventions in Pakistan. These educative interventions were based on risk communication, media awareness, precautionary measures, health professionals assisted awareness, religious assisted awareness and government assisted guidelines.

Three of the respondents mentioned that government interventions regarding COVID-19 were educative based on the governmental communication intended to provide people with required information needed to make informed judgements and decisions. Risk communication in this case was majorly propagated via the dial tunes, when a caller makes a phone call. Such risk communication also acted as a reminder for people to follow precautionary measures and move toward testing and vaccination. According to the interview verbatim of Respondent No.07 Saima, “Yeh saaray jo information thi yeh educational he thi matlab through phone.” (All of the information that was coming via phone was educational). And according to the interview verbatim of consultant cardiac surgeon of CDA hospital and Respondent No.16 Dr. Mahnoor Anwar, “PTA may baqaida message atha tha jab ap call kartay thay na k apni vaccine lagwahain, yeh areas hain, iss number pay register karain.” (PTA guided people via the dial tunes of phone calls. People have been informed about vaccination centers and a number for registration). Similarly, according to the interview verbatim of resident PG internal medicine Shifa Hospital and Respondent No.17 Dr. Saifullah Khan, “Even tumhari call tunes pay bhi, call tunes pay bhi yahi ah raha hotha k apnay ap ko vaccinate kara dain.” (Awareness was also propagated via the dial tunes to vaccinate yourselves).

Two of the respondents mentioned that government interventions regarding COVID-19 were educative based on recommending people to follow precautionary measures like washing hands and using masks and sanitizers. According to the interview verbatim of Respondent No.10 Hania, “Educative iss sense may he thi k ap ko bs information mile rahi hai tho ap uss k thri through jo hai wo precautionary measures lay rahay ho.” (It was educative in the sense that people started taking precautionary measures when they got the information). and according to the interview verbatim of Respondent No.11 Anila, “Educative iss uss may tha k uh mm wo unhon nay bataya ja raha tha k mask, hand wash yeh sari cheezain educative way may bhi ziada tha.” (Educative in the sense that people were told on how to use mask and wash hands).

One of the respondents mentioned that government interventions regarding COVID-19 were educative because health professionals took a major part in informing people about COVID-19 related precautionary measures, testing and vaccinations. Such transmission of awareness via health professionals and specifically doctors have a profound effect on people because doctors are the most relevant and trusted group of people in pandemic situations like COVID-19. According to the interview verbatim of consultant cardiac surgeon of CDA hospital and Respondent No.16 Dr. Mahnoor Anwar, “Doctor apnay end pay aik leader tha apnay ward ka, apnay area ka tho uss may hum nay awareness messages...” (Doctors were leaders of their wards and areas by informing people via awareness messages). Similarly, at another instant she iterated, “Uss kay behavior ko nudge kiya, modify kiya towards facilitation of the government services, to receive the vaccines, to receive the education, to receive to attend the meetings, to trust the system.” (We were involved in nudging and modifying the behavior of people towards facilitation of government services in order for them to receive education, vaccination, attend meetings and to trust the system).

One of the respondents mentioned that government interventions regarding COVID-19 were educative because religious teachings were used to compel people to follow precautionary measures and to move toward testing and vaccination. In a country like Pakistan, majority of the population is religious and the chances of convincing them via religious teachings is more. According to the interview verbatim of consultant cardiac surgeon of CDA hospital and Respondent No.16 Dr. Mahnoor Anwar, “Jo patient may fear, anxiety yeh cheezain develop ho rahi thi uss k liye hum nay unn ko unkay religion say connect kiya, religion ko hum nay aik medicine bana k paish kiya Surah Rehman aur Ruqiya k through. Tho ab ap dehkain na k Pakistan aik multi-tiered society hai, uss may ap k parhay lihkey log bhi hain, uss may ap k religiously educated log bhi hain, different propaganda generate ho raha tha ho not only ap nay parhay lihkey logon k liye propaganda ko beat karna tha k inn vaccination ka koie nuqsan nai hai, yeh koie conspiracy theory nahi hai balkay jo religious sect tha uss ko hum nay Surah Rehman aur Ruqiya k through apnay message poncha k aur unn ko convince kiya k Wa Izza Mariztu Fahu Ya Shifain k ap ka ilaj karana Quran say saabit hai. Ruqiya Rasool-e-Pak kehtay thay k bimaar admi k saranay tilawat lagao, hum nay Surah Rehman ki tilawat start kar wahi sirf sur sirf issi liye k hum iss puray sect ko, puri society ko yakjah kar sakay COVID ko beat karnay may and that’s how we beat it.” (I have connected those patients with religion who were



