

APPLICATION OF FEAST FRAMEWORK TO
ANALYZE THE EFFICACY OF COVID-19
INTERVENTION IN PAKISTAN



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CERTIFICATE

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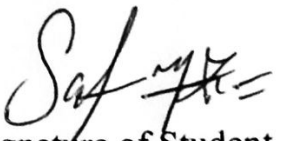
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Dedication

To my parents, for everything they do for me.

And Dr. Lex Fridman, for his optimism, empathy and love.

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First of all, a deep sense of gratitude for this existence, mother nature and everything in this universe.

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ABSTRACT

Since the last two decades, public policy around the world, specifically in the first world countries has been guided by behavioral insights to nudge people to increase the efficacy of government's interventions and policies. The development of a popular group of behavioral insights known as EAST framework by the first ever behavioral insight team of UK led to the evolution of FEAST framework. In this context, this study analyzes the efficacy of interventions and policies of government regarding the COVID-19 pandemic by finding if any of these were behaviorally informed, were any of the behavioral insights taken into consideration and how FEAST framework may help in nudging people to increase the efficacy of COVID-19 intervention in Pakistan. For this purpose, focus group discussions, episodic and semi-structured interviews were conducted with the representative of government institution, medical experts and recovered patients of COVID-19. Correspondingly, the government's produced and disseminated visuals based public service messages and policy documents during COVID-19 were analyzed. Consequently, the results depicted that 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 along with insights of FEAST framework were identified in the COVID-19 interventions of government and the educative one performed most effectively. Moreover, emotional nudge, national and group reinforcement bias were also identified in the government interventions. Based on the results, this study emphasizes the need for government to develop its own behavioral insight team to conduct surveys and experimental based studies to develop its own behavioral insights based on its own regional environmental characteristics. Then, behavioral insight unit can be established in every government institution which can collaborate with other behavioral insight units of the world to behaviorally inform public policy for improved efficacy.

Keywords: Behavioral Insights, Behavioral Insight Team, Behavioral Insight Unit, EAST Framework, FEAST Framework, COVID-19 Interventions, Precautionary Measures, Risk Communication, Vaccination, Progressive, Regressive, Educative, Architectural, Emotional Nudge, National Bias, Group Reinforcement

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LIST OF ABBREVIATIONS

ADB	Asian Development Bank
AEFI	Adverse Event Following Immunization
BIT	Behavioral Insight Team
BIU	Behavioral Insight Unit
CDA	Capital Development Authority
CNIC	Computerized National Identity Card
COVAX	COVID-19 Vaccines Global Access
COVID	Corona Virus Disease
COVIM	COVID-19 Inventory Management System
CPSP	College of Physician and Surgery Pakistan
CSV	Comma Separated Values
DDM	Disinfection Distance Mask
DHA	Defense Housing Authority
DNPM	Department of National Planning and Monitoring
EAST	Easy Attractive Social Timely
EOC	Emergency Operation Center
EPI	Expanded Program on Immunization
EU	European Union
FDI	Federal Directorate of Immunization
FEAST	Fun Easy Attractive Social Timely
HEC	Higher Education Commission
HSA	Health Services Academy
IEC	Information Education Communication
IHITC	Isolation Hospital and Infectious Treatment Center
ISE	Islamabad Stock Exchange
KFC	Kentucky Fried Chicken
MERS	Middle East Respiratory Syndrome
MNA	Member of National Assembly
MNHSRC	Ministry of National Health Services Regulation and Coordination
MS	Micro Soft
NADRA	National Database and Registration Authority
NAP	National Action Plan

NCOC	National Command and Operation Center
NDVP	National Deployment and Vaccination Plan
NEOC	National Emergency Operation Center
NIH	National Institute of Health
NIMS	National Immunization Management System
OIRA	Office of Information and Regulatory Affairs
OLS	Ordinary Least Squares
PCR	Polymerase Chain Reaction
PG	Post Graduate
PIMS	Pakistan Institute of Medical Sciences
PM	Prime Minister
PSL	Pakistan Super League
PTA	Pakistan Telecommunication Authority
PTI	Pakistan Tehreek Insaf
RCCE	Risk Communication and Community Engagement
RCT	Randomized Controlled Trials
SARS	Severe Acute Respiratory Syndrome
SIM	Subscriber Identity Module
SIR	Susceptible Infectious Removed
SMS	Short Message Service
SOP	Standard Operating Procedure
TV	Tele Vision
UCC	Ultra Cold Chain
UDC	Unit of Data Collection
UN	United Nations
UNICEF	United Nations International Children's Emergency Fund
UK	United Kingdom
US	United States
WHO	World Health Organization
WTP	Willingness To Pay

CHAPTER 1

INTRODUCTION

1.1 Background of the Study

Public Policy is an interdisciplinary and problem-oriented social science which focuses on the application of theory to practice in order to solve the real-world public problems. Its general principle is policy cycle, which involves identification of 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 option and lastly evaluation of implemented policy to analyze its efficacy. Since the global outbreak of contagious disease COVID-19, policy makers are posed with the problem of mitigating its effects, leading to intervention by governments around the world and thus for policy makers the focus was shifted to analyzing the efficacy of COVID-19 intervention. The focus of current research was to analyze the efficacy of COVID-19 intervention in Pakistan.

The FEAST framework is a behavioral approach based on five behavioral insights used to influence human behavior by nudging them to make more informed decisions in an easier way in order to achieve desired outcomes. This behavioral approach has also been applied by policy makers of different countries to policy issues in healthcare management systems, human safety and security, and economic livelihoods. 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 on COVID-19 intervention in Pakistan to analyze its efficacy.

1.2 Problem Statement

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 few of the nudges based on the behavioral insights of FEAST framework existed in government's interventions. Therefore, the current research focused on the identification of various nudges, specifically nudges based on the behavioral insights of FEAST framework (explained in the study's conceptual framework), the importance of these insights based nudges and how COVID-19 interventions could have been, could be and will be behaviorally informed to increase the overall efficacy of these interventions.

1.3 Research Questions

Following are the research questions:

1. What are the various government interventions regarding COVID-19 in Islamabad?
2. Which government interventions were behaviorally informed, and which were not in the selected locale?
3. Which behavioral insights were collected by the interventions, which have been utilized and how effective did these work?
4. Which kind of behavioral insights can be modified in order to increase the efficacy of interventions?
5. How FEAST framework (Fun, Easy, Attractive, Social, and Timely) can help increase the efficacy of COVID-19 interventions?

1.4 Objectives

Based on the research questions, following are the objectives of this study:

1. To identify various government interventions regarding COVID-19 in the study's locale i.e. Islamabad.
2. To analyze, whether these interventions were behaviorally informed or not.
3. To identify which behavioral insights have been utilized and analyze how effectively these insights worked.
4. To analyze which of the behavioral insights can be modified to increase the efficacy of interventions.
5. To incorporate behavioral insights of FEAST framework (Fun, Easy, Attractive, Social and Timely) in analyzing the efficacy of COVID-19 interventions.

1.5 Explanation of Key Concepts

Behaviorally Informed Interventions: Behaviorally Informed Interventions aims at influencing human behavior by using behavioral insights. These interventions must have both welfare effects and distributive justice. For the purpose of current research, behaviorally Informed Interventions means behavioral health interventions that are implemented in the form of informational campaigns, nudges and boosts used to influence human behavior in order to increase the efficacy of government policies in health situations like pandemics.

Behavioral Insights: Behavioral Insights can be understood as all means and moods of public policy aiming at influencing individual or collective behavior by using insights from behavioral economics, behavioral sciences, psychology or neurosciences. For the purpose of current research, Behavioral Insights means insights aiming at influencing human behavior by using progressive, regressive, educative, architectural, and a group of FEAST framework insights,

helping in informing government health interventions behaviorally in order to increase efficacy of health policies in pandemic situations.

Nudges: A nudge is defined as an intervention, from either private or public institutions, that affects people's behavior while fully maintaining their freedom of choice. For the purpose of current research, a nudge means steering people towards health-related disease preventive behaviors and behaviors aimed at teamwork cooperation alongside government interventions like vaccination in a pandemic situation, by using behavioral insights like FEAST Framework.

Heuristics: Heuristics are mental shortcuts that can facilitate problem-solving and probability judgments. These strategies are generalizations, or rules-of-thumb, reduce cognitive load, and can be effective for making immediate judgments, however, they often result in irrational or inaccurate conclusions. For current study, Heuristics are cognitive and mental biases like anchoring, availability and representativeness that happen to people in pandemic situations. Such biases may also arise at decision-making levels.

Biases: Bias is an irrational assumption or belief that affects the ability to make a decision based on facts and evidence. For current study, Bias is a prejudiced assumption that can be nudged back in the direction of true probability. Identification of a bias helps decision-makers to control the functioning of that bias by employing a nudge using behavioral insights leading to efficacy of government's behaviorally informed interventions or policy in pandemic situations.

FEAST Framework: FEAST Framework is a concept employed by behavioral public policy expert Cass R. Sunstein. He developed this idea from the EAST framework of Behavioral Insight Team in UK, which proposed four principles such as Easy, Attractive, Social and Timely for applying behavioral insights. In FEAST framework, F for Fun is added by Cass R. Sunstein to include the aspect of joy and amusement. For the current study, FEAST Framework

is a group of five behavioral insights that can be used to nudge people in order to increase the efficacy of COVID-19 intervention in Pakistan.

1.6 Significance of the Study

This study intended to provide an aided framework i.e. FEAST framework based on behavioral insights to be considered by policy makers at every step of policy cycle during situations like global outbreak of contagious disease i.e. COVID-19. Behaviorally informed interventions help in achieving desired outcome of government policies. This approach based on research findings 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.

1.7 Organization of the Study

The organization of the study includes a brief background of the study, explanation of key concepts, research problem, objectives of the study and its significance. The second chapter on literature review is based on the emerging field of behavioral public policy, the concept of nudge, FEAST framework and its use in the policy formulation within the context of health related issues like COVID-19 pandemic. The third chapter on methodology discusses the research strategy, design, methods, sampling techniques, units of data collection, locale of the study, process of data collection and analysis, timeline of primary data collection, thematic charts, interview guide and questions. The fourth chapter on results comprehensively analyze the primary data, visuals, policy documents by government and observational data. The fifth chapter on discussion discusses the results of study in the light of literature review and conceptual framework. The sixth chapter concludes the study with its future usefulness.

CHAPTER 2

LITERATURE REVIEW

The review of literature surveys the relevant themes on the subject matter. For the current study, the review of literature is organized around three key themes: Behavioral Public Policy, Nudges and FEAST framework, and Nudges, Behaviors and COVID-19. After having reviewed the major and minor arguments in the studies, conceptual framework is developed, towards the end of this section.

2.1 Behavioral Public Policy

(Strabheim, 2020) explains the rise of behavioral public policy on 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 since last 70 years. How scholars like Lasswell (1951), Simon (1957) and Lindblom (1959) discussed the logical limitations in decision making of humans and how Kahnemann and Tversky in 1980s contributed to the field of behavioral economics. How public policy journals are publishing more experimental studies based on human behavior since 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 across Western Europe, Central America, Asia, Africa and Middle East. More than 70 behavioral sciences organization 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 of (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 institutional and cultural configuration of knowledge and decision making. For instance, the Behavioral Insight Team (BIT) argued that officials at 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, illusion of control, and illusion of similarity. Moreover, the Randomized Controlled Trials (RCTs) considered to be the universal way of evaluating policies have its own drawbacks because of its 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 citizen's preferences can more easily be dismissed as biases while they offer policy elites a way to realize their goals.

(Strabheim, 2020) mentioned the theories of political epistemology i.e. it restructures the mechanisms by which knowledge-making and decision-making are interweaved. He 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, British government developed behavioral research teams in almost every department. In UK the BIT established its contacts with US Office of Information and Regulatory Affairs (OIRA), 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, the number of BIT staff increased with the establishment of new connections with the Behavioral Insight Network of Netherland, Ministry of Finance of Mexico and 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 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 the policy makers and behavioral experts should be conscious of the threat of technocratic and epistocratic ideas of governance in the hope that the flaws of democratic system can be overcome by a more rational rule of knowledgeable.

2.2 Nudges and FEAST Framework

Cass R. Sunstein's FEAST framework has been evolved from EAST framework (Fun, Easy, Attractive, Social, Timely) developed by Behavioral Insight Team in UK. They utilized behavioral sciences in order to develop basic behavioral insights. Later on, United States and Germany also developed their own behavioral sciences teams. In 2015, World Bank also analyzed behaviorally informed tools in its report. Extensive work on behavioral sciences have revealed that human beings are not perfectly rational (Pohl, 2016). Human beings tend to show behavioral biasness like present bias, unrealistic optimism, loss aversion, inertia and procrastination (Thaler & Sunstein, 2009). These behavioral biasness leads humans to make imperfect choices leading to lower efficacy of implemented policies. Therefore, humans have to be nudged and their behaviors influenced by using basic behavioral insights. A nudge is defined as an intervention, from either private or public institutions, that affects people's behavior while fully maintaining their freedom of choice (Sunstein C. R., Behavioral Science and Public Policy, 2020). FEAST framework as a group of five behavioral insights tends to provide a way to nudge people to do something as to increase the efficacy of government interventions. Nudges can be either progressive (beneficial effects on poor class) or regressive (harmful effects on poor class) and either educative (warnings, reminders, disclosure of information) or architectural (automatic enrollment, mandatory choices, simplification) (Sunstein C. R., SSRN, 2021). Choice architecture affects how humans make choices while

nudges helps in designing a best possible choice environment. People need nudges when they face choices that have delayed effects (smoking or drinking alcohol), those that have higher degree of difficulty (picking the right mortgage is difficult choice than choosing the right loaf of bread), those that are faced infrequently (choosing a college or career), those that offer poor feedback (we usually get feedback only on the options we select, not the ones we reject), and those for which the relation between choice and experience is ambiguous (Thaler & Sunstein, 2009).

Speaking more of FEAST framework, (Sunstein C. R., How Fun Might Move the World, 2020) podcast and the themes it explored is added in this review section. Sunstein's analyzes one of the behavioral insight known as Fun. How fun can be deployed in policy space and how it can be used as a policy solution. What kind of challenges does the behavioral insight of fun face in its universal application? Why fun doesn't work in some cultures and societies. How fun act as a social equalizer in a society. How fun is incorporated into the EAST framework of behavioral change to make it FEAST framework and lastly what are the examples where the behavioral insight of fun has been used to influence human behavior in a certain way. Sunstein's major argument is that fun can be an interesting behavioral insight that can be used to influence human behavior to achieve maximum result or efficacy in any policy. Fun symbolizes smile, ease, joy, play, associative and amusement that can be associated with certain policies to make it effortless and delightful. To further explain the insight of fun, Sunstein mentioned examples of Pepsi Max and its difference with Pepsi Diet, frustration free packaging of Amazon by using plastic free packages, delicious colorful vegetables and its difference with healthy vegetables and lastly the use of fun insight in the speeches of political leaders like Prime Minister of New Zealand by describing the Tooth Fairy and the Easter Bunny as "essential workers," legally authorized to carry on their work amid COVID-19 pandemic. Within these examples, Pepsi Max, frustration free packaging of Amazon, delicious colorful

vegetables and usage of terms like Tooth Fairy and Easter Bunny to connect with ordinary people are all usage of fun insight. Moreover, the first and the second generation of behavioral economics and behavioral sciences is a response to rational actor models while its third and fourth generation are mostly related to the association between human motivations and outcomes. According to Sunstein, rational actor models states that humans behave in a way as to maximize their personal utility but in reality, humans don't always behave in such a way rather they suffer from behavioral biases like present bias, unrealistic optimism, loss aversion, inertia and procrastination thus, minimizing their personal utility without their knowledge. Therefore, identifying such behavioral biases is a response of first and second generational behavioral economics and behavioral sciences to the rational actor model. While the third and fourth generation of behavioral economics and behavioral sciences rectify such biases and establishes association between human motivations and outcomes.

A very important aspect of FEAST framework is Nudge, for which Thaler's and Sunstein's book with the same title is added in this section. Nudge is a book on behavioral economics written by focusing on the analyzing behavioral concept nudge and demonstrates various key principles of behavioral economics in order to influence human behavior in such a way as to improve the decisions about health, wealth and happiness. Nudge is an intervention, from either private or public institutions, that affects people's behavior while fully maintaining their freedom of choice. Due to this reason nudge can considered as a form of libertarian paternalism or soft paternalism.

The major argument of (Thaler & Sunstein, 2009) is that extensive work on behavioral sciences have revealed that human beings are not perfectly rational and they tend to show number of heuristics and biasness like anchoring (comparing then guessing), availability (perceived popularity), representativeness (stereotyping and comparison), over-optimism (under/over-estimation), loss aversion (holding on to things), status quo bias (inertia), framing (orientation

and presentation), temptation (greed and short-term reward), mindlessness (not concentrating), self-control strategies (habits and routines to counter weaknesses), herd mentality (conforming and following the herd), spotlight effect (effects from the idea that everyone is watching my decisions and the fear of making errors), priming (the ways people can be made ready before thinking and deciding).

Therefore, humans have to be nudged and their behaviors influenced in order to improve decisions about health, wealth and happiness. These heuristics and biasness collectively form a toolkit for nudge theory. Moreover, nudges depend on the choice architecture. Choice architecture affects how humans make choices while nudges helps in designing a best possible choice environment. Furthermore, nudges can be scaled up to the level of government by nudging its citizens so that it can improve the welfare of overall society by enhancing decisions about money saving and investments, drug prescriptions and organ donations, and last but not the least is improving school choices and privatizing marriages.

2.3 Nudges, Behaviors and COVID-19

2.3.1 Science-based Policy Advice and Hammer Approach

(Soete, 2020) analyzes the role of science in policy making within the context of COVID-19 pandemic. He explains how the significance of science has increased in policy making amid COVID-19 public health challenges with the increased experimentation and testing of new vaccines. How this significance has and in future can cause certain worrying issues. What are the drawbacks of hammer approach (crush the virus approach) proposed by 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 policy making 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 the COVID-19 led the professionals of virology and epidemiology

to reject any discussion from the researchers outside of these 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 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 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 Spanish Flu was different as compared to the current environment of COVID-19 pandemic. Moreover, by applying hammer approach, one fails to assess the marginal impact of each measure because all measures are implemented all at once in 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 the insight 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 focuses only on national data while providing policy advice for combatting COVID-19 leading to a strong national bias in policy making. This bias can be considered as the third worrying issue of science-based policy advice for measures to combat COVID-19. To further understand this issue the example of European Union (EU) during COVID-19 pandemic can be illustrated. To cope with this pandemic every country within EU made policies in line with the national settings while undermining the notion of European values to deal with the pandemic on 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 of dealing with this, which resulted in the first collateral damage of COVID-19 in Europe.

2.3.2 Nudges, Boosts and their Legality

(Fabbro, 2021) analyzes the behavioral insights and nudging as policy tools in the fight against infectious diseases like COVID-19. He explains how nudging and behavioral insights can be used as a policy tool in policy making process. How nudges act as a double-edged sword, which can either compromise or preserve individual freedom thus making it a sensitive policy tool. How applying nudges in a legal system is a challenge and what are the solutions to it. How the application of behavioral insights and nudges will work in health sector and how different countries applied it to their health sectors in order to combat COVID-19. The major argument of (Fabbro, 2021) is that behavioral insights and nudges can be legitimately used as policy tools of public policy which can help health sector in combating infectious diseases while preserving the individual freedom intact. Generally, governments around the world use traditional tools of public policy for the purpose of governance. These traditional tools usually involve bans and ministerial decrees etc. which are mostly rigid in nature. While on the other hand there are tools of behavioral insights such as nudges that are not rigid in nature and are not compulsory to follow. Moreover, it can be stated that nudges are a sort of middle ground between command and control, between mandates and incentives. However, there are certain criticism on nudges regarding its freedom aspect. Firstly, that due to its paternalistic nature it can steer and manipulate citizen's choice. Secondly, it questions the citizen's own judgment of what is good and what isn't. Thirdly, it can also be assumed that just like citizens, policy makers can also become victim of decision-making biases. Fourthly, policy makers can also be nudged by private sector which is seeking its own interest.

Similarly, nudges are also a challenge for the legal system firstly because it is difficult to form an already established framework of regulation which includes a diverse range of evolving nudges and its choice architecture. Secondly, due to their lack of coercive nature it will be difficult to make policy makers accountable who employed the specific nudges. Thirdly, citizens who are nudged are unaware of this fact that they are being nudged as a result of which they can't request for scrutiny. Therefore, to address these challenges, citizens should be allowed to understand the intention of nudges being employed on them, there should be public legal registry of nudges and nudges should be under the scrutiny of principles of administrative law.

Keeping in view these criticisms and challenges governments around the world developed behavioral insights and nudge units in their ministries or as an independent organization working in collaboration with government. For example, Behavioral Insight Team in UK and its affiliated organizations in different countries around the world. Moreover, behavioral insights and specifically nudging contributed to the COVID-19 response activities and it can also contribute in the future. Countries that used behavioral insights for combating COVID-19 involves UK, Denmark, Ireland, Italy, Germany, China and New Zealand. Furthermore, research firms like BUSARA and UN innovation lab in Egypt also used behavioral insights. Furthermore, countries can be classified into three groups based on the approval rates of citizens to different type of nudges. Those countries have higher approval rates among citizen who have their own centralized nudge units. The first group is overwhelming pro-nudge nation e.g. China. The second group is principled pro-nudge nation e.g. UK. The third group is cautiously pro-nudge nation e.g. Denmark. However, there are certain criticism on the use of behavioral insights in pandemic. Firstly, that it lacks psychological integrity i.e. they predict irrational behaviors but don't explain why they occur. Secondly, that it acts against the traditional tools of public policy. In response to these criticisms, (Fabbro, 2021) stated that

behavioral insights and specifically nudging don't aim to establish theory of behavior but just aim to inform public policy and that it doesn't act against traditional tools, but it complements the traditional tools of public policy.

(Krawiec, Piaskowska, Piesiewicz, & Bialaszek, 2021) demonstrates how law can be supported by behavioral interventions like nudges and boosts. They explain how nudges and boosts can be used as tools for behavioral change. What are the classifications of nudges and boosts? How behavioral tools like nudges and boosts can work within the boundaries of legal system and how behavioral tools can be used to combat the effects of COVID-19. The major argument of (Krawiec, Piaskowska, Piesiewicz, & Bialaszek, 2021) is that behavioral tools like nudges and boosts are not the substitute for traditional and formal regulations or laws, but it is an integral part of it in such a way that it complements the traditional and formal regulations or laws. Boost can be defined as a tool used to increase the competence of the decision maker to make the best possible decisions, according to decision maker's preferences and whatever is appropriate in a given situation. Boosts are classified into three categories namely risk literacy boosts, uncertainty management boosts and motivational boosts While nudges can be classified into two categories. First are nudges structuring the choice task (defaults, simplification, social reference, change effort and disclosure). The second are nudges describing choice options (warnings, reminders, precommitment and feedback). It is important to understand the relationship between state and law in order to know whether the state can use behavioral tools like nudges and boosts. To address this concern (Krawiec, Piaskowska, Piesiewicz, & Bialaszek, 2021) put forward a theoretical framework to show the possible ways the state can follow when deciding about the use of behavioral tools. In addition to the theoretical framework, the state should also follow the principle of proportionality when using behavioral tools like nudges and boosts. Moreover, behavioral tools like nudges and boosts can be used to combat the effects of COVID-19. These behavioral tools can be used to combat the effects

like hoarding, loneliness, mental issues and misinformation. For example, the Polish Ministry of Health used a behavioral tool known as DDM (Disinfection, Distance, Mask) providing a standard for citizens' behavior. Furthermore, combining law and behavioral tools is a dynamic process and it has to be further determined in the future.

2.3.3 Nudges and Individual Autonomy

(Sasaki, Saito, & Ohtake, 2021) uncover behavioral economics nudges that can influence people's behavior to receive COVID-19 vaccine without affecting freedom of choice. They explain why it is important to promote the vaccination and how such promotion can be achieved using behavioral economics tools like nudges. How the tool of nudge can be used in the form of messages to communicate with people. Who is willing to pay for the vaccination and who is willing to receive money as an incentive for their vaccination? How and to what extent such nudge-based messages will affect the individual autonomy. The major argument of (Sasaki, Saito, & Ohtake, 2021) is that governments should use behavioral economics nudges in order to influence people's behavior to receive COVID-19 vaccine. Moreover, governments should use various kinds of messages based on their targets, purposes, target population and age groups in order to encourage voluntary vaccination behavior in people.

(Sasaki, Saito, & Ohtake, 2021) conducted a pre-registered online based survey in Japan targeting the general masses. The time period for the survey was three days from March 16, 2021 to March 18, 2021. The survey was conducted a month earlier to the nationwide vaccination in April. Responses were collected from 1595 respondents including 798 older adults and 797 young adults. These 1595 respondents were divided into four groups. One of the groups was control group to be used as a benchmark while the remaining three groups were treatment groups. The second group (Group A) received comparison nudge to compare the encouragement of vaccination between older adults and young adults. The third group (Group

B) received influence-gain nudge to encourage vaccination behavior. The fourth group (Group C) received influence-loss nudge which means if one is not willing to get vaccinated, other will not too. After displaying these nudge-based messages to these groups, the group members were asked questions to measure their Willingness to Pay (WTP), which is the maximum amount of money they are willing to pay to get vaccinated. Furthermore, to measure whether the respondents felt autonomous in their decision making after receiving nudge-based messages the respondents were asked four questions related to autonomy and emotional burden. Then regression analysis was used on all the data to measure the results of its survey. The key findings were that influence-gain nudge increased the number of older adults willing to be vaccinated if vaccine is offered for free. Secondly, comparison nudge and influence-loss nudge strengthen the intentions of older adults who were already willing to be vaccinated. Thirdly, nudge-based messages had no prominent encouraging effect on the young adults. This study makes important contribution to academic and policy study leading to opening of further avenues for research in the field of nudge-based messages in the context of COVID-19.

2.3.4 Behavioral Health Interventions

(Cutter, 2004) reviews the outcomes of behavioral health interventions of the past and analyzes which behavioral health intervention failed and which one 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 with regard to their health. Since 1970s, behavioral health interventions are implemented at three levels i.e. interventions at individual level, at community level and at the national level. The major argument of (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 outcome. The second one is the theory of externalities which means 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 individual behave in a manner that is prevalent with the behavior of other people in a group. Moreover, national interventions have much greater and 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 doesn'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 totally right in explaining why some behavioral health interventions succeeded and some failed, why the behavioral health interventions at national level were more successful as compared to those at 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 the health-related problems.

2.3.5 Visuals based Nudging and Vaccine Hesitancy

(Jensen, Ayers, & Koskan, 2021) outlines and experimentally test video-based messages of motivation directed at reducing COVID-19 vaccine hesitancy and nudge uptake. It is a well-known fact that vaccine is the key to combat the spread of COVID-19 by reducing the number of hospitalized people and saving lives. The number of fully vaccinated people in US were 55% as of September 21, 2021 which is less than the target set for vaccination. People in US and specifically younger generation are hesitant toward vaccination. Therefore, it is crucial to nudge people in order to encourage them toward vaccination. The effectiveness of nudges in health sector has been proved by previous research in the field of behavioral sciences and public

health. The major argument of (Jensen, Ayers, & Koskan, 2021) is that theoretical-informed video-based messages can reduce COVID-19 vaccine hesitancy and increase vaccine uptake. However, there are some psychological drivers that influences vaccine hesitancy. These psychological drivers include confidence, complacency, constraints, calculation and collective responsibility. Nevertheless, video-based messages can reduce vaccine hesitancy and increase future uptake in two ways using two of the psychological drivers mentioned above. Firstly, by boosting confidence in vaccines and secondly by removing psychological constraints towards vaccination. For this purpose, two surveys (T1 and T2) were conducted. The first survey was conducted between January and February of 2021 with a total of 1620 participants. Recruited via Amazon's online labor market platform known as Amazon Mechanical Turk (MTurk). Out of these 1620 participants, 112 participants were already vaccinated, and 37 people were removed from the survey because their identification was not certain, leaving us with a total number of 1471 participants. The purpose of first survey was to obtain demographic information of participants. For the second survey, these 1471 participants were invited via emails. Out of which 890 participants responded and 447 were not fully vaccinated. These 447 participants were randomly shuffled to view one of the five video-based messages to motivate them to get the vaccination of COVID-19. Out of these five video-based messages, four were based on the Theory of Planned Behavior, while the remaining one was placebo video-based message based on the control script. Both of these surveys were then approved from the Institutional Review Board at Arizona State University. With the data received from the two surveys, OLS regression analyses was conducted on it. The most important key findings of these surveys were that video-based messages can motivate thousands of American people to vaccinate themselves if such video-based messages are part of national vaccination campaigns. Furthermore, it was also underlined that trust in public leaders and institutions was also important in public health guidance.

2.3.6 COVID-19 and Awareness in Pakistan

(Mahmood, et al., 2020) analyzes the attitude, perception and knowledge of COVID-19 among general public in Pakistan. They explain how the assessing of perception and psychology of population is important for general public safety and in combating the spread of diseases like COVID-19. The increasing focus regarding the perception and psychology of people has led to the conduction of education programs all over the world based on mental well-being during COVID-19. Similarly, since the origin of COVID-19 almost half of the books written on this topic belongs to the realm of mental well-being. The major argument of (Mahmood, et al., 2020) is that the government and the public have taken effective measures during COVID-19 but there is a need for further awareness and knowledge among general public of Pakistan, specifically those with lower education and income levels. Moreover, it was also found that people with lower income levels are more prone to join social gatherings as compared to people with higher income levels. (Mahmood, et al., 2020) keeping in view the COVID-19 situation and lockdown conducted an online cross-sectional survey on Google forms by sending these forms to random individuals via email, WhatsApp and Facebook groups. In the survey, 17 questions were asked in a total of 1000 questionnaires from individuals throughout Pakistan. Before sending questionnaires to individuals, it was assessed by healthcare professionals and a group of 20 participants whose feedback was also incorporated into it. For statistical analysis, the results were saved in CSV format and MS Excel 2013 and SPSSv21 were used to evaluate the data. Results showed that out of 2000 invited individuals, 1159 responses were received, in which 159 participants either didn't knew English language in which the questions were asked, or they never heard of COVID-19. Therefore, the remaining 1000 responses were evaluated throughout the study.

The demographic details of the respondents showed that 68.4 percent of people were between age 18-27, 62.1 percent were males and 37.9 percent were females, maximum number of people 46.6 percent belonged to Punjab province, 55.9 percent were bachelor or professional degree holders, 19.1 percent were master's degree holders and 0.3 percent below matriculation. 35.3 percent were students and 32 percent were professionals from health sector. 25.6 percent people have a household income between 40,000 and 59,999 PKR. The key findings were that three-fourth of participants knew about COVID-19 via social, print electronic media, a small number of people had direct exposure, 48.3 percent people were working from home, 21.7 percent faced complete shutdown of their business, 20.1 percent continued their jobs as before, 65.6 percent have not been to any gathering, 3.6 percent have been to gathering, 39.3 percent washed their hands after every hour , 35.3 percent washed their hands few times a day, 1.6 percent do not wash their hands, 56.3 percent used surgical masks, 18 percent used cloth masks, 6.3 percent used N95 masks, 17.8 percent didn't use mask, 1 percent didn't know about masks. 24.8 percent considered thermal scanners as useful, 30.1 percent didn't consider it useful. 46 percent think COVID-19 is a bioweapon, 42.6 percent think it is not a bioweapon, 11.4 percent think maybe it a bioweapon or not. The limitation of this study is that firstly it was limited to only those people who can read and write English language. Secondly, it was limited to those people who had access to internet. While the strength of this study is that a large number of participants belonged to medical profession. However, it is a fact that there is a need for improvement in the knowledge of general population about COVID-19.

2.4 Summary

The literature of this study explains how behavioral public policy and its major phases came to prominence as compared to the rationalist tradition of public policy. The literature examines the concept of nudging people to achieve desired outcomes and how EAST framework of

behavioral insights developed by Behavioral Insight Team in UK was modified by Cass R. Sunstein into FEAST framework of behavioral insights. It then delineates behavioral insights of FEAST framework applied in different countries. Lastly, the literature focuses on the COVID-19, how nudges and behavioral insights work in pandemic like situation and how such nudges have worked in the past according to the cited surveys and research.

2.5 Research Gap

Despite the numerous studies conducted on the topic of using various behavioral insights based interventions in public health policies specifically during pandemics like COVID-19, there is still a lack of research on the efficacy of interventions based on the five behavioral insights of FEAST framework specifically in the context of COVID-19 pandemic. Moreover, many of these existing studies have focused on the developed countries, leaving a significant research gap in other parts of the world. For instance, many developing countries like Pakistan does not have official BIT or BIU to behaviorally inform public health policies while taking into consideration the regional environmental characteristics. Therefore, in this case the type of research gap is contextual in nature because of the absence of research in the specific contexts of FEAST framework, COVID-19 and Pakistan simultaneously.