in fear and anxiety etc. We presented religion as a remedy and medicine via the use of Surah Rehman and Ruqiya. Pakistan as a multi-tiered society consists of both scientifically and religiously educated people. Now to tackle the propaganda related to COVID, it was important to take the help of Surah Rehman and Ruqiya to guide the religious sect of society by convincing them that the Quran proposes treatment for diseases. Similarly, the Holy Prophet of Islam proposes Ruqiya, which is to recite the Quran by sitting next to the patient. Hence, we first understood the multi-tiered society and that's how we beat COVID).

#### 4.3.4. Architectural Interventions

Architectural interventions mean that according to respondents the government interventions regarding COVID-19 were intended to provide choices and simplification. Such interventions are suitable for people who are either too lazy or unable to get benefits from policies. In this case, architectural interventions are based on TV drama suggestions, provision of choices, and internet packages. Such interventions have no direct impact on the efficacy of COVID-19 interventions in Pakistan.

One of the respondents mentioned that government interventions regarding COVID-19 were architectural because the Prime Minister of Pakistan in his speeches suggested people to watch TV dramas. The purpose of such suggestions is usually to restrict people to their homes and premises to lessen the number of social gatherings and outdoor activities in pandemic situations like COVID-19. According to the interview verbatim of Respondent No.07 Saima, "Ertughul, Ertughul dehkna ko kaha gaya tha na tho wo sab nay dehkna shuro kar diya au saray social media pay idar udar baat cheet chalna shuro ho gahi ussi k baray may aur uss k baad dusray dusri series ka ka keh diya tha lakin patha nahi wo kya thi." (We were told to watch Ertughul and everyone started watching it. Then the whole debate started around it on social media. Later on, another drama series was suggested but I don't know about it). This shows that TV dramas were suggested according to the context of Pakistani society. As the majority of the population is Muslim therefore the suggested TV drama like Ertughul is based on Islamic history. Moreover, this TV drama was also dubbed by the Pakistan Television network in the national language of Pakistan i.e. Urdu.

One of the respondents mentioned that government interventions regarding COVID-19 were architectural because internet providers offered various internet packages to their customers thus further restricting them to their homes and premises. According to the interview verbatim of Respondent No.14 Shafiq, "Acha aik cheez inhon nay yeh ki thi k jo humaray network hain Jazz Ufone inn logon nay packages dy diye thay internet k liye, sirf COVID k, dusray COVID k season bhi thay baad may khatam ho gahay thay aur agar mai more openly kahon tho kuch adults' sites nay bhi apni subscription free kar di thi sirf COVID k season may tho yeh cheezain thi." (One of the other things network providers like Jazz and Ufone etc. did was to offer internet packages during COVID and later on ended the package. Moreover, if I speak more openly, some adult sites were giving free subscriptions during the COVID season). This shows that private network and internet providers either earned profit by offering internet packages when people were in their homes and network traffic was maximum or such providers wanted to restrict people to their homes or both. However, it seems like there was no role of government in this aspect. Furthermore, the respondent indicated the free subscription of adult sites during the pandemic which is also not related to governmental policies and Islamic countries like Pakistan.

#### 4.4. Behaviorally Informed Precautionary Measures

Behaviorally informed precautionary measures mean that respondents think that precautionary measures propagated by the government were aimed at influencing the behavior of people by using behavioral insights to make them follow precautionary measures for the sake of increasing the efficacy of COVID-19 interventions in Pakistan. Behaviorally informed precautionary measures are in the form of government-assisted SOPs and advertisements propagated via risk communication and media platforms. The purpose of such an inquiry is to know whether precautionary measures were behaviorally informed! If yes, then we will be able to inquire whether testing and vaccination-related interventions were behaviorally informed.