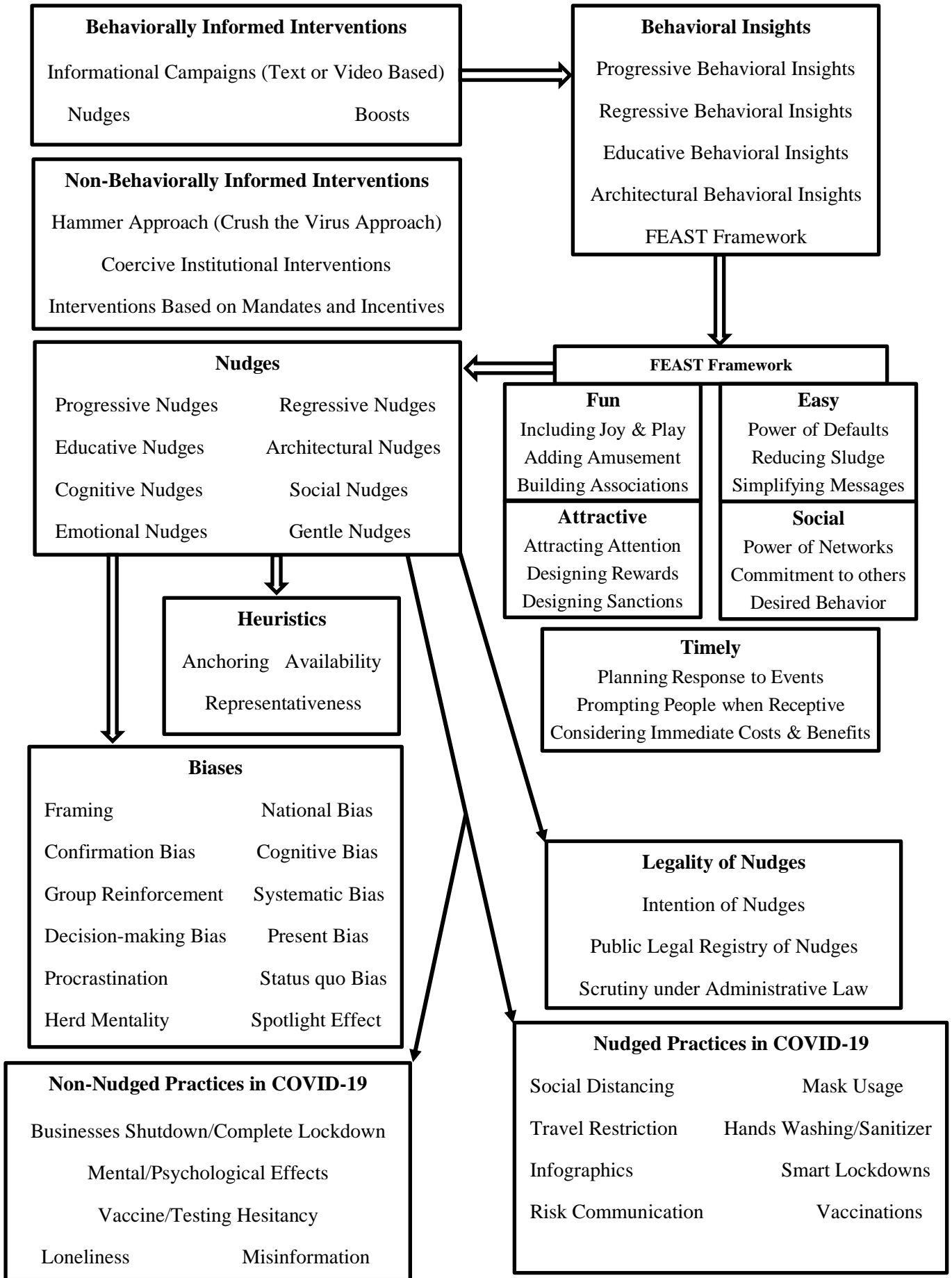
To address this contextual research gap, this study was conducted, which will guide the future researchers and policy makers on how and what to consider while behaviorally informing the public policy in Pakistan.

2.6 Conceptual Framework

In the following conceptual framework, we mapped out different concepts of behavioral public policy and public policy process for COVID-19 interventions. In order to illustrate the relation

of our research questions with the conceptual framework, the following important points/relations were identified.

- The first research question asks about the various government interventions regarding COVID-19 in Islamabad. For this reason, our conceptual framework starts with a number of interventions that government have used or can use.
- The second research question asks about the various government interventions that were behaviorally informed and those that were not. For this reason, our conceptual framework identified behaviorally informed interventions such as informational campaigns (text or video based), nudges and boosts. While the non-behaviorally informed interventions can be hammer approach (crush the virus approach), coercive institutional interventions and interventions based on mandates and incentives.
- The third research question asks about the various behavioral insights that government used and how effective did these insights worked. For this reason, our conceptual framework identified behavioral insights such as progressive, regressive, educative, architectural, and lastly insights based on the FEAST framework.
- The fourth research question asks about the various already implemented behavioral insights that can be modified to increase the efficacy of behaviorally informed interventions. For this reason, our conceptual framework identified a number of nudges and its legality, biases, and heuristics. Similarly, already nudged and non-nudged practices in COVID-19 were identified and illustrated to help in modification of insights.
- The fifth research question asks about the behavioral insight of FEAST framework and how it can help in increasing the efficacy of COVID-19 interventions. For this reason, the five elements of this framework i.e. Fun, East, Attractive, Social and Timely were illustrated.



CHAPTER 3

METHODOLOGY

3.1 Research Strategy

The current research was qualitative in nature. The choice of qualitative research fitted well with responding all the proposed questions. The first and second research questions were about highlighting the number of interventions developed, operationalized and exercised by NCOC in Islamabad. The impetus behind second question was to signify, based on parameters of FEAST framework, which interventions were behaviorally informed, and which were not. Articulating all the behavioral elements of framework (Fun, Easy, Attractive, Social and Timely), with interventions, require depiction, description and explanation (Bryman, 2012), hence qualitative research was chosen as the study's research strategy. Similarly, the types of behavioral insights, how were those collected, and incorporated in the intervention design and how effective were those, also support the choice of qualitative research.

3.2 Research Design

The research design was descriptive as it intended to list the behaviorally informed interventions in Pakistan, described the effectiveness of these interventions, and how interventions were made more behaviorally informed.

3.3 Units of Data Collection (UDCs)

The Units of Data Collection were the individuals, groups, processes, phenomena, visuals, documents and symbols which yield data. For the current study, following were the units of data collection:

- UDC 1: NCOC personnel (NCOC later merged into NIH)
- UDC 2: Policy documents (based on NCOC's interventions)
- UDC 3: Medical doctors
- UDC 4: People who have recovered from COVID-19
- UDC 5: Health-care-related and social situations, events, and processes during interventions (testing and vaccination sites).
- UDC 6: Visuals (still and moving, both) produced and disseminated by the government interventions.

3.4 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 4. In these episodic interviews, both episodic and semantic knowledge on behaviors were elicited from UDC 4. The data collected through interviews was then transcribed and analyzed using thematic analysis. Theoretical sampling technique was used for this UDC, which entails collecting data till point of saturation is achieved. I 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 groups heterogeneity was ensured along the axis of age, gender, and severity of symptoms.

With UDC 1 and UDC 3, semi-structured interviews were conducted to collect behavioral insights. A combination of closed- and open-ended questions were asked on nudges, SOPs compliance, heuristics, FEAST framework and institutional responses to COVID-19 in Pakistan. The data collected through interviews was transcribed and analyzed using thematic

analysis. Purposive sampling technique was used as these UDCs entail knowledge, expertise and experience, related to the subject matter.

The UDC 2 was analyzed using document analysis as the tool, in which key themes were identified, structured under those themes were sub-themes, those sub-themes were then articulated in the light of behaviorally-informed or not, and what behaviorally-informed interventions were designed. Purposive sampling was used for collection of data from this unit.

For UDC 6, visual analysis was used in which still and moving images used for nudging people towards SOPs compliance, testing and vaccination, were analyzed by identifying its key conetnts.

Lastly, for UDC 5, observational methods were used to jot and narrate data which was collected/observed during fieldwork. The data was related to health care social situations, events, and processes at the testing and vaccination sites.

The study’s methodological details are explained in the following Table 3.1:

Table 3.1: Study’s Methodological Framework

UDCs	Research Methods	Research Instruments	Sampling	Approach and Tool of Analysis
UDC 4	Episodic Interview (6 EIs) & Focus Group Discussions (2 FGDs)	Interview Guide for EIs & Topic Guide for FGDs	Theoretical sampling	Approach: Thematic Analysis Tool: Framework Analysis
UDC 1 and UDC 3	Semi-structured interviews (3 SSIs)	Topic Guide/Interview Guide	Purposive Sampling	Approach: Thematic Analysis Tool: Framework Analysis
UDC 2	Document analysis (20 major and minor Documents)	<i>Please see last column</i>	Purposive Sampling	Identifying key themes, narrating data under themes/sub-themes and articulating behaviors with COVID-19 interventions.
UDC 6	Visual analysis (20 still and moving visuals)	<i>Please see last column</i>	Purposive Sampling	Visual content analysis
UDC 5	Observational Methods	Index cards and field diary	Purposive Sampling	Jotting narrations and narrative analysis

3.5 Locale of the Study

During COVID-19, different approaches have been utilized but behavioral approach of FEAST framework to analyze the efficacy of COVID-19 intervention was 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, 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 lockdown was to break the cycle of disease transmission without locking down the whole city (NCOC, 2021). “The Final Guidelines for Smart Lockdown” issued by National Command and Operation Center (NCOC) involves a list of interventions. These interventions were analyzed using the behavioral approach of FEAST framework.

The purpose of selecting Islamabad as our study locale and as a case for our analysis was the realization that Islamabad as a 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 interventions.

3.6 Research Ethics

The guidelines followed during the process of data collection were maintained in such a way as to ensure the ethical standards of research. For the process of conducting interviews, all of the respondents gave informed-consent and pledged that they are participating voluntarily.

Secondly, for maintaining the confidentiality of respondents, fictitious names were used instead of their real ones. Lastly, all of the data was interpreted honestly and objectively.

3.7 Process of Data Collection and Analysis

For the primary data collection, initially interviews were conducted with the total of eighteen respondents. In which detailed episodic interviews were conducted with the first six respondents as shown in the table 3.2 keeping in view that respondents belong to diverse gender, age and area of belonging. Subsequently, for the purpose of conducting focus group discussions, initially first detailed meeting and discussion was arranged with the future respondents in which they were made to familiarize with the nature of upcoming discussion and certain terminologies. Moreover, they were shown some of the government's disseminated still and moving visuals so that they are able to discuss the visuals that they themselves have seen during COVID-19 pandemic. Later on, the second detailed focus group discussion was conducted with the remaining last nine respondents considering the factor of diversity among respondents as shown in the table 3.2. In contrast to episodic interviews, the purpose of focus group discussions was not to specifically consider respondent's personal experience of COVID-19 but to also get their point of view on government interventions and behavioral insights hence the first meeting and discussion was conducted as a roadmap for the second one. For the same reason the questions of focus group discussions were different from episodic interviews and mostly similar to semi-structured interviews with UDC 1 and 3 because both semi-structured interviews and focus group discussions typically relies on open-ended questions and the only difference is that the former tends to be more individual focused while the latter is more group focused. Lastly, semi-structured interviews were conducted with three respondents as shown in the table 3.3. One of the respondent was Chief Scientific Officer at NIH (NCOC the principle body for COVID-19 in Pakistan was later merged into NIH before

this research was conducted. Therefore, the above mentioned respondent from NIH was considered for detailed semi-structured interview).

Table 3.2: Respondents Profiles of UDC 4

Respondent No.	Name, Gender, Age	Area of Belonging	Qualification	Profession
No. 01	Ali, Male, 26	Swat	MPhil	Student
No. 02	Ahmed, Male, 26	Wana	Bachelors	Healthcare Assistant
No. 03	Haroon, Male, 27	Islamabad	Masters	Businessman
No. 04	Emaan, Female, 25	Hunza	MPhil	Research Assistant
No. 05	Alya, Female, 26	Rawalpindi	Masters	Lecturer
No. 06	Qudratullah, Male, 29	Islamabad	MPhil	Merchant
No. 07	Saima, Female, 21	Chakwal	Undergraduate	Student
No. 08	Minahil, Female, 22	Kohat	Undergraduate	Student
No. 09	Maria, Female, 23	Rawalpindi	Undergraduate	Student
No. 10	Hania, Female, 20	Arifwala	Undergraduate	Student
No. 11	Anila, Female, 23	Chakwal	Undergraduate	Student
No. 12	Maqsoom, Male, 22	Jhang	Undergraduate	Student
No. 13	AbdulGhaffar, Male, 19	Rawalpindi	Undergraduate	Student
No. 14	Shafiq, Male, 22	Sargodha	Undergraduate	Student
No. 15	Imran, Male, 25	Chitral	Masters	Pharmacist

The other two respondents should have been specifically academic experts in behavioral sciences according to the UDC 3 but considering the limitation in the policy formulation process in Pakistan, medical doctors were included in policy making and advocacy. And according to these medical doctors, advice on behavioral aspects were taken from them in the policy making process. Therefore, medical doctors were considered for the detailed semi-structure interviews. One of the respondent was consultant cardiac surgeon at CDA hospital and the other one was resident PG internal medicine at Shifa hospital.

Table 3.3: Respondents Profiles of UDC 1 and 3

Respondent No.	UDC	Name, Gender	Profession/Designation
No. 16	3	Dr. Mahnoor Anwar, Female	Consultant Cardiac Surgeon, CDA Hospital, Islamabad
No. 17	3	Dr. Saifullah Khan, Male	Resident PG Internal Medicine, Shifa Hospital, Islamabad
No.18	1	Dr. Waseem Malik, Male	Chief Scientific Officer, NIH, Islamabad

For the secondary data collection, twenty major and minor policy documents formulated by government agencies like NIH, NCOC, Federal EPI and FDI under the supervision of MNHSRC were analyzed by identifying their key themes and sub-themes. The list of selected policy documents is listed in appendix A and the time period of these policy documents is in between March 13, 2020 and May 11, 2022.

Similarly, the content of fifteen moving visuals and five still visuals produced by NIH and NCOC were analyzed by identifying the key contents. These visuals are illustrated along with

analysis in the next chapter, section 4.3. While the complete list of selected still and moving visuals is listed in appendix B and the time period of these visuals is in between 2020 and 2021. For UDC 5, the health care social situations, events, and processes at the testing and vaccination sites were directly observed and the data was jotted down and narrated for analysis. This included the flow of people in and out of the vaccination centers, how they moved through the different stages of the vaccination process, how was the behavior of people waiting in line for the vaccine and their interactions with each other, how was the interaction between healthcare workers and people, how were the healthcare workers providing information about the vaccine and addressing people concerns. Moreover, photographs of the token and registration counter, waiting room, flex banners, vaccination process and vaccination vehicles for senior citizens and disabled persons were recorded at mass vaccination center of Islamabad and the NIH. The observational data and photographs were then narratively analyzed to identify themes. The purpose of using observational method for this UDC was to provide an objective and accurate account of observed and recorded data in a natural setting, providing a more accurate picture of what was happening rather than solely relying on self-reported data and interviews.

3.7.1 Timeline of Data Collection

The timeline of data collection is explained as following:

- On February 06, 2022, for the purpose of observing health care social situations, events, and processes at the testing and vaccination sites, a visit was paid to the mass vaccination center at F9 park Islamabad and NIH.
- On May 29, 2022, for the purpose of building rapport at NIH, meeting with the virologist of NIH, Dr. Mujtaba at Quaid-i-Azam University Islamabad took place. The purpose of this very research and the concerned person for the semi-structured interview was discussed in detail.

- On May 30, 2022, first focus group discussion was conducted with a group of nine respondents to build rapport and familiarize the respondents with the nature of research and inquiry. The purpose of this discussion was to set a roadmap for the following focus group discussion.
- On June 01, 2022, second focus group discussion was conducted with a group of nine respondents at the department of pharmacy, Quaid-i-Azam University Islamabad.
- On June 08, 2022, Dr. Mujtaba arranged a meeting for me with his senior virologist Dr. Massab at NIH. In meeting, the process of conducting semi-structured interview with the concerned person was discussed in detail.
- On June 09, 2022, according to guidance of Dr. Massab, NOC for data collection duly signed by the head of PIDE school of social sciences Dr. Hafsa Hina was submitted at the office of the executive director of NIH Maj. Gen. Aamer Ikram.
- On July 01, 2022, after receiving response from the office of the executive director of NIH, first semi-structured structured interview was conducted with the chief scientific officer of NIH Dr. Waseem Malik.
- On August 20, 2022, second semi-structured interview was conducted with the consultant cardiac surgeon of CDA hospital Dr. Mahnoor Anwar at CDA hospital Islamabad.
- On August 22, 2022, first and second episodic interviews were conducted with two respondents separately at Quaid-e-Azam University Islamabad.
- On September 01, 2022, third episodic interview was conducted with a respondent at Beverly Center, Islamabad.
- On September 05, 2022, fourth episodic interview was conducted with a respondent via online call.

- On September 13, 2022, third semi-structured interview was conducted with the resident PG internal medicine of Shifa Hospital Dr. Saifullah Khan via online messenger call.
- On September 20, 2022, fifth episodic interview was conducted with a respondent via WhatsApp call.
- On September 25, 2022, sixth and the last episodic interview was conducted with a respondent via WhatsApp call.

3.7.2 Interview Guide and Questions

In episodic interviews with UDC 4, the following questions were asked:

- Have you faced any pandemic like situation before COVID-19?
- When did you first hear about COVID-19?
- How did you know about its severity/deadliness?
- What was your first experience with COVID-19?
- Why you were infected with COVID-19?
- Can you tell me about a situation in which this pandemic has affected your life more than previously?
- How COVID-19 has affected your family and work life?
- How did you handle/follow the precautionary measures?
- How did government help you in following precautionary measures?
- Did government help lead to influence your behavior in following precautionary measures or nudged you toward testing and vaccination?
- Have you seen any behavioral aspect of fun, easy, attractive, social and timely in any of the government intervention regarding COVID-19?
- How did you handle/fight misinformation?

- Would you like to provide more information about your experience with COVID-19?

In focus group discussions with UDC 4 and in semi-structured interviews with UDC 1 and 3, a combination of the following questions was asked:

- Were there any reminders/ warnings/ precaution measures propagated by government to steer people toward health preventive behaviors, testing and vaccination?
- Did government use infographics/visual aids to propagate reminders/ warnings/ precaution measures?
- What do you think, to what extent such reminders/ warnings/ precautions measures were effective in dealing with COVID-19 situation?
- Were these reminders/ warnings/ precaution measures behaviorally informed or not?
- Behaviorally informed insights that were used by government are either progressive, regressive, educative or architectural?
- Was there any aspect of fun, easy, attractive, social and timely in any of the government intervention for the purpose of testing and vaccination?
- Which type of behavioral insights have been utilized in order to steer people towards health preventive behaviors, testing and vaccination?
- How overall welfare effect can be increased using behavioral insights?
- How much do you think, behavioral insights help in influencing behavior?
- Did risk communication help in preventing transmission of COVID-19 by promoting reminders/ warnings/ precautions measures?
- Did online colorful certificates worked as an incentive in getting people to get vaccinated?
- Did the policy of smart lockdown help in fostering networks to enable collective action?

- Did the establishment of drive through vaccination centers help in producing a sense of optimism, unity and hope?
- Did the establishment of National Action Plan and toll-free health helpline help increase the prompt seeking of medical treatment?
- Do you think any other aspect of FEAST framework was used or could be used in the process of testing/vaccination to increase the efficacy of interventions?
- Do you think misinformation can be reduced by making public messages easy and simple?
- Do you think mental issues can be tackled by making the process of testing and vaccination a fun activity (adding amusement and building associations)?
- Do you think vaccine hesitancy can be reduced by making the process of vaccination attractive and fun?
- Do you think the problem of loneliness can be tackled by using power of networks and mutual commitments?

3.7.3 Thematic Charting

For the purpose of data analysis and to identify patterns and themes within the primary data that was collected from all of the interviews, five thematic charts based on five main themes were developed, each containing a number of sub-themes. In addition to this, codes were generated using both inductive and deductive methods. An example of thematic charting for one of the themes and sub-themes is illustrated in the Table 3.4. The purpose of using thematic charting was to provide a structured way to organize and make sense of the data in order to easily identify thematic and sub-thematic areas on which majority of data was collected. It benefitted the study by systematically answering questions and to draw conclusions based on the findings.

Table 3.4: An Excerpted Illustration of Thematic Chart on Nudged Practices

NUGGED PRACTICES	5.1 Social Distancing	5.2 Travel Restriction	5.3 Smart Lockdown	5.4 Mask Usage	5.5 Hand Washing /Sanitizer Usage	5.6 Risk Communication	5.7 Infographics	5.8 Vaccination
Serial No, Name, Gender, Age, etc. No. 01, Ali, Male, 26, Swat, Episodic Interview.	Since COVID first started, I strived to follow precautionary measures like meeting less and less people. (5)	Due to restrictions, people were bound to their homes. (4)	Due to lockdowns, people were bound in their homes. (4)	Since COVID first started, I strived to follow precautionary measures like wearing mask. (5)	Since COVID first started, I strived to follow precautionary measures like frequently washing hands. (5)	Government influenced people by continuously communicating the message of precautionary measures, testing and vaccination via dial tones. (5)		1. People started vaccination when govt established testing & vaccination through their centers. (5) 2. As the number of COVID positive cases increased & when the govt increased its efforts then people started vaccinating themselves in large numbers. (5)
No. 02 Ahmed, Male, 26, Wana, Episodic Interview.	Government instructed us to follow social distancing. (6)			1. Mask wasn't a proper solution to the issue. (5) 2. Majority of the masks were ordinary built and was causing diseases. (6)				
No. 03 Haroon, Male, 27, Islamabad, Episodic Interview.	Maybe I came in contact with someone already infected. (5)	You were not allowed to travel without vaccination certificate. (6)				1. The message on dial tune would indicate corona as very dangerous etc. (4) 2. First govt propagated precautionary measures via dial tune of calls and then through media. (5)	Government propagated precautionary measures through media. (5)	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. (6)

Chapter 4

Results

4.1 Introduction

The data collected from the UDCs were analyzed on four levels in the form of results. Firstly, the primary data collected from the respondents of various interviews were analyzed into five main themes and sub-themes. Secondly, the secondary data from the still and moving visuals were analyzed into five main themes. Thirdly, the data from the policy documents were analyzed into three main themes. Lastly, data from the observations were analyzed into three main themes.

4.2 Analysis of Primary Data

Primary data refers to the firsthand data 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.

4.2.1 Pandemic/COVID-19 Experience

The theme of pandemic/COVID-19 experience and its subsequent sub-themes were discussed with the 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 own infection and lastly the impact of COVID-19 infection on their life. The theme of pandemic/COVID-19 experience is then classified into the following sub-themes.

4.2.1.1 Pandemic Past Experience

Pandemic past 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 respondents (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 Quadratullah) of episodic interviews didn't experience any pandemic as past experience. Respondent No.02 Ahmed, Respondent No.03 Haroon and Respondent No.06 Quadratullah 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).

4.2.1.2 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 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 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 transmitting due to which the situation is worst. Later on, I searched about it on internet, I saw it on news. So, I first heard about it from the people of my village).

One of the respondent heard about COVID-19 pandemic through someone they knew in China, who forwarded the information about the unprecedented spread of COVID-19 infection. According to the interview verbatim of Respondent No.01 Ali, *“Jab say yeh start howa tha China may tab say tho yeh itna jo uh uh unn k cases nai barhay thay lakin jaisay he yeh spread honay lagay aur mukhtalif jagon pay lockdowns shuro ho gahay tho tab say mujay patha laga k matlab COVID hai, serious issue hai ajj kal.”* (I heard about it since it first started in China. At that time there weren't many cases but as it spread and when lockdowns started, I knew about COVID and it is a serious issue nowadays).

One of the respondents heard about COVID-19 pandemic through the Chinese employees working in Pakistan, whose actions indicated the severity of COVID-19 not only as a simple disease but as a pandemic. According to the interview verbatim of Respondent No.05 Alya, *“dusra yeh k mai uss time pay job kar rahi thi aik multi-national company may, ISE tower may tho jo humari company thi uss k bilkul saath jo hai aik Chinese company thi aur wahan k saray employees Chinese thay tho ziada hum nay jo hai wahan say humain patha chala tha. Twenty nineteen ki baat hai. Wahan say humain jo hai uh ziada idea howa tha k waqai may jo hai yeh real cheez hai tho uss waqt Pakistan may nai aya tha lakin woh Chinese log jo hain tab bhi mask waghaira pehna kartay thay uss time pay, halankay abi Pakistan may first case bhi abhi report nai howa tha tho it was a serious thing tho iss ka idea humain pehlay nai howa lakin woh jo Chinese company k log thay unn k through howa tha.”* (Secondly, in 2019 I was doing a job with a multi-national company at ISE tower. There was a Chinese company adjacent to our company and their employees used to wear masks when there wasn't a single case in

Pakistan. So, at first, we didn't have the idea about COVID, but we got it through Chinese employees that it is a real thing).

4.2.1.3 Severity/Deadliness of COVID-19

Severity/Deadliness of COVID-19 means the instant at which and the source from which respondents realized about the severity and fatal effects of COVID-19. This indicates that realizing the severity of COVID-19 compelled respondents to adopt the 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 intazam 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 bohot 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 about the severity and fatal effects of COVID-19 through the risk communication that was transmitted via the government assisted dial tunes 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 tune would indicate corona as very dangerous etc.).

Two of the respondents realized about the severity and fatal effects of COVID-19, when one of their family member or close relative had either deteriorating health or died due to COVID-19. In behavioral sciences there are some heuristics or rule of thumbs like availability bias, in

which more recent events or the available information have a greater impact on our behavior, and on our fears, than earlier ones. Thus, it compels us to act in a certain manner as we would not do otherwise. In this case, the deteriorating health or the death of family member or close relative affected the respondents to realize the severity of COVID-19. According to the interview verbatim of Respondent No.04 Emaan, *“Family life, family may meray saray, meray saray family ko COVID howa tha. Meray ami abu, even meray grandfather aur even last year jo meri grandmother ki death hoie.”* (In term of family life, my whole family was infected with COVID including my parents and grandparents. My grandmother died due to COVID last year). Similarly, according to the interview verbatim of Respondent No.06 Quadratullah, *“Start may tho mujay itna yaqeen nai ah raha tha, mai soch raha tha k yeh uh aik propaganda he hai lakin matlab mai yeh baat aksar repeat bhi karta tha lakin mai nay aik COVID k patient ko dekhka apnay relatives may tho mujay andaza howa k yeh waqai he bohot dangerous qism ki bimari hai.”* (In the start, I was not sure enough to believe it. I was thinking of it as a propaganda but when I first saw a COVID patient in my relatives then I got the idea that it really is a dangerous kind of disease).

One of the respondents realized about the severity and fatal effects of COVID-19, when he lost his sense of smell and taste which is one of the physical health symptom of COVID-19 infection. According to the interview verbatim of Respondent No.01 Ali, *“jab say woh um smell aur taste aur unn sab cheezon ka patha chala k matlab woh khatam ho gahi hai tho tab say mujay andaza laga k matlab yeh waqai aik serious issue hai.”* (When I lost the sense of smell and taste then I realized it to be a serious issue).

4.2.1.4 Physical Health Symptoms

Physical health symptoms mean, the physical health related symptoms experienced by the respondents when they were infected with COVID-19. This indicates that when respondents

explained their first personal experience of COVID-19, they were able to make comparisons with the symptoms information that was propagating everywhere else. Furthermore, knowing about their symptoms may also indicate whether the government identified such symptoms and its countermeasures.

Three of the respondents experienced fever and a rise in the body temperature when they were infected with COVID-19. This symptom was usually common in COVID-19 infected people, but it also varied from individual to individual and in a similar manner its effects too. According to the interview verbatim of Respondent No.01 Ali, “*Starting may tho mujay nai lag raha tha k matlab yeh itna woh hoga, severe hoga, normal temperature aur inn cheezon say banda waqif hotha hai.*” (In the start I wasn’t feeling like it would be severe. Normally, one is aware about normal temperature etc.). Similarly, according to the interview verbatim of Respondent No.02 Ahmed, “*Tho uss may yeh howa k bs thorha sa bukhaar tha, normal jo bukhaar hotha hai.*” (In that experience there was normal and mild fever.) Lastly, according to the interview verbatim of Respondent No.05 Alya, “*uss waqt jo corona howa tha uss may bukhar ziada tha.*” (At that time, I was experiencing high fever).

Three of the respondents experienced the loss of sense of smell and taste when they were infected with COVID-19. This symptom was usually common in COVID-19 infected people. It affected the food intake during the disease as eating food highly depends on the sense of smell and taste. According to the interview verbatim of Respondent No.01 Ali, “*Smell aur taste aur unn sab cheezon ka patha chala.*” (I knew about the loss of sense of smell and taste). Similarly, according to the interview verbatim of Respondent No.02 Ahmed, “*Naswar ka jo taste tha woh bhi feel nai ho raha tha matlab jis thara hum cigarette peetay hain ya naswar raktay hain na tho uss ka aik alag sensation hothi hai, woh sensation feel nai ho rahi thi.*” (There weren’t any sense of smell or taste. Even the usual sensation of snuff or cigarette wasn’t there). Lastly, according to the interview verbatim of Respondent No.03 Haroon, “*woh smell,*

taste yeh jo symptoms hai woh waqai yahi symptoms thay.” (The symptoms of loss of sense of smell and taste were really the symptoms).

Two of the respondents experienced pain in different parts of their body when they were infected with COVID-19. This symptom was usually common in COVID-19 infected people because symptom of fever is usually accompanied by the symptom of body pain. According to the interview verbatim of Respondent No.05 Alya, *“Uss may jism may dard bohot ziada rehti thi.”* (And in that I had extreme body pain). Similarly, according to the interview verbatim of Respondent No.06 Qudratullah, *“Aur body may, sari body may bohot he ziada pain hothi hai, bohot ziada pain hothi hai sari body may uh it feels that something is running in my bones.”* (and there was a lot of body pain like something is running in bones).

One of the respondents was facing difficulty breathing and tightness in chest when he was infected with COVID-19. Usually in COVID-19 infection the symptom of difficulty breathing, or shortness of breath is a serious one but not most common. According to the interview verbatim of Respondent No.06 Qudratullah, *“Aur insan ko asthma type ki feeling bhi athi hai k woh thorha sa jatha hai.”* (One feels asthma type of feelings whenever one walks a little).

One of the respondents felt lightheadedness and dizziness when he was infected with COVID-19. It is not a commonly recognized symptom of COVID-19, but it can occur due to an overall effect of other various connected symptoms of COVID-19. According to the interview verbatim of Respondent No.03 Haroon, *“first experience yeh tha k dizziness sa ho raha tha.”* (First experience was a feeling of dizziness).

One of the respondents experienced hair fall when he was infected with COVID-19. However, it is not a commonly recognized symptom of COVID-19. According to the interview verbatim of Respondent No.05 Alya, *“Meray puray family ko bhi howa tha tho uh number one hair fall aik aisi situation hai jo hum sab nay face ki.”* (Me and my whole family experienced hair fall).

4.2.1.5 Causes of COVID-19

Causes of COVID-19 means, the causes and reasons which the respondents think to have contributed to their own infection of COVID-19. This indicates that knowing about their causes and reasons may help us to understand which countermeasures they didn't follow due to one or another reason. Moreover, it enables us to identify which cause or reason the government should work on to nudge people toward reliable countermeasures of COVID-19 in order to increase the efficacy of COVID-19 intervention in Pakistan.

All of the six respondents were infected with COVID-19 because they didn't follow either one or some of the precautionary measures required to prevent the COVID-19 infection. These precautionary measures include social distancing, washing hands, masks and sanitizers use etc. According to the interview verbatim of Respondent No.01 Ali, "*Mujay tho jo social interaction hotha hai uss ki waja say mujay lag raha hai jo matlab woh protocols hothay hain woh hum nai raktay jin ki waja say COVID ho raha tha tho mujay tho lagta hai uss ki waja say howa hoga.*" (I think it happened because of social interactions and not following proper protocols). And according to the interview verbatim of Respondent No.02 Ahmed, "*shahid iss liye howa kyun k koie bhi mai nay iss ki jo precaution measures thay woh nai liye.*" (Maybe it happened because I didn't follow the precautionary measures). And according to the interview verbatim of Respondent No.03 Haroon, "*maybe kisi aur ko COVID howa tha tho uss ki waja say.*" (maybe I came in contact with someone already infected with COVID). And according to interview verbatim of Respondent No.04 Emaan, "*COVID mai hostel may thi tho wahan pay humaray ziada jo social distance tha woh nai tha, tho logon aur larkiyon k saath interaction hoie thi tho aik larki say muje may transfer howa tha tho like social distance nai tha humaray beech.*" (When I was in hostel, I interacted with other girls and COVID was transmitted to me via a girl as we weren't maintaining social distance). Similarly, according to the interview

verbatim of Respondent No.05 Alya, “*I was working, mai meri friend ko howa, uss din matlab hum dono ki aik saath tabiyat kharab hoie office may tho ab yahan tho hum, ussay muje say howay a muje uss say howa tho aik first tho mujay yeh probability lagti hai dusri mujay yeh bhi lagti hai k uss say aik din pehlay mai apni family k saath jo hai Murree gahi thi tho ab ya tho mujay Murree say howa hai.*” (I think the reason for my COVID infection was either due to interaction with my friend at workplace or due to the interaction during a vacation at Murree with my family. At my workplace, I and my friend started feeling ill and diagnosed with COVID at the same time so, I am not sure if she transmitted the virus to me or I did). Lastly, according to the interview verbatim of Respondent No.06 Qudratullah, “*Meray khyal say mai apnay aik relative patient k paas gaya tha jo uss ko COVID howa that ho unhon nay, unhon nay cough kiya jo mujay feel howa na tho cough ki waja say kyun k do din baad mujay bhi COVID start howa.*” (I think, I met one of our COVID positive relative and I felt it when he coughed because after two days, I was infected with COVID).

4.2.1.6 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 it 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 on each other. 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 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.