One of the respondents mentioned that precautionary measures related to SOPs propagated by the government were behaviorally informed. These SOPs are guidelines regarding every aspect and events like Christmas, Eid-ul-Adha, marriage ceremonies, mass gatherings, Independence Day celebrations, home isolation and social distancing etc. According to the interview verbatim of chief scientific officer of NIH and Respondent No.18 Dr. Waseem Malik, "Bilkul hum nay kiye hain, preventive measures. Ab ab start say baat karain tho government nay jo hai uss ko manage kiya, SOPs banai, logon ki guideline banai, unko jo hai implement karwaya, unko follow up kiya." (Definitely, we have adopted preventive measures. If we talk from the start of the pandemic, the government initially managed it, formulated SOPs, formed guidelines, and then implemented it with a focus on follow-up). This shows that indeed precautionary measures related to SOPs were formulated and propagated by the government, but these were not behaviorally informed as such.

Two of the respondents mentioned that precautionary measures related to advertisements propagated by the government were behaviorally informed. According to the interview verbatim of Respondent No.09 Maria, "Haan yeh tho uh cause waghaira pay jo athay thay aur yeh jo mask k uh har ad mai diya jatha tha uh TV pay ad diya jatha tha, YouTube pay bhi yeh start may atha ra raha hai ads rela related to uh yeh uh handshake na karna aur yeh cheezain, sanitizers bohut saray ads ahay thay k yeh use kiya jahay, kafi cheezain aisi tho ayi thi." (Both on

TV and YouTube, advertisements were presented related to the Causes of the pandemic, the importance of masks, the prohibition of handshakes and the use of sanitizers etc.). And according to the interview verbatim of Respondent No.12 Maqsoom, “Uh jee bilkul uh government nay matlab jo ads waghaira diye uss say aur jo log nai mantay thay unn k liye bhi na.” (Definitely the government’s advertisements were effective specifically for the people who weren’t accepting the seriousness of COVID). This shows that precautionary measures related to advertisements were propagated by the government and these were behaviorally informed to an extent as one of the respondents indicated that after advertisements those people started taking precautionary measures who weren’t accepting the seriousness of COVID-19.

Three of the respondents mentioned that precautionary measures propagated via risk communication were behaviorally informed. According to the interview verbatim of Respondent No.01 Ali, “Humaray jo call tunes thay even uss pay bhi bataya jatha tha k matlab ap precautionary measurement k baray may baar baar batatay thay tho government nay kaafi iss cheez pay woh kiya tha.” (Government influenced people by continuously communicating the message of precautionary measures via dial tunes). And according to the interview verbatim of Respondent No.13 Haroon, “Aik tho khair woh mobile k through jis ko call dial tune waghaira k zariyeh.” (First, they propagated it via dial tune of calls). Similarly, according to the interview verbatim of consultant cardiac surgeon of CDA hospital and Respondent No.16 Dr. Mahnoor Anwar, “Bilkul yeh tha, ap PTA ki phone calls say shuro karain tho government policy tho wahan say start ho gahi thi k woh kis thara guide kar rahay thay.” (It is evident from the way government and PTA guided people via the dial tunes of phone calls).

Four of the respondents mentioned that precautionary measures propagated via electronic and social media platforms were behaviorally informed. According to the interview verbatim of Respondent No.13 Haroon, “Aik tho khair woh mobile k through jis ko call dial tune waghaira k zariyeh, doosra media k through.” (First, they propagated it via dial tune of calls and then through media). And according to the interview verbatim of Respondent No.06 Qudratullah, “Haan yeh tha k social media pay hai aur uh har jagah ap ko uh yeh yaad dilaaya jatha tha k ap uh k ap ziada say ziada apna khayal rakain, jitna ziada ap uh precautionary measures ko follow kar saktay hain uh tho woh teek hai.” (Government used to remind us on social media and other places to take care of yourselves and to follow precautionary measures as much as possible). And according to the interview verbatim of Respondent No.10 Hania, “Jaisay humain shuro may bataya gaya tha k har cheez ko ap nay sanitize karna hai aur ap nay har cheez ko matlab har tho hum nay yeh kiya tha k gher may tho uh like for example handle hain like koie bhi kahmay ki bahir say bhi cheez athi thi tho uss ko bhi sanitize karna ya uss ko dho k even though kahna shuro ho gahay thay ya matlab dho k use karna shuro ho gahay thay tho us ski waja say yahi tha k ap ko jab like for example normal insan ko bhi kisi cheez k baray may nahi patha that ho wo social media ya iss sab ki cheezon say uss nay knowledge aur precautions lenay shuro kar diye thay.” (As we have been told in the start to sanitize everything. So, we used to sanitize everything at home including our door handles, food or anything else that has been brought from outside. This was due to social media through which any normal person started to take knowledge and precautions). Lastly according to the interview verbatim of of resident PG internal medicine Shifa Hospital and Respondent No.17 Dr. Saifullah Khan, “Government nay iss k hawalay say kafi ziada iqdamaat kiye thay uh uh social media pay iss k campaign chalahay thay, posters lagahay thay.” (Regarding this, government has taken a lot of steps like running a campaign on social media and posting posters).