Four of the respondents mentioned that their family life was affected. Usually a family lives in a close proximity and as COVID-19 is a contagious disease, the chances of affecting the whole

family due to one infected member is more. Families were affected either in the form of further spread of infection or other consequential problems. However, experience of respondents varied in this case. According to the interview verbatim of Respondent No.01 Ali, “*Jin k businesses hothay hain woh saray affect hothay hain iss say tho unki waja say matlab already phir family may bhi ah jatha hai tho...*” (It affected businesses and in turn it affected the family life too). And according to the interview verbatim of Respondent No.02 Ahmed, “*Family life tho yeh hai k hum log matlab ziada time mile gaya tha aik doosray k saath guzaarnay may, guzaarnay k liye bohot time mile gaya tha kyun k mai har saal ya ap keh saktay hain k haat das mahinay baad gher jatha hon aik do din k liye tho COVID may pehli dafa kuch saalon baad mai haat mahinay gher may raha hon tho bohot cheezain patha chal jathi hain insan ko jo pehlay patha nai hothi.*” (In term of family life, we were able to spend much time with each other. I usually go home for few days after eight or ten months but due to COVID, I was able to continuously spend eight months at home and learnt a lot of things which I didn’t learn earlier). And according to the interview verbatim of Respondent No.04 Emaan, “*Family may meray saray, meray saray family ko COVID howa tha. Meray ami abu, even meray grandfather aur even last year jo meri grandmother ki death hoie. Tho jo jo barha impact tha woh tha COVID ki waja say meray grandmother ki death hoie thi last year.*” (In term of family life, my whole family was infected with COVID including my parents and grandparents. My grandmother died due to COVID last year and it was a major impact). Lastly, according to the interview verbatim of Respondent No.06 Qudratullah, “*Family ka yeh tha k family bhi qareeb nai ah sakti thi matlab har koie uh mai khud bhi unn ko kehta tha k ap log paas mat ahain aur woh khud bhi matlab avoid kartay thay qareeb anay say.*” (In term of family, they were unable to come around me and even I used to tell them not to come close).

Three of the respondents mentioned that their businesses and work life were affected. During COVID-19 pandemic, majority of businesses were shut down. Due to this, it also affected the

family life and mental health of respondents because of the financial issues. According to the interview verbatim of Respondent No.01 Ali, “*Jin k businesses hothay hain woh saray affect hothay hain iss say tho unki waja say matlab already phir family may bhi ah jatha hai tho...*” (It affected businesses and in turn it affected the family life too). And according to the interview verbatim of Respondent No.02 Ahmed, “*Work life iss thara thi k, work life tho bs kaam karna zarori ho gaya tha kyun k Waziristan may na woh mazdoor bhi mile rahay thay tho mai nay apnay kitchen gher may khud banaya hai.*” (In term of work life, it was necessary to work. I built kitchen at my home by myself because laborers weren’t available in Waziristan during COVID). Lastly, according to the interview verbatim of Respondent No.06 Qudratullah, “*Zahir si baat hai meray workout pay kafi farq parha tha, mai apnay jo mera meri duty thi, meray kaam thay, woh saray muje say reh gahay aur mai bed rest pay tha.*” (Obviously, it affected my work life and made a difference. My duty and chores were left, and I was on bed rest).

One of the respondent mentioned that his mental and psychological health was affected negatively. It was both the direct and indirect effect of COVID-19. According to the interview verbatim of Respondent No.01 Ali, “*Yeh jis thara aik barha pandemic guzar gaya tho har kisi ki life pay iss nay affect kiya hai aur jo matlab social interaction aur sab cheezain pehlay hothi thi, uss thara say ab woh cheezain nai rahi. Mentally bhi logon affect kiya hai aur bohot say wajihat iss k ho saktay hain.*” (As it is one of the inordinate pandemic. Therefore, it affected the life of a lot people by restricting them of social interaction etc. It even affected the people mentally).

Two of the respondents mentioned positive impact on their personal development due to COVID-19 pandemic. The positive impacts on personal development includes availability of more time for personal activity, realization of health and socialization importance. According to the interview verbatim of Respondent No.02 Ahmed, “*Sab say aham cheez tho yeh notice ki hai k health is wealth aur iss ki qeemat humain COVID k baad patha chali hai k agar sehat nai*

hai tho kuch bhi nai hai.” (The most important thing I have noticed is that health is wealth and we knew about its value after COVID that if there isn’t any health then there is nothing). And in response to another question, the same respondent in his interview verbatim stated, “*Haan bs zindagi bohot taizi say guzar rahi thi aur yeh jo saath mahinay uh stop ah gaya tha life may yeh yeh ap keh saktay hain k humain sochnay apnay baray may sochnay k liye time mile gaya tha tho yeh aik change aya k mai nay apnay baray may bohot kuch socha, life k baray may bohot kuch socha hanlakay iss say pehlay meray paas time nai tha khud k baray may bhi sochnay k liye k hum bohot busy thay. Tho mai nay kaafi books parhi, mai itni books pehlay kabi nai parhi life may jitni mai nay pandemic may parhi hain.*” (Before COVID, life was moving very fast, I didn’t have enough time to think about myself and we were really busy but COVID brought a stop of like seven months to this fast-moving life and thus it has provided us with time to think about ourselves, life and everything else. I have read a lot of books which I wasn’t able to read before COVID). Similarly, according to the interview verbatim of Respondent No.03 Haroon, “*Yar bohot bohot affect kiya matlab in terms of ap ko different life k different perspective ap ko samja deta hai k uh health jo hai life may bohot matter karta hai aur we are as a social animal, agar ap individually aik kamray may rehna chaho tho barha mushkil ho jatha hai.*” (It really affected in terms of teaching us different perspectives of different life. For example: Health matters a lot in life and us as social animals can’t live isolated in rooms).

4.2.2 Behaviorally Informed Interventions

The theme of behaviorally informed interventions and its subsequent sub-themes were discussed with the total eighteen respondents of 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.

4.2.2.1 Progressive Interventions

Progressive interventions mean that according to respondents the government interventions regarding COVID-19 had beneficial effects on 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 government while making policies and implementing interventions, incorporated all of the classes of societies to get benefit specifically the poor class in order to increase the overall efficacy of COVID-19 interventions in Pakistan.

Seven out of the total eighteen respondents from all types of the 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 dehk 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 tunes and all that stuff, wo uss say information hasil karta wo.”* (Progressive in the sense that layman got information about COVID via dial tunes 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 us ski 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).

4.2.2.2 Regressive Interventions

Regressive interventions mean that according to respondents the government interventions regarding COVID-19 had harmful effects on 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 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 the interviews acknowledged the regressive interventions of governmental policies.

Out of the total eight only one of the respondent 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 in order 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 for the poor class of society because there were restrictions on travelling by the government and it became difficult for common masses and poor classes to travel to their workplaces that are specifically out of 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 spot). 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.

4.2.2.3 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).

One of the respondents mentioned that government interventions regarding COVID-19 were educative based on the awareness transmitted via electronic and social media. This awareness was in the form of news, television programs and advertisements. According to the interview verbatim of Respondent No.07 Saima, *“Yeh saaray jo information thi yeh educational he thi matlab through TV aur social media he ah rahi thi.”* (All of the information that was coming via TV and social media was educational).

Two of the respondents mentioned that government interventions regarding COVID-19 were educative based on recommending people to follow precautionary measures like washing hands, 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 un kay 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 lih kay log bhi hain, uss may ap k religiously educated log bhi hain, different propaganda generate ho raha that ho not only ap nay parhay lih kay 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 Quran proposes treatment for diseases. Similarly, the Holy Prophet if Islam proposes Ruqiya, which is to recite the Quran by sitting next to patient. Hence, we first understood the multi-tiered society and that's how beat the COVID).

One of the respondents mentioned that government interventions regarding COVID-19 were educative because Ministry of National Health Services, Regulations and Coordination issued guidelines regarding every aspect and event like Christmas, Eid-ul-Adha, marriage ceremonies, mass gatherings, Independence Day celebrations, home isolation and social distancing guidelines etc. According to the interview verbatim of chief scientific officer of NIH and Respondent No.18 Dr. Waseem Malik, "*Government nay har step k upar, har wave k ander, har hawalay say har sector k liye ehlada ehlada he atha k guideline di bhi sahi aur unko phir moniter bhi kiya.*" (Government has provided separate guidelines at every step, wave and for every sector and then they have monitored it).

4.2.2.4 Architectural Interventions

Architectural interventions mean that according to respondents the government interventions regarding COVID-19 was 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 dramas suggestions, provision of choices and internet packages. Such interventions have no direct impact on the efficacy of COVID-19 interventions in Pakistan, but it acts as supplemental measure.

One of the respondents mentioned that government interventions regarding COVID-19 were architectural because 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 in order 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 dehknay 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 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 and 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 thing 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's 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 pandemic which is also not related to governmental policies and Islamic countries like Pakistan.

4.2.2.5 Behaviorally Informed Precautionary Measures

Behaviorally informed precautionary measures mean that respondents think that precautionary measures propagated by government were aimed at influencing behavior of people by using behavioral insights in order 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 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 SOPs propagated by government were behaviorally informed. These SOPs are guidelines regarding every aspect and event 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 measure. If we talk from the start of pandemic, 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 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 advertisements propagated by 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 Causes of pandemic, importance of mask, 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 really effective specifically for the people who weren’t accepting the seriousness of COVID). This shows that precautionary measures related advertisements were propagated by government and these were behaviorally informed to an extent as one of the respondent 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 kahnay 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).

4.2.2.6 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 tones, NIH, infographics and online certificates. Besides government, private entities and celebrities also assisted behaviorally informed testing and vaccination.

However, two of the respondents mentioned that testing and vaccination promoted by government were not aimed at influencing behavior of people in order 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 rujahaan nai gaya.”* (According to me, not really. There is a large faction in our society which is declining the existence of corona. Hence, those who aren't ready to accept the existence of corona, 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 vaccination or not. So, I felt absence of one thing i.e., 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 government via dial tunes were aimed at influencing 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, 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 government via the incentive of online vaccination certificates were aimed at influencing 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 and 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, enter government offices and examination halls). However, in a country like Pakistan with low literacy rate, 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 behavior of people to nudge them toward testing and vaccination. These private entities are usually fast food and clothing brands. These brands offered incentive i.e. sale on their products and items for vaccinated customers in order 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 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, movies stars like Shahrukh Khan and here in Pakistan, TV actresses and cricketers. They acted like brand

ambassadors for COVID vaccination by advocating vaccination nation-wide which attracted all their admirers to get vaccinated).

4.2.2.7 Inclusion of Behavioral Experts in COVID-19 Policy Making

Inclusion of behavioral experts in COVID-19 policy making means whether behavioral experts were included or taken into consideration when government was formulating COVID-19 related policies or involved in the process of policy making. Inclusion of behavioral experts in policy making is substantial in nudging people towards precautionary measures, testing and vaccinations in order to increase the efficacy of COVID-19 interventions. In case of Pakistan, medical doctors and social scientists were included in the meetings of National Command and Operation Center (NCOC), the principal body governing the policies and implementation of the national COVID-19 efforts in Pakistan. Additionally, medical doctors acted as behavioral experts in Pakistan.

One of the respondents mentioned that medical doctors were taken into consideration while government was formulating COVID-19 related policies and that doctors were in regular contact with NCOC. According to the interview verbatim of consultant cardiac surgeon of CDA hospital and Respondent No.16 Dr. Mahnoor Anwar, *“Kyun k national crisis control jo organization thi woh NCOC k hawalay kar diya tha iss pandemic ko tho baqaida unn k saath humara raabta rehta tha.”* (COVID was a national crisis and its responsibility was given to NCOC, so we were in regular contact with them). Similarly, at another instant she iterated, *“NCOC idaray nay apna sab say ziada commanding aur leading role as prescribed woh follow kiya aur unnki sab say barhi success ki waja yeh thi k jo doctors frontline behavioral pattern ko jis thara say change kar saktay thay unhon nay iss cheez ko barha jaldi realize kar liya.”* (NCOC played its leading role when they realized that doctors can change behavioral pattern of people).

One of the respondents mentioned that social scientists were taken into consideration while government was formulating COVID-19 related policies. According to the interview verbatim of chief scientific officer of NIH and Respondent No.18 Dr. Waseem Malik, “*Social scientists k log thay, baqaida jo hai wo, koie bhi SOP jab banti thi tho uss ki NCOC ki main meeting k ander discussion hothi thi, phir unn k apnay groups discuss kartay thay, experts beh’tay thay phir woh SOP banaya kartay thay.*” (Social scientists were there. Whenever SOPs were formulated in NCOC meeting, there were discussions among groups and experts regarding any formulation of SOP). This shows that social scientists were present in NCOC meetings, but it is not sure which type of social scientists were there.

One of the respondents mentioned that medical doctors were also given the responsibility to act as behavioral experts in order to provide NCOC with the required behavioral input to increase the efficacy of COVID-19 interventions in Pakistan. According to the interview verbatim of consultant cardiac surgeon of CDA hospital and Respondent No.16 Dr. Mahnoor Anwar, “*Front foot pay doctors rahay aur doctors nay he behavioral experts ka kirdaar ada kiya kyun k psychology aur behavior aur communication yeh humari training ka hisa hai.*” (Doctors were on the front foot and acted as behavioral experts because our training involves learning about psychology, behavior and communication). This shows that already included doctors in NCOC were also given the responsibility of acting as behavioral experts because of their training in psychology. However, she stated that NCOC must include independent behavioral experts in their policy making process. According to her interview verbatim, “*I think agar kisi jagah pay behavioral experts bhitana hai tho woh humain NCOC may bhitana chaiyeh ta k woh pandemics ki aur barhay barhay crisis ki uh behavioral planning may policy makers ki madadgaar sabit ho sakay.*” (I think, behavioral experts should be considered and allowed to sit in NCOC so that they can help policy makers in behavioral planning during crisis like pandemic).

4.2.3 FEAST Framework

The theme of FEAST framework and its subsequent sub-themes were discussed with the total eighteen respondents of 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 FEAST framework is then classified into the following sub-themes.

4.2.3.1 Fun Insight

Fun insight is one of the five insights of FEAST framework developed by behavioral public policy expert Cass Robert Sunstein. Fun is a behavioral insight that symbolizes smile, ease, joy, play and amusement that can be incorporated into certain policies to make the process of adhering to policies effortless and delightful for the public. Therefore, applying such insight to COVID-19 related policies in Pakistan can make the process of following precautionary measures, testing and vaccination effortless and delightful due to which the efficacy of COVID-19 interventions in Pakistan can be increased. In Pakistan, fun insight was not intentionally included in COVID-19 policy but indirectly it was evident in the form of TV dramas, celebrities in advertisements and saving deals at restaurants, which is not related to making the process of testing and vaccination fun, easy and delightful. However, it did make the process of making people follow precautionary measures a fun, easy and delightful task.

One of the respondents mentioned that she is not sure if fun insight was incorporated into policies to make the process of testing and vaccination fun. According to the interview verbatim of Respondent No.05 Alya, “*Vaccination k liye jo sab say achi cheez thi k unhon nay yeh kiya k, ab iss may fun factor waghaira tho mai nai keh sakti lakin jo attract howay log vaccination k hawalay say uss may sab say pehla tho yeh tha k that was free of cost.*” (With regard to

vaccination, I am not sure if fun factor was incorporated in policies to attract people towards vaccination but one thing that I noticed was that vaccination is free of cost).

One of the respondents mentioned that fun insight was incorporated into policies in the form of suggesting TV dramas. According to the interview verbatim of Respondent No.07 Saima, “*Ertughul, Ertughul dehnay 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 indeed suggesting TV dramas is a fun thing in order to restrict people to their homes to maintain social distancing, but it was not aimed at making the process of testing and vaccination a fun activity.

One of the respondents mentioned that fun insight was incorporated into policies in the form of testing and vaccination promotions done by celebrities in advertisements presented on TV and social media. According to the interview verbatim of Respondent No.12 Maqsoom, “*Yeh iss thara k hai k jab ads mai 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 ads. For example: In Bollywood, movies stars like Shahrukh Khan and here in Pakistan, TV actresses and cricketers. They acted like brand ambassadors for COVID

vaccination by advocating vaccination nation-wide which attracted all their admirers to get vaccinated).

One of the respondent mentioned that fun insight was incorporated into policies in the form of saving deals offered at various restaurants. However, such deals were majorly offered in foreign countries. 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 it ho 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).

4.2.3.2 Easy Insight

Easy insight is one of the five insights of FEAST framework developed by behavioral public policy expert Cass Robert Sunstein. Easy is a behavioral insight that symbolizes power of defaults, reducing sludge and simplifying messages that can be incorporated into certain policies to make the process of adhering to policies easy and simple for the public. Therefore, applying such insight to COVID-19 related policies in Pakistan can make the process of following precautionary measures, testing and vaccination easy and simple due to which the efficacy of COVID-19 interventions in Pakistan can be increased. In Pakistan, easy insight was incorporated via infographics, government mobile based application, online vaccines certificates and tackling misinformation.

Three of the respondents mentioned that easy insight was incorporated into policies in the form of visual infographics propagated by government via media and posters posted in various institutions. According to the interview verbatim of Respondent No.12 Maqsoom, *“Jo ap ka*

question yeh tha k infographics ka tho uss ka matlab kafi faida howa hai logon ko kyun k kafi logon may na shaour paida howa hai uss baat...” (To answer your question about infographics, I would say that it really helped in benefiting people by making them aware about COVID). And, according to the interview verbatim of Respondent No.14 Shafiq, *“It’s like bohot si cheezain thi matlab uss may asar parha bhi tha.”* (Infographics have affected a lot of things). Similarly, according to the interview verbatim 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).

One of the respondents mentioned that easy insight was incorporated into policies in the form of mobile based application launched by the Government of Pakistan. According to the Respondent No.12 Maqsoom, *“Government nay uh aik application launch ki thi jis may humain patha chal sakta k iss areay may na itnay patients hain.”* (Government launched an application which would identify the total number COVID positive persons in one specific area). Moreover, this mobile based application also provided information about the nearby located vaccination and health care centers. This shows that mobile based application launched by Government of Pakistan made the process of accessing information easy. Thus, helping people to easily move toward testing and vaccination.

One of the respondents mentioned that easy insight was incorporated into policies in the form of online provision of vaccination certificates. While another respondent mentioned that such incorporation of easy insight didn’t help. According to the 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). Contrary to the view of above respondent, another one Respondent No.14 Shafiq stated that “*certificates ka tho logon ko koie faida nai tha.*” (I don’t think so certificates have helped anyone in anything). This shows that online provision of vaccination certificates was an easy process but according to one of the respondent, these certificates didn’t help people with anything. However, such certificates were mandatory for accessing certain institutions and availing various services.

One of the respondents mentioned that easy insight was incorporated into policies in order to make the government’s message short and easy so that misinformation can be tackled. According to the interview verbatim of chief scientific officer of NIH and Respondent No.18 Dr. Waseem Malik, “*Bilkul, ap ka jitna message short hoga, easy hoga, easily convey hoga tho uss say misinformation. Hamesha misinformation hothi hai k complicated message ho, logon ko sahi samaj na ah raha ho phir logo uss may say thanz ka pehlu nikal laitay hain k misinformation. Short hoga, direct hoga tho woh jo hai na woh woh hoga.*” (Absolutely. Misinformation is caused by complicated message, which the people can’t understand, and they view it with sarcastic lens. Hence, short, easy and direct message are easy to convey and reduce misinformation).

4.2.3.3 Attractive Insight

Attractive insight is one of the five insights of FEAST framework developed by behavioral public policy expert Cass Robert Sunstein. Attractive is a behavioral insight that symbolizes attracting attention, designing rewards and sanctions that can be incorporated into certain policies to make the process of adhering to policies attractive for the public. Therefore, applying such insight to COVID-19 related policies in Pakistan can make the process of following precautionary measures, testing and vaccination attractive due to which the efficacy

of COVID-19 interventions in Pakistan can be increased. In Pakistan, attractive insight was incorporated in the form of celebrities in advertisements, religious practices and tackling misinformation.

One of the respondents mentioned that attractive insight was incorporated into policies in the form of promotion done by celebrities in advertisement presented on TV and social media. According to the interview verbatim of Respondent No.12 Maqsoom, “*Yeh iss thara k hai k jab ads mai 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 ads. For example: In Bollywood, movies stars like Shahrukh Khan and here in Pakistan, TV actresses and cricketers. They acted like brand ambassadors for COVID vaccination by advocating vaccination nation-wide which attracted all their admirers to get vaccinated).

One of the respondents mentioned that attractive insight was incorporated into policies in the form of religious teachings or practices used to convince people for the COVID-19 treatment i.e. testing and vaccination. Moreover, it also helped in tackling misinformation regarding testing and vaccination. According to the interview verbatim of consultant cardiac surgeon of CDA hospital and Respondent No.16 Dr. Mahnoor Anwar, “*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.” (Now to tackle the propaganda related to COVID that vaccination is not detrimental, nor it is a conspiracy theory, it was important to take the help of Surah Rehman and Ruqiya to guide the religious sect of society by convincing them that Quran proposes treatment for diseases. Similarly, the Holy Prophet of Islam proposes Ruqiya, which is to recite the Quran by sitting next to patient).

4.2.3.4 Social Insight

Social insight is one of the five insights of FEAST framework developed by behavioral public policy expert Cass Robert Sunstein. Social is a behavioral insight that symbolizes power of networks, commitment to others and desired behavior that can be incorporated into certain policies to make the process of adhering to policies a collective commitment and effort for the public. Therefore, applying such insight to COVID-19 related policies in Pakistan can make the process of following precautionary measures, testing and vaccination a collective or social commitment due to which the efficacy of COVID-19 interventions in Pakistan can be increased. In Pakistan, social insight was incorporated in the form of collective effort in propagation of social awareness and at mosques.

One of the respondents mentioned that social insight should be incorporated into policies in the form of awareness propagation drive from diverse range of people. According to the interview verbatim of Respondent No.12 Maqsoom, “*Agar hum aisay kartay k hum different different communities say different prominent logon ko karwatay tho ziada acceptable hothi. Agar hum diversify kartay awareness ko tho shahid ziada behtar hotha.*” (If we were to choose some prominent people from every community to propagate awareness, then it would have been more acceptable. It would have been better if we would have diversified it).

Two of the respondents mentioned that social insight was incorporated into policies in the form social efforts for awareness at mosques, guiding people via religious teachings and striving for

social harmony through religious means. According to the interview verbatim of consultant cardiac surgeon of CDA hospital and Respondent No.16 Dr. Mahnoor Anwar, “*Ale-tashee k jo imam baargah manage karnay walay thay unhon nay apnay jo sanitizers praise lay k across the board barelvi masjid hai uh um hanfi masjid hai, imam baargah hai, har aik may ja k unhon nay spray kiye tho iss qoum ka jo jo uh gel together honay ka jazba nikal k aya na unhon nay faith k barriers, unhon nay sects k barriers cross kar k yeh saabit kiya k in the time of crisis we acted as one, under one leadership. Moreover, we conducted meetings with the scholars of different sects like Shia, Ale-tashee, Barelvi and Hanfi. We cleansed their praying places with anti-infection sprays and provided them with sanitizers. The passion to gel together as a nation crossed the barriers of faith and sects and it proved that in the time of crisis we acted as one under one leadership. Throughout ap nay apnay message ko Christian, Hindu, Muslim unn say above ho k deliver kiya gaya.*” (Moreover, we conducted meetings with the scholars of different sects like Shia, Ale-tashee, Barelvi and Hanfi. We cleansed their praying places with anti-infection sprays and provided them with sanitizers. The passion to gel together as a nation crossed the barriers of faith and sects and it proved that in the time of crisis we acted as one under one leadership. Throughout we delivered our message regardless of Christians, Hindus and Muslims). Similarly, according to the interview verbatim of chief scientific officer of NIH and Respondent No.18 Dr. Waseem Malik, “*Alhamdullilah humaray saath overall mul molvi hazrat nay bohot cooperate kiya, chahay SOPs thi ya vaccination thi ya kuch bhi tha unhon nay bohot cooperate kiya.*” (With the praise of Allah Almighty, religious clergy of Pakistan cooperated very well by following SOPs and getting vaccination).

4.2.3.5 Timely Insight

Timely insight is one of the five insights of FEAST framework developed by behavioral public policy expert Cass Robert Sunstein. Timely is a behavioral insight that symbolizes planning

response to people, prompting people when receptive and considering immediate costs and benefits. Therefore, applying such insight to COVID-19 related policies in Pakistan can make the process of following precautionary measures, testing and vaccination timely and responsive due to which the efficacy of COVID-19 interventions in Pakistan can be increased. In Pakistan, timely insight was incorporated in the form of timely response of NCOC and establishment of toll-free helpline.

One of the respondent mentioned that timely insight was not incorporated into policies and government response about the vaccination drive was partially delayed. Such possibility exists only if there weren't any enough supply of vaccines. According to the interview verbatim of Respondent No.14 Shafiq, "*Partially delayed tha. Government start may confuse thi k kis thara lay k chalna hai k lagana hai ya nai lagana.*" (It was partially delayed because at first government itself was confused about administering vaccine or not). This shows that government was confused about the administration of vaccination. However, such confusion was mostly based upon the shortage and unavailability of vaccines, not on the argument of either vaccine should be administered or not.

Four of the respondents mentioned that timely insight was incorporated into policies because NCOC, the principal body governing the policies and implementation of the national COVID-19 efforts in Pakistan was receptive and responded on time while considering the immediate costs and benefits of testing and vaccination. According to the interview verbatim of Respondent No.01 Ali, "*Government nay tho apni taraf say woh tho koshish ki thi k matlab zada say log jaldi time may laga dy.*" (Government initially made efforts to vaccinate more people in less amount of time). And according to the interview verbatim of Respondent No.12 Maqsoom, "*Kyun k sab say ziada barhi example yeh hai k uss waqt humara PSL 5 ho raha tha ya COVID k taqreeban cases start ho rahay thay tho unhon nay wo bilkul cancel kar diya iss waja say k wo timely action unhon nay laina tha.*" (In the start of COVID, PSL 5 was going on

and Government of Pakistan immediately canceled the tournament because they had to take timely action). And according to the interview verbatim of Respondent No.13 Abdul Ghaffar, “*Yeh timely tha uh lakin depend karta hai uh k ap ka na uh matlab log kis thara k hain, ghareeb hain, ameer hain, unka bhi logon, government ko khyal uh rakna tha k wo log agar kaam industry band kar detay hain ya construction band kar detay hain tho wo log kahan say kah'ain gy. Uh iss sari cheezon ko madhe-nazar raktay howay timely tha.*” (It was timely. Government had to take care of all the people including both poor and rich ones. They had to take into consideration the poor people working in industries and construction. So, in this sense it was timely). And according to the interview verbatim of consultant cardiac surgeon of CDA hospital and Respondent No.16 Dr. Mahnoor Anwar, “*Yes, extremely timely tha NCOC ka response.*” (Yes, the response of NCOC was extremely timely).

One of the respondent mentioned that timely insight was incorporated into policies by establishing toll-free helpline for the public to contact regarding COVID-19 testing, vaccine registration and other related issues and complications. According to the interview verbatim of chief scientific officer of NIH and Respondent No.18 Dr. Waseem Malik, “*Toll free helpline mujay abi bhi yaad hai, humaray paas case nai aya tha aur hum sab say pehlay yeh discuss kartay thay k yeh helpline honi chaiyeh tho helpline case anay say bohot pehlay bana di gahi thi tho abhi jo hai woh phir uss k baad uss nay cases may, ab tho uss helpline ko health k aur aspects k liye bhi use karnay ka socha ja raha hai, ki bhi hai hoie bhi hai, mazeed bhi socha ja raha hai tho yeh iss nay barha 1166 nay amazing role play kiya hai.*” (I still remember the toll-free helpline. When not, a single case was reported to us, we were discussing about the establishment of helpline and it was launched well before any case was reported. Now, it is under consideration to use this helpline for other health aspects and it has been in usage with a focus on its future. Hence, 1166 has played an amazing role).

4.2.4 Nudged Practices

Nudged practices are practices that were steered in such a way as to change the behavior of people in order to make them follow precautionary measures and to go for testing and vaccination. The theme of nudged practices and its subsequent sub-themes were discussed with the total eighteen respondents of 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 nudged practices is then classified into the following sub-themes.

4.2.4.1 Social Distancing

Social distancing is a precautionary measure and a practice that was aimed at nudging or steering people to maintain distance from each other when in social gathering in order to prevent the spread of COVID-19 virus. Such precautionary measure was maintained within institutions, offices, schools, mosques, in ceremonies, events and religious gatherings etc. In Pakistan, social distancing was majorly maintained in the regular gatherings of prayers at mosques.

Three of the respondents mentioned that they have maintained social distancing during the COVID-19 period. They either started maintaining this precautionary measure due to their COVID-19 experience or such precautionary measure was followed because it was propagated by the government. According to the interview verbatim of Respondent No.01 Ali, “*Jab say start say ayi thi tho tab say he koshish rahi k matlab iss ki jitni precautionary measures hain woh follow karain, ziada logon say na milna.*” (Since COVID first started, I strived to follow precautionary measures like meeting less and less people). Similarly, another one indicated the importance of government’s propagation of precautionary measure like social distancing. According to the interview verbatim of Respondent No.02 Ahmed, “*Jaisay unhon nay bataya*

hai k COVID ap social distance rakay.” (Government instructed us to follow social distancing). And according to the interview verbatim of Respondent No.07 Saima, *“Uh jitnay cases barhtay thay uski waja say matlab uh thorha dar bhi paida ho raha tha aur haha matlab uss lihaz say sab precaution bhi lay rahay thay, bahir ana jana bhi chorh rahay thay aur sab...”* (As the COVID cases used to increase, fear also increased due to which people were taking precautionary measures and prohibiting themselves from going outside home etc.).

However, four of the respondents mentioned that they have not maintained social distancing during the COVID-19 period. They did not maintain it either due to laziness or because they were not nudged enough to adopt or follow such measures. According to the interview verbatim of Respondent No.03 Haroon, *“Maybe kisi aur ko COVID howa tha tho uss ki waja say mujay.”* (Maybe I came in contact with someone already infected with COVID). And according to the interview verbatim of Respondent No.04 Emaan, *“Uh COVID mai hostel may thi tho wahan pay humaray ziada jo social distance tha woh nai tha, tho logon aur larkiyon k saath interaction hoie thi tho aik larki say muje may transfer howa tha tho like social distance nai tha humaray beech.”* (When I was in hostel, I interacted with other girls and COVID was transmitted to me via a girl as we weren’t maintaining social distance). And according to the interview verbatim of Respondent No.05 Alya, *“As far as government ka question is concerned tho uh social distancing aur unn cheezon may kahin pay government ki policies teek thi lakin kahin pay zahir hai k woh kuch awam bhi humari aisi hai k woh humari social distancing khaas thor par uss thara follow nai hoie at times.”* (I think their policies like social distancing and some others were alright but obviously our masses didn’t follow social distancing strictly). And according to the interview verbatim of Respondent No.06 Qudratullah, *“Meray khyal say mai apnay aik relative patient k paas gaya tha jo uss ko COVID howa that ho unhon nay, unhon nay cough kiya jo mujay feel howa na tho cough ki waja say kyun k do din baad mujay bhi*

COVID start howa.” (I think, I met one of our COVID positive relative and I felt it when he coughed because after two days, I was infected with COVID).

One of the respondents recognized the importance of social distancing efforts at mosques. Mosque is a place where people gather in large number five times a day and it is important to maintain social distancing in such a place during pandemic situation. According to the interview verbatim of Respondent No.13 Abdul Ghaffar, “*Sab say prominent jo social effort thi, wo thi mosque, masjidon k andar. Jab government nay kaha tha aik ap nay aik tho kam karni hai ander aur ap nay karhay hona hai faslay pay. Tho inn logon nay kafi iss ko follow kiya tha aur taqreeban har masjid k ander he log faslay pay karhay hothay thay. Tho aik social effort thi jis nay bohot iss thara kiya tha.*” (One of the most prominent effort was in mosques. Govt advised us to reduce the spread of COVID & to stand by this decision. Therefore, people started following SOPs by observing social distancing within mosques & it was one of the important social effort).

4.2.4.2 Travel Restriction

Travel restriction is a preventive measure and practice to nudge and restrict people from frequent movement, travel and to bound them to their homes in order to stop the transmission of diseases. Such measures are important for communicable disease like COVID-19. In Pakistan, travel restriction was in the form of restriction to homes and travelling based on vaccine certificates.

One of the respondents mentioned that due to travel restrictions, people were bound to their homes and were not preferably allowed outside. Such restriction has both positive and negative effects. Positive effects are related to less transmission of COVID-19, while negative effects are related to isolation at home and psychological problems. According to the interview

verbatim of Respondent No.01 Ali, “*Yeh sab kuch laga tha tho har koie apnay matlab gher aur inn cheezon tak mehdood ho gaya tha.*” (Due to restrictions, people were bound to their homes).

Two of the respondents mentioned that government allowed people to travel freely on the condition of producing authentic vaccination certificate whenever required by authorities. Moreover, these certificates also acted as an incentive for people to get vaccination. 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.*” (When travelling, you have to show vaccination certificate at every place. Otherwise, you were not allowed to travel). Similarly, according to the interview verbatim of chief scientific officer of NIH and Respondent No.18 Dr. Waseem Malik, “*Passenger movement k upar tho baqaida government hamlay nay bhi saro nay, tho sara kuch kiya vaccination cards check howay and PCR check howay.*” (Within passenger movement, government teams have checked vaccination cards and PCR results of passengers).

4.2.4.3 Smart Lockdown

Smart lockdown is a lockdown policy initiated by government of Pakistan in which in which areas with elevated disease incidence were identified as “Hotspots”. The major purpose of these hotspots and smart lockdown was to break the cycle of disease transmission without locking down the whole city. Smart lockdown can be considered as a progressive nudge because of its beneficial effects on poor class of society and letting them to earn their wages outside the COVID positive hotspots. In Pakistan, smart lockdown was related to smart lockdown as a policy and the issue of division of provinces based on lockdown policies.