#### **4.4.1. Behaviorally Informed Testing and Vaccination**

Behaviorally informed testing and vaccination mean that respondents think that testing and vaccination promoted by government were aimed at influencing behavior of people by using behavioral insights in order to nudge them toward testing and vaccination for the sake of increasing the efficacy of COVID-19 interventions in Pakistan. Government assisted behaviorally informed testing and vaccination via dial tunes, NIH, infographics, and online certificates. Besides the government, private entities and celebrities also assisted with behaviorally informed testing and vaccination.

However, two of the respondents mentioned that testing and vaccination promoted by the government were not aimed at influencing the behavior of people to nudge them toward testing and vaccination. According to the interview verbatim of Respondent No.05 Alya, “Meray khyal say tho not really kyun k even that ajj tak bhi humari society may bohot barha aik faction aisay hai jo corona k existence say inkaar kar raha hai, teek hai! Tho jo uss ki existence ko he nahi mantay tho unn ka tho testing ki taraf rujuhaan nai gaya.” (According to me, not really. There is a large faction in our society that is declining the existence of corona. Hence, those who aren’t ready to accept the existence of coronavirus, how can they move toward testing!). And according to the interview verbatim of Respondent No.08 Minahil, “Jab hum vaccination center gahay tho sab say ziada kami mujay mehsos hoie k wahan pay log aik dusray say puch rahay thay k vaccine lagwani chaiyeh, nai lagwani chaiyeh tho wahan pay aik information desk hona chaiyeh jahan pay aik physician ho jo unhen dy k uh uh wo dy k information dy k haan yeh safe hai k nahi k unhain aik tasali chaiyeh thi k hum lagwahin ya na lagwahain tho iss cheez ki kami mehsos hoie.” (When we went to the vaccination center some people were asking others if they should get vaccinated or not. So, I felt the absence of one thing i.e., an information desk with a physician. I felt people wanted some kind of support and verification about getting vaccinated).

Three of the respondents mentioned that testing and vaccination promoted by the government via dial tunes were aimed at influencing the behavior of people to nudge them toward testing and vaccination. According to the interview verbatim of Respondent No.01 Ali, “Iss thara humaray jo call tunes thay even uss pay bhi bataya jatha tha k matlab ap vaccine lagahay aur precautionary measurement k baray may baar baar batatay thay tho government nay kaafi iss cheez pay woh kiya tha.” (Similarly, the government influenced people by continuously communicating the message of precautionary measures, testing and vaccination via dial tunes). And according to the interview verbatim of Respondent No.08 Minahil, “Phone call service say pehlay jo information detay thay phone call service say pehlay wo, uss say bhi humain kafi information milti thi k abi vaccination start hoie hai tho wo humain promote kartay thay k vaccination kar wa’ain. Tho phir iss thara say...” (The info in dial tune would inform us that vaccination has been started and it used to encourage us for vaccination). Similarly, according to the interview verbatim of consultant cardiac surgeon of CDA hospital and Respondent No.16 Dr. Mahnoor Anwar, “Jab ap call kartay thay na k apni vaccine lagwahain, yeh areas hain, iss number pay register karain.” (People have been informed about vaccination centers and a number for registration).