Two of the respondents mentioned that smart lockdown as a government policy was appreciable and effective in controlling COVID-19 cases and its repercussions. According to the interview verbatim of Respondent No.04 Emaan, “*Jo smart lockdown tha pandemic k time*

pay tho yeh aik policy tha.” (In the time of pandemic, smart lockdown was a policy). Similarly, according to the interview verbatim of chief scientific officer of NIH and Respondent No.18 Dr. Waseem Malik, “DHA k andar case barhna shuro howay. Hum nay unn ko kaha k ap ka, yeh lockdown kar dain. Unhon nay khud apni tamam teams health k saath mile k work kiya aur uss ko jo hai na woh hum nay kar diya, ah ah apna reduce kar diya. Smart Lockdown jis area may, uss say jo hai woh decrease howa, logon ko patha chala, woh uss gali ki taraf unn areas ki taraf nai athay thay. Tho iss nay barha acha woh kiya.” (When COVID cases increased in DHA, we told them to launch smart lockdown and they added their own teams to work along with our health care workers teams. Hence the policy of smart lockdown in specific areas has decreased the number of cases. Thus, people started avoiding streets with increased number of COVID cases).

One of the respondents mentioned that due to disagreement of provinces and federal government regarding the lockdown policies during COVID-19 pandemic, led to no consensus among federal and provincial government and thus decreasing the efficacy of COVID-19 interventions in Pakistan. According to the interview verbatim of Respondent No.12 Maqsoom, “*Iss aspect may matlab humari government mai specifically Pakistan ki baat karon tho smart lockdown ki taraf hum gahay thay lakin iss may bhi hum humari qoum divide kaisay hoie thi k mai nay matlab kaafi iss cheez ko closely dehka tha k mai k Karachi sin Sindh government thi, wo iss baat k haq may nai thi k smart lockdown lagahay jahain. Wo kehtay thay k full lockdown lagahay jahain. Lakin even jo Punjab may thay kyunk PTI ki government thi tho wo log iss may thay k hum nay smart lockdown lagana hai full lockdown nai lagahay na tho aik qisam ka discrimination ho gaya tha, Sindh walay kehtay thay k Punjab may full lockdown hai aur yeh cheezain hain, humaray pay sakhti ki ja rahi hai, yeh dusray keh rahay thay k nai humaray pay ziada sakhti ki ja rahi hai.” (In this aspect, Government of Pakistan launched smart lockdown, but it has divided the nation. PTI government in federal territories and Punjab launched smart*

lockdown but Sindh government launched full lockdown. People of Sindh were claiming that they are under strict restrictions while people of Punjab were claiming the same).

4.2.4.4 Mask Usage

Mask usage is a precautionary measure and a practice that was aimed at nudging or steering people to use mask by covering nose and mouth in order to stop the transmission of COVID-19 virus. During COVID-19 pandemic, mask usage as a precautionary measure became mandatory within every area of life.

Four of the respondents mentioned that they have followed and propagated the precautionary measure of using mask during COVID-19 pandemic. According to the interview verbatim of Respondent No.01 Ali, “*Jab say start say ayi thi tho tab say he koshish rahi k matlab iss ki jitni precautionary measures hain woh follow karain. Mask lagana.*” (Since COVID first started, I strived to follow precautionary measures like wearing mask). And according to the interview verbatim of Respondent No.04 Emaan, “*Uh mai mask lagati thi.*” (I used to wear mask). And according to the interview verbatim of Respondent No.05 Alya, “*Precautionary measures tho wahin normal thay, mask aur uh.*” (The usual precautionary measures were followed like mask usage). And according to the interview verbatim of chief scientific officer of NIH and Respondent No.18 Dr. Waseem Malik, “*Jab wave barh rahi hothi thi tho hum logon ko jab batatay thay k yeh barh raha hai, khatra ziada ho gaya, mask pehnain, woh mask bhi pehntay thay.*” (When any COVID wave used to increase, we would tell everyone about its danger and recommended them to use face masks and they used it).

One of the respondents mentioned that he has not followed the precautionary measure of using mask due to one or another reason and as a result these respondents were infected with COVID-19. According to the interview verbatim of Respondent No.06 Quadratullah, “*Precautionary measures tho start say he matlab tamam jo cheezain thi woh mai nay uh uss thara continue ki*

thi, sanitizers, masks waghaira, even family may bhi lakin gaon may ja k phir insan say thorhi susti ho jathi hai jo mai nay bataya k patient tha aur woh bhi COVID ka tha tho mai unn say milnay gaya tho matlab wahan pay mai nay mask nai pehna kyun k mujay lagta tha k yeh matlab iss ko feel hoga k mai bimaar howa hon tho iss nay muje say mask lagaya hai tho mai nay mask ko thorhi dair k liye utaara tho unhon nay cough kiya tho woh jo cough ki jo woh thi woh mujay feel hoie na tho mujay laga k yar yeh tho teek nai ho raha. Tho uss k do din k baad he mujay COVID start ho gaya.” (I was continuously following precautionary measures like using sanitizers, wearing masks etc. from the start but I became lazy when I went to my village. As I have already told you that there was a COVID positive patient in my village and when I met him, I removed my mask for a minute so that he may not feel that I am wearing mask because of him. After a while when he coughed, I felt that it’s not right because after two days, I was infected with COVID). This shows that respondent due to societal compulsion ignored mask usage for a certain period of time and thus was affected with COVID-19.

Two of the respondents mentioned that majority of masks used during COVID-19 pandemic were of weak quality and people were suspicious about its quality and effects. According to the interview verbatim of Respondent No.02 Ahmed, *“Agar ap mask bhi kahin say letay thay tho who bhi iss thara koie uh khaas, na tho koie khaas, disposable masks thay tho unn say bhi kaafi saans ki bimaari paida hoie hai..”* (If you had to buy a mask, it was not that special, and majority of the masks were disposably ordinary built and was causing breathing related diseases). And according to the interview verbatim of Respondent No.14 Shafiq, *“Mask ka use ziada ho gaya tha usski waja say. Lakin uss may bhi bohot say factors inhon nay circulate kiye thay k kuch kehtay thay k even kuch doctors bhi keh rahay thay k yeh mask jo hai yeh bhi itself bhi COVID pehla sakta hai matlab iss k ander bhi germs hain yeh bhi iss waja say pehlta hai.”* (Mask usage was increased but there were a lot of suspicions related to it. For example: some doctors were of the view that sometimes mask itself contain germs and it can cause COVID).

Three of the respondents mentioned that advertisements related to mask usage was propagated on media platforms and it was beneficial in steering people to use masks. According to the interview verbatim of Respondent No.07 Saima, “*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.*” (Masks were made attractive by the industries). And according to the interview verbatim of Respondent No.09 Maria, “*Yeh jo mask k uh har ad mai diya jatha tha uh TV pay ad diya jatha tha, YouTube pay bhi.*” (Both on TV and YouTube ads were presented related to importance of mask). Similarly, according to the interview verbatim of chief scientific officer of NIH and Respondent No.18 Dr. Waseem Malik, “*Logon ko jo hai behaviorally encourage kiya gaya k ap yeh mask use karain.*” (People were behaviorally encouraged to use mask).

4.2.4.5 Hand Washing/Sanitizer Usage

Hand washing and sanitizer usage is a precautionary measure and a practice that was aimed at nudging or steering people to frequently wash their hands and use sanitizers in order to protect oneself and others from the transmission of COVID-19 virus. Such precautionary measure was in the form of washing hands, keeping sanitizers, propagation of sanitizers related advertisements and government’s placement of sanitizers.

One of the respondents mentioned that he has followed the precautionary measure of washing hands. According to the interview verbatim of Respondent No.01 Ali, “*Jab say start say ayi thi tho tab say he koshish rahi k matlab iss ki jitni precautionary measures hain woh follow karain, haath dhona baar baar.*” (Since COVID first started, I strived to follow precautionary measures like frequently washing hands).

One of the respondents mentioned that she has kept sanitizers her pockets, purses and bags in order to use it frequently while interacting with people and places. According to the interview verbatim of Respondent No.04 Emaan, “*Sanitizer meray paas har time hotha tha bag may, mai*

university chali jaon, hostel may ya idar udar kahin bhi meray paas sanitizer tha.” (I had sanitizer all the time in my bag whenever I used to go to university or even hostel).

Four of the respondents mentioned that advertisements related to sanitizer usage was propagated on media platforms and it was beneficial in steering people to use sanitizers. According to the interview verbatim of Respondent No. 07 Saima, *“Industries ya jo bhi kar rahay thay unki side say yeh aya tha k uss nay uh unn ko matlab sanitizers jaisay attractive bana diye thay.”* (Sanitizers were made attractive by the industries). And according to the interview verbatim of Respondent No.09 Maria, *“Yeh jo sanitizers k uh har ad mai diya jatha tha uh TV pay ad diya jatha tha, YouTube pay bhi.”* (Both on TV and YouTube ads were presented related to importance of sanitizers). And according to the interview verbatim of Respondent No.11 Anila, *“Iss k ilawa different companies nay jo k kabi pehlay sanitizer ka ad hum nay shahid kabi pehlay wo uh COVID say dehkha he nahi tha lakin uh uss COVID k time may hum nay sanitizer ko pehli dafa ad dehkay.”* (Moreover, companies which have not advertised ads for sanitizers before were advertising it now). Similarly, according to the interview verbatim of chief scientific officer of NIH and Respondent No.18 Dr. Waseem Malik, *“Logon ko jo hai behaviorally encourage kiya gaya k ap yeh sanitizers use karain.”* (People were behaviorally encouraged to use sanitizers).

One of the respondents mentioned that that in order to increase the usage of sanitizers, government had placed free sanitizers at every public place where there were chances of COVID-19 infection. According to the interview verbatim of Respondent No.13 Abdul Ghaffar, *“Government nay jaga jaga pay ap k sanitizers waghaira laganay shuro kar diye aur gheron may bhi uh yeh trend barha.”* (Government placed sanitizers at various places and the trend of sanitizers increased at homes too).

4.2.4.6 Risk Communication

Risk communication, according to WHO is the real-time exchange of information, advice and opinions between experts or officials and people who face a threat (from a hazard) to their survival, health or economic or social wellbeing. In case of COVID-19, risk communication played a major role in nudging or steering people toward precautionary measures, testing and vaccination etc. In Pakistan, risk communication was assisted by government and doctors, and the risk was communicated via dial tunes, media, celebrities, infographics etc.

One of the respondents mentioned that beside government, doctors were also involved in communicating the risk of COVID-19 pandemic and to nudge people toward precautionary measures, testing and vaccination. 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). This shows that doctors played a major role in communication of COVID-19 related risk and awareness. Moreover, doctors as health professionals are more trustful for people as compared to governments.

Six of the respondents mentioned that risk was communicated via the government assisted dial tunes when one used to call someone on the phone. Such risk communication was aimed at nudging people toward precautionary measures, testing and vaccination etc. 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.*” (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.02 Haroon, “*Yar woh jo uh sab say acha jo hai, aik tho khair woh mobile k*

through jis ko call dial tune waghaira k zariyeh.” (First government propagated precautionary measures via dial tune of calls). And according to the interview verbatim of Respondent No.05 Alya, *“Unhon nay calls pay jis thara humari ya jab hum call kar rahay hain uss k upar baar baar baar yeh msgs diye gahay tho yeh aik acha tariqa tha communicate karnay ka k har thara k banday k paas jo hai yeh msg jahay, uss ki importance chali jahay k vaccination barhi zarori hai ya test karawana bohut zarori hai. Tho these were the good policies uh I guess.”* (it was one of the good way in which risk communication was done via dial tunes and messages in order to highlight the importance of vaccination and testing. Therefore, I guess these were good policies). 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...”* (We were sufficiently informed by the latest information given to us before phone call service in a dial tune. It would inform us that vaccination has been started and it used to encourage us for vaccination). And according to the interview verbatim of consultant cardiac surgeon of CDA hospital and Respondent No.16 Dr. Mahnoor Anwar, *“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. PTA may baqaida message atha tha jab ap call kartay thay na k apni vaccine lagwahain, yeh areas hain, iss number pay register karain.”* (Government and 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 risk was communicated via the government assisted media campaigns aimed at nudging people toward precautionary measures, testing and vaccination etc. 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.*” (However, they 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, “*Tho wo social media ya iss sab ki cheezon say uss nay knowledge aur precautions lenay shuro kar diye thay.*” (This was due to social media through which any normal person started to take knowledge and precautions).

One of the respondent mentioned that risk was communicated in the form of government assisted infographics in order to nudge people towards precautionary measures, testing and vaccination. Moreover, these infographics were dispensed via media platforms and posted within offices and institutions etc. According to the interview verbatim of chief scientific officer of NIH and Respondent No.18 Dr. Waseem Malik, “*Bilkil iss may hum nay visual graphics bhi use kiye. (Interruption). Hum nay jo hai wo visual infographics bhi use kiye hain hum nay.*” (We have used visual infographics and voice messages to convey everything).

4.2.4.7 Infographics

Infographics are graphic visual representations of information, data, or knowledge intended to present information quickly and clearly. In case of COVID-19, infographics were formulated and propagated in order to steer and nudge people toward precautionary measures, testing and vaccination. These infographics are either in the form of static images or moving visuals.

Moreover, these infographics were dispensed via media platforms, advertisements and posted within offices and institutions etc.

Two of the respondents mentioned that government formulated infographics and propagated it in order to nudge people toward precautionary measures, testing and vaccination. According to the interview verbatim of chief scientific officer of NIH and Respondent No.18 Dr. Waseem Malik, *“Hum nay visual graphics bhi use kiye.”* (We have also used visual infographics). Similarly, at another instant he iterated, *“mai iss k hawalay say na behavioral scientist hon, na expert hon but infographics use kiye gahay.* (I am not a behavioral scientist, nor I am an expert, but infographics were used). And according to the interview verbatim of Respondent No.12 Maqsoom, *“Infographics ka tho uss ka matlab kafi faida howa hai logon ko kyun k kafi logon may na shaour paida howa hai uss baat...”* (About infographics, I would say that it really helped in benefiting people by making them aware about COVID).

One of the respondents mentioned that government propagation of infographics comparing different data across various regions influenced people to move toward precautionary measures, testing and vaccination. According to the interview verbatim of Respondent No.08 Minahil, *“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.”* (Government propagated infographics depicting comparison between vaccinated and non-vaccinated person due to which it attracted a lot of people and promoted vaccination).

One of the respondents mentioned that COVID-19 related infographics were propagated in the form of advertisements on different media platforms in order to nudge people toward precautionary measures, testing and vaccination. According to the interview verbatim of Respondent No.09 Maria, *“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 bohot saray ads ahay thay k yeh use kiya jahay, kafi cheezain aisi tho ayi thi.” (Both on TV and YouTube ads were presented related to Causes of pandemic, importance of mask, prohibition of handshakes and the use of sanitizers etc.).

4.2.4.8 Vaccination

Vaccination is a process of injecting vaccine in order to acquire active immunity against infectious viral diseases like COVID-19. Vaccination was actively promoted by the governments all over the world in order to quickly acquire immunity and to stop the further transmission of COVID-19. Vaccination was assisted both by governments and doctors. Moreover, in case of Pakistan, vaccination involved establishment of testing/vaccination centers, mandatory vaccination certificates, vaccines ambassadors, partially delayed vaccination drive and senior citizens vaccination etc.

Two of the respondents mentioned that establishment of testing and vaccination centers by government influenced people to start their vaccination. According to the interview verbatim of Respondent No.01 Ali, *“Uh iss government nay bhi jo kafi inn ki woh lagi thi um yahan pay testing services hothay thay, vaccines lagtay thay tho wahan matlab woh affection unhon nay lagi thi.”* (People started vaccination when govt established testing & vaccination through their centers). And according to the interview verbatim of consultant cardiac surgeon of CDA hospital and Respondent No.16 Dr. Mahnoor Anwar, *“PIMS k vaccination center ka mera experience hai, mai nay wahan pay theen desks dehkay hain, International logon k liye separate desk tha, staff k liye separate desk tha aur general public k liye separate desk tha aur round the clock twelve hours to twenty four hours yeh centers kaam kartay thay aur awam ko din raat vaccination services inhon nay provide ki.”* (I have an experience of checking the vaccination center at PIMS. There were three separate desks, one for foreigners, one for staff

and one for the general public. This vaccination center was running round the clock for twenty-four hours by vaccinating people day and night).

Two of the respondents mentioned that beside government, doctors were also involved in promotion and administration of vaccines. Doctors initially vaccinated themselves to demonstrate the safety and effectiveness of vaccines. According to the interview verbatim of consultant cardiac surgeon of CDA hospital and Respondent No.16 Dr. Mahnoor Anwar, “*Unn ka confidence win kar rahay hain. Doctors line may karhay ho k khud pehlay vaccine lagwa rahay hain ta k aam public unhen dehkay.*” (Doctors were winning confidence of people by first vaccinating themselves so that public can look at it). Similarly, at another instant she iterated, “*Uss kay behavior ko nudge kiya, modify kiya towards facilitation of the government services, to receive the vaccines.*” (We were involved in nudging and modifying the behavior of people towards facilitation of government services in order for them to receive vaccination). Lastly, according to the interview verbatim of resident PG internal medicine Shifa Hospital and Respondent No.17 Dr. Saifullah Khan, “*Issi thara humaray CPSP (College of Physician and Surgery Pakistan) nay bohot barha role ada kiya iss may k iss may logon ko iss k baray may aaga kiya, vaccination k baray may, booster dose laganay k baray may.*” (Similarly, our CPSP played an important role in the awareness campaign of vaccination and booster doses).