Two of the respondents mentioned that testing and vaccination promoted by government via National Institute Health were aimed at influencing behavior of people to nudge them toward testing and vaccination. Such promotion by NIH was mostly in the form of directly testing and vaccinating people. According to the interview verbatim of Respondent No.05 Alya, “NIH ka role jo National Institute of Health hai Islamabad may, uss ka role bohot acha tha k woh bohot ap ka matlab free of cost ap k jo hai woh uh samples lay rahay hai, test kar rahay hain, ap ko report online mile rahi hai. Tho unn ka aik barha he well organized kisam ka woh jo sara process tha, jo bohot well organized tha aur kyun k mai nay private lab say bhi karwaya hai corona test aur NIH say bhi, tho NIH ka experience definitely aik tho who free of cost tha, jo k woh government ka aik acha initiative tha lakin unfortunately shahid woh sirf pindi aur Islamabad k log he uss say faida hasil kar sakay.” (NIH were taking samples for testing free of cost and also providing online reports of tests. As I had also tested myself via private lab but experience at NIH was best. However, unfortunately only people of Rawalpindi and Islamabad were availing such service). And according to the interview verbatim of chief scientific officer of NIH and Respondent No.18 Dr. Waseem Malik, “Yeh agar ap yeh behavioral inform k hawalay say offices k bahir woh lagaya woh howa vaccine ki.” (Considering behaviorally informed insights, we have posted notices regarding vaccinations). This shows that besides direct involvement of NIH in testing and vaccination, they were also involved in promotion of it via posting notices. Moreover, the role of NIH was majorly restricted to the twin cities of Islamabad and Rawalpindi.

Two of the respondents mentioned that testing and vaccination promoted by government via infographics were aimed at influencing behavior of people to nudge them toward testing and vaccination. These infographics were dispensed via media platforms and posted within offices and institutions etc. According to the interview verbatim of Respondent No.08 Minahil, “Jab vaccination start hoie thi tho unhon nay aik aisay infographic dena shu start kar diye tho iss waja say log bohot ziada attract howay aur iss say ziada vaccination ko support mili, promotion hoie uss ki.” (When vaccination started, government propagated infographics due to which it attracted a lot of people & promoted vaccination). Similarly, according to the interview verbatim of chief scientific officer of NIH and Respondent No.18 Dr. Waseem Malik, “Yeh agar ap yeh behavioral inform k hawalay say offices k bahir woh lagaya woh howa vaccine ki.” (Considering behaviorally informed insights, we have posted notices regarding vaccinations).

Two of the respondents mentioned that testing and vaccination promoted by the government via the incentive of online vaccination certificates were aimed at influencing the behavior of people to nudge them toward testing and vaccination. Vaccination certificates were mandatory for travel and entrance into almost every sector like offices, institutions examination halls, etc. Likewise, instantly acquiring online vaccination certificates compelled people to get vaccinated. However, such certificates didn’t act as an incentive for people to do testing. According to the interview verbatim of Respondent No.13 Abdul Ghaffar, “Online certificates thay na, wo thay banking k zariyeh tho Pakistan ki kitni population online banking k ka exposure hai. Nai rakti kaafi. Logon ko jana parhta tha NADRA k office mai k lenay k liye.” (Vaccination certificates were accessible via online banking, but a major portion of Pakistani population has no exposure of online banking therefore, they had to go to other places like NADRA offices for acquiring the vaccination certificates). And according to the interview verbatim of Respondent No.15 Imran, “Uh certificate ka tho aik faida yeh tha na k hum mm matlab transport ya ho gaya ya government office jathay tho udar certificate lazmi tha tho iss waja say logon nay matlab vaccine lagana start kar diya tha k certificate humay milay ta k hum matlab transpo easy lain matlab kisi jagah transport bhi kar saktay hain dusray aur government office ya test waghaira hothay thay matlab kisi post k liye tho udar matlab lazmi hotha tha k certificate vaccinated certificate uss k paas ho. Iss waja say logon nay matlab vaccine lagana start kar diya k certificate mile jahay ga.” (One of the advantages of vaccination certificates was that it helped people to be able to use public transport, and enter government offices and examination halls). However, in a country like Pakistan with a low literacy rate, the majority of people were unable to acquire online certificates.

One of the respondents mentioned that testing and vaccination promoted by private entities were aimed at influencing the behavior of people to nudge them toward testing and vaccination. These private entities are usually

fast food and clothing brands. These brands offered incentives i.e. sale on their products and items for vaccinated customers to nudge others to get their vaccination. According to the interview verbatim of Respondent No.14 Shafiq, “Abroad ki baat karain, special area ki baat karain tho wahan yeh tha k jo bhi vaccinated aur jo bhi vaccine lag wahay ga uss ko aik matlab wo wine ki bottle ya aesi cheez di jahain tho wahan pay log attract howay thay, even KFC nay start kiya tha, McDonalds nay start kiya tha aur kuch brands nay off perc off lagana start kiya tha.” (Abroad, they used to give a bottle of wine as an incentive for getting vaccinated. Similarly, KFC, McDonalds and other brands were offering off on their products if one is vaccinated). This shows that behaviorally informed testing and vaccination were promoted by private entities, but such promotion majorly took place in other foreign countries.