Three of the respondents mentioned that government had made vaccination and acquiring of its certificate a mandatory activity for travelling and accessing services etc. in order to compel and nudge people toward vaccination. 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, “*Unhon nay bilkul jis thara bahi nay kaha k mandatory kar diya tha.*” (Just like he said that vaccination became mandatory). And according to the interview verbatim of Respondent No.14 Shafiq, “*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 humaray say affidavit likwaya gaya tha k agar ap ko COVID hotha hai matlab ap vaccinated hain ya nahi vaccinated tho humain option he nahi diya gaya yeh aur not even Pakistan balkay dunya bahr may kahi pay option nahi diya gaya k ap lagwain ya na lagwain.*” (Our buses tickets, SIMs, foreign travel & even uni was associated with vaccination. At uni we were compelled to sign an affidavit to get vaccinated. Vaccination was mandatory for everyone not only in Pak but elsewhere too). This shows that vaccination was mandatory and similarly its certificate was necessary for accessing buildings and services. However, two of the respondents mentioned that such compulsions led to problems like forging fake vaccination certificates. According to the interview verbatim of Respondent No.10 Hania, “*Vaccination certificates ko bhi uh uh wo kar rahay thay k yeh jaali ban rahay hain aur iss thara ki cheezain ho rahi thi na, log inf infact jaali bana bhi rahay thay kyun k wo mandatory kar diya tha tho ab yeh keh saktay hain k iss say corruption bhi kind of uh ja rahi.*” (When government made the vaccination mandatory it has compelled some people to make fake vaccination certificates and as a result it was leading to corruption). And according to the interview verbatim of Respondent No.13 Abdul Ghaffar, “*Jali uh yeh mai nay khud cases iss k dehkay k k logon nay na ja jo nurses thi jo laganay wali thi jo administer karnay wali thi unhon nay aisay dispose kar diya aur unhon nay NADRA ko jo form tha uss pay ap ko uh tick kar diya k uh ap nay lagwa li hai.*

(I've seen cases where nurses used to tick NADRA form for vaccination without even vaccinating the person).

One of the respondents mentioned that she has been infected with COVID-19 even after vaccination and that vaccination didn't completely eradicate COVID-19. According to the interview verbatim of Respondent No.05 Alya, "*Meray point of view k mutabiq jo hai jo mai nay feel kiya k jo vaccination ayin thi jinhon nay dunya ko bohot save bhi kiya, iss may koie shak nahi hai lakin uss k ba wajoud bhi inhon nay hundred percent jo hai corona ki honay ki probability ko ya uss k cases ko uss tariqay say hundred percent khatam nai kar diya uh jis ka matlab yeh hai in other words k humain abi bhi uss k baray may conscious rehna chaiyeh kyun k abi bhi ho raha hai, teek hai, humari immunity generate ho chuki hai uss k liye lakin mujay khud jo hai uh mai na sirf do doses lay chuki thi normal doses uss k ilawa booster doses jo ayi thi mai nay woh bhi lagwa li thi, uss k bawajood mujay second time corona howa abhi recently June 2022 may, tho meray khyal say important factor yeh hai k humain iss ki possibility ko abhi bhi uh apnay mind say nai nikaalna chaiyeh, yeh vaccination waghaira k baad bhi ho sakta hai tho it shouldn't be taken that easy jitna hum nay abhi lay liya hai.*" (According to my point of view and what I have felt, vaccinations without any doubt have saved a lot of lives all over the world but it has not eradicated the probability of COVID to hundred percent because I was infected with COVID in June 2022 regardless of my complete vaccination along with booster dose. Therefore, I think regardless of our generated immunity we should not remove the possibility of COVID from our minds and it shouldn't be taken easy as we have considered it to be).

One of the respondents mentioned in order to promote vaccination, government utilized celebrities in their advertisements or public service messages and these celebrities acted like its ambassadors and advocates. According to the interview verbatim of Respondent No.12 Maqsoom, "*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.” (Just like brand ambassadors in marketing, celebrities acted like brand ambassadors for COVID vaccination by advocating vaccination nation-wide which attracted all their admirers to get vaccinated).

One of the respondents mentioned that senior citizens who were not able to go to vaccination centers were vaccinated in their residences. According to the interview verbatim of chief scientific officer of NIH and Respondent No.18 Dr. Waseem Malik, “*Unn k jo bazurg hazrat hai jo nai ja saktay thay, jo ill thay tho woh unnko woh kartay thay tho unn k liye yeh matlab unhon nay iss pay barha appreciate kiya, humain khud calls ayi hain, hum nay teams behji hain unhon nay baqaida shukarya ada kiya. Unhon nay jo hai woh barha appreciate kiya iss cheez ko.*” (We have sent our teams, people thanked and appreciated us for vaccinating their ill ones, the senior citizens who weren’t able to go to vaccination centers). This shows that in term of vaccination, senior citizens have been given special preference by government because of their weak immunity and inability to go to vaccination centers.

4.2.5 Non-Nudged Practices

Non-nudged practices are practices that were not steered in such a way as to change the behavior of people in order to make them follow precautionary measures, to go for testing and vaccination or to mitigate the negative effects of pandemic i.e. mental/psychological effects and loneliness. The theme of nudged practices and its subsequent sub-themes were discussed with the total eighteen respondents of 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 nudged practices is then classified into the following sub-themes.

4.2.5.1 Businesses Shutdown/Complete Lockdown

Business shutdown/complete lockdown is a restriction policy for the public to shutdown businesses, markets and to stay where they are due to the risks related to pandemics like COVID-19 in which social interaction and frequent movement is detrimental. Such lockdowns have both positive and negative effects. In Pakistan lockdowns involves unavailability of labor, institutional, businesses and markets shutdown. Furthermore, in Pakistan complete lockdown can be considered as a practice that was not nudged. Complete lockdown was implemented as a coercive intervention or hammer approach (crush the virus approach) by the Government of Pakistan without analyzing its consequences.

Two of the respondents mentioned that due to complete lockdown businesses and markets shutdown and people were unable to purchase and sale things due to which both work and family life of people was affected negatively. According to the interview verbatim of Respondent No.01 Ali, *“Jin k businesses hothay hain woh saray affect hothay hain iss say tho unki waja say matlab already phir family may bhi ah jatha hai tho...”* (It affected businesses and in turn it affected the family life too). And 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 aur yahi measures liye thay government nay saray.”* (Government ordered the closure of markets after 7 PM. They took the measure of completely shutting down the parks, shopping malls, institutions, universities and tourist spot).

One of the respondents mentioned that due to complete lockdown labor was unavailable for work due to which people started working on their own. Moreover, it was also negatively affecting the daily wagers who usually earn by laboring. According to the interview verbatim of Respondent No.02 Ahmed, *“Kaam karna zarori ho gaya tha kyun k Waziristan may na woh*

mazdoor bhi mile rahay thay tho mai nay apnay kitchen gher may khud banaya hai.” (It was necessary to work. I built kitchen at my home by myself because laborers weren’t available in Waziristan during COVID).

One of the respondents mentioned that due to complete lockdown public and private institutions shutdown due to which people were unable to get the services. According to the interview verbatim of Respondent No.04 Emaan, “*Sari jo cheezain band hoin, saray institutions band ho gahay.*” (All of the things and institutions were shutdown).

One of the respondents mentioned that lockdown has positive effect because it has reduced the transmission of COVID-19 virus by restricting people to stay where they are. According to the interview verbatim of Respondent No.14 Shafiq, “*Humaray haan ayin reyasat ko yeh ijazat deta hai k woh apni policies ko implement karnay k liye kisi bhi had tak ja saktay hain. K matlab legality base tho hum aisay keh saktay hain k warna koie allow nahi hai k kisi ki ah dukan koie band kar dy, koie allow nahi hai k kisi ka koie business ah k band kar dy lakin inn specific conditions jab matlab halat-e-jang jisay keh saktay hain hum matlab pandemic aik halat-e-jang tha, uss may reyasat k paas yeh haq hasil tha ayin k mutabiq k woh apni policies implement karnay k liye thorhi si sakhti bhi karna chahay ya thorhi si matlab as such hum keh dain k illegal tho nai keh saktay lakin matlab immoral act keh saktay hain k hum nay unn k ehtamaad ko tais poncha k, hum nay unn pay sakhtiyan kar k lakin at the end of the day faida uss layman ko he ho raha hai, aam banday ko he ho raha hai. Hakumat ko tho faida nai tha. Faida mujay ho raha hai k mujay COVID nai ho raha lakin meray pay sakhti bhi hoie hai tho hakumat k paas yeh haq hasil hai k matlab uss may hum legality may tho nai ja saktay.*” (Here in Pakistan, constitution gives right to the government to go to any extent in order to implement its policies. Generally, no one is allowed to shut down someone else’s shop or business etc. but COVID-19 pandemic was a kind of war like situation in which state has the right to use some force in order to implement its policies and all of this helped the layman at the end of the day.

There wasn't any benefit for the government. Actually, I was in benefit due to government policies as these were saving me from COVID. Thus, government has the right to implement its policies and we can't go into its legality).

One of the respondents mentioned that lockdown has negative effects because of the financial and psychological loss experienced by people and state as a whole. According to the interview verbatim of Respondent No.09 Maria, *“Jo inhon nay sab say pehlay lockdown lagaya that ho us ski waja say preventive measure tho tha he inka aur uh bohot loss bhi gaya tha Pakistan ki economy ko, lakin iss say yeh bhi howa tha k kafi logon ko andar reh reh k depression aur aisi anxiety etc aisay affects bhi ahay thay. Positive k saath saath yeh uh effects bhi ahay thay lockdown may.”* (Besides positive effects of lockdown there were some negative ones too. For example: economic loss, depression and anxiety due to loneliness and isolation at homes etc.).

4.2.5.2 Mental/Psychological Effects

Mental/psychological health effects are the consequences of certain policies implemented for curbing COVID-19. These policies were based on lockdowns, risk communication and precautionary measures. In Pakistan, mental and psychological health effects involve fear, anxiety, depression, loneliness etc. These mental and psychological effects were not mitigated by nudging people.

Three of the respondents mentioned that due to COVID-19 curbing policies, either they or other people were affected mentally and psychologically. According to the interview verbatim of Respondent No.01 Ali, *“Mentally bhi logon affect kiya hai.”* (It has also affected the people mentally). And according to the interview verbatim of Respondent No.03 Haroon, *“Woh jab patha chala uss k baad na k psychologically affect ho gaya hai.”* (Later on, we knew that there were psychological effects). Lastly, according to the interview verbatim of chief scientific

officer of NIH and Respondent No.18 Dr. Waseem Malik, “*Yeh aya hai, side effect aya hai, bilkul aya hai.*” (Absolutely, the psychological side effect of COVID was there).

One of the respondents mentioned that due to risk communication fear increases and thus it causes negative mental effects. According to the interview verbatim of Respondent No.03 Haroon, “*Aik tho khair woh mobile k through jis ko call dial tune waghaira k zariyeh, doosra media k through aur lakin iss k saath ziada negative effect bhi aya k psychologically ap k woh subconscious may hotha hai k yeh kitni khatarnaak bimaari hai tho ap ko pehlay say iss position pay rakti hai k yeh bohot ziada khatarnaak hai aur jab ap ko ho jathi hai tho ap ko aur bhi dara deti hai.*” (First, they propagated it via dial tune of calls and then through media. However, I think these have negative psychological effects because in your subconscious you think of it as dangerous disease and when infected with it, it makes you more frightened).

Four of the respondents mentioned that due to COVID-19 and its subsequent curbing policies by the government, people were experiencing symptom of fear, fright and panic. According to the interview verbatim of Respondent No.06 Qudratullah, “*Iss may khof bohot ziada tha, har banday k dil may bohot ziada fear tha.*” (There was a lot of fear, everyone was feeling a lot of fear in his/her heart). At another instant the same respondent iterated, “*Aik confusion create ki hoie thi tho woh bohot ziada iss thara thi k fear create kar rahi thi, haan yeh tha k jab mai Islamabad may tha tho tension bohot ziada thi, bohot ziada, even ap market say cheez bhi lay k athay thay tho uss ko bhi hum matlab shopper bhi jo hotha tha uss ko bhi hum properly touch nai kartay thay tho jaisay he samaan nikaal k foran say shopper ko utta k dustbin may daltay thay matlab aik ajeeb thara ki woh aik kya boltay hain uss ko nafrat si create ki hoie thi.*” (There was a lot of confusion & fear. Even when you used to buy something from market, you have to remove the shopper and put it in dustbin. There was a lot of hate everywhere). And according to the interview verbatim of Respondent No.07 Saima, “*Jitnay cases barhtay thay uski waja say matlab uh thorha dar bhi paida ho raha tha.*” (As the COVID cases used to

increase, fear also increased). And according to the interview verbatim of Respondent No.13 Abdul Ghaffar, “*Lockdown k baad na jab log gheron may bound ho gahay thay na tho unn ka screen time barh gaya tha aur social media aur baaki jo thay. Uss ki waja say bohot exploit bhi kiya logon ko kafi sectors nay ya kafi communities nay k fear induce kar diya tha logon k andar.*” (After lockdown when people were bound in their homes, usage of social media and screen time was increased which exploited people and communities by inducing fear in them). And according to the interview verbatim of Respondent No.14 Shafiq, “*Phir jo baad may hum nay news may dehka, inhon nay humain bataya uss may. Aik qisam ka fear bhi bohot ka factor bhi ah gaya tha, bohot ziada pehla tha k Germany may aij das hazar amwaat ho gahi hain, aij France may itni ho gahi hain.*” (Later on, due to news fear was also increased in masses when they saw thousands of people died from COVID in Germany, France etc.).

Four of the respondents mentioned that due to COVID-19 and its subsequent curbing policies by the government, people were experiencing symptom of anxiety, worry, stress and depression etc. according to the interview verbatim of Respondent No.06 Qudratullah, “*Yeh bimari batai gahi thi k matlab waqai yeh dangerous hai tho yeh waqai matlab bohot ziada matlab iss may jo sab say ziada impact mai nay note kiya hai woh psychological hai k insan psychologically bohot he ziada stress aur ajeeb kisam ki feeling hothi hai.*” (This disease was dangerous the way we were told about it because it made a huge psychological impact in the form of stress and strange feelings). At another instant the same respondent iterated, “*Feel hotha hai k ap jaisay nashay may hon tho mujay khud iss thara aur saath may mujay baaki bhi dehkay hain woh bhi iss thara k matlab insan may aik ajeeb thara ki mayoosi si hai jathi hai k uss ko koie bhi cheez achi nai lagti.*” (I felt intoxicated & I have seen others with the similar feelings. The whole experience makes you disappoint, and you don’t like anything). And according to the interview verbatim of Respondent No.09 Maria, “*Iss say yeh bhi howa tha k kafi logon ko andar reh reh k depression aur aisi anxiety etc aisay affects bhi ahay thay.*” (There was

depression and anxiety due to isolation at homes). And according to the interview verbatim of resident PG internal medicine Shifa Hospital and Respondent No.17 Dr. Saifullah Khan, “*Jab ap humaray patient ko ap quarantine may rak lo fifteen days k liye, twenty days k liye, unn may jo symptoms hum logon nay commonly dehkay hain anxiety, depression, neend ka na ana, irritability jis may chirh chirhapan ah jatha hai iss thar ki baaki complications kafi ziada dehkay ko milay hain.*” (When we used to put our patients in quarantine for 15-20 days, we saw symptoms of anxiety, depression, insomnia, irritability and other related complications). Similarly, according to the interview verbatim of chief scientific officer of NIH and Respondent No.18 Dr. Waseem Malik, “*Bohot ziada, bohot ziada. Mai nay logon may dehka hai, apni family, psychologically woh depress ho jathi hain. Psychologically depress honay k baad jo hai na woh matlab yeh woh hai. Jis ko khud howa hai woh unn ko bhi mai nay depression dehka hai, unki family ko bhi mai nay dehka hai.*” (It has a profound effect. I have seen people and their families, even within my own family. They get into psychological depression when any of the family member gets affected by COVID).

One of the respondent mentioned that mental and psychological effects of COVID-19 and its curbing policies were mitigated via religious teachings. 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 unkey religion say connect kiya.*” (I have connected those patients with religion who were in fear and anxiety etc.).

Lastly, two of the respondents mentioned that Government of Pakistan has not taken any step in order to mitigate the mental and psychological effects of COVID-19. According to the interview verbatim of resident PG internal medicine Shifa Hospital and Respondent No.17 Dr. Saifullah Khan, “