One of the respondents mentioned that testing and vaccination promoted by celebrities were aimed at influencing the behavior of people to nudge them toward testing and vaccination. Celebrities have huge fan bases and their promotions make huge impacts. According to the interview verbatim of Respondent No.12 Maqsoom, “Jab celebrities nay ah k yeh cheezain humaray samnay raki hain matlab jin ko log admire kartay hain, hum Bollywood ki baat karain tho shahrukh khan waghaira ya hum apni baat karain tho TV actresses hongy ya cricketers hongy jab unhon nay ah k logon ko kaha hai k kuch log hothay hain wo matlab admire kartay hain blindly k unhon nay keh diya hai tho bs karna hai jaisay log marketing k liye use kartay hain k brand ambassador hothay hain. Issi thara ka aik vaccine amb vaccine ambassador type bana diya tha unhen. Tho iss cheez nay attract kiya logon ko kaafi.” (When fans-admiring celebrities started appearing in advertisements. For example: In Bollywood, movie stars like Shahrukh Khan, and here in Pakistan, TV actresses and cricketers acted like brand ambassadors for COVID-19 vaccination by advocating vaccination nationwide which attracted all their admirers to get vaccinated).

#### 4.4.2. Precautionary Measures

Concerning the precautionary measure of wearing masks, (MNHSRC, 2020) stated that using or wearing of face mask is mandatory for both the general public and healthcare workers because Corona coronavirus can easily be transmitted via sneezing, coughing, and talking. Therefore, to be safe from such viruses, everyone should cover his/her face with a face mask. Moreover, face mask is not recommended for children under the age of five years and it is strictly recommended for old age people and people who are seriously ill due to COVID-19 or any other diseases. It has also explained how to wear and remove face masks at home and in health care settings along with the illustration of how to make and sew cloth face masks.

The precautionary measure of washing hands, (MNHSRC, 2020) stated that people should frequently wash hands with soap and water for at least twenty seconds and if soap and water are not available then hand sanitizers should be used with at least sixty percent alcohol. Hand sanitizers should also be made available at the entry and exit points of events, gatherings and offices. The precautionary measure of maintaining social distance, (MNHSRC, 2020) states that COVID-19 is a communicable disease, and maintaining social distance as a preventive measure plays an important role in limiting its spread. According to the procedure of social distancing, one should maintain a distance of six feet from others, one should stay at home, and avoid physical contact, gatherings, and unnecessary use of public transport.

Lastly, regarding the precautionary measure of observing self-isolation/quarantine, (MNHSRC, 2020) and (MNHSRC, 2022) stated that the government has planned to set up rooms, wards, and areas for isolation and quarantine at borders, airports and hospitals. Similarly, it was recommended for people to arrange self-isolation and quarantine at home too. Similarly, all of the above-mentioned preventive measures were recommended and made mandatory for the people according to the separate guidelines released by MNHSRC specifically in the festivals and events of Christmas, Easter, Eid ul Azha, Eid-ul-fitar, Guru Nanak Dev Ji anniversary, Moharram procession, Youm-e-Ali gathering, Juma-tul-Wida, Shab-e-Qadar, Eid Milad-un-Nabi, Ramazan, Pakistan Super League, Tablighi Ijtama, marriage ceremonies, and independence day celebrations.

## 5. Conclusion

Pakistan being a third-world country with a lot of issues in the public policy realm and good governance faced an unprecedented health-related issue of COVID-19 similar to the rest of the world. The first and second-world countries with well-developed infrastructure, technology, governance, and public policy were prepared enough to deal with the COVID-19 pandemic as compared to Pakistan. However, Pakistan did manage well in this crisis with the help of international organizations and donors. As mentioned briefly, this research can be specifically useful for MNHSRC including NCOC and NIH for dealing with health-related issues like polio, etc. Moreover, studies like this one can also be useful for other government ministries and institutions because behavioral insights can be used by these too to increase the efficacy of their policies e.g. a few years earlier, the provincial government of Khyber Pakhtunkhwa Province of Pakistan established a first BIU in its finance division (The News, 2021) . Moreover, emotional nudges and national and group reinforcement bias were also identified in the government interventions. Based on the results, this study emphasizes the need for the government to develop its behavioral insight team to conduct surveys and experimental-based studies to develop its behavioral insights based on its regional environmental characteristics.

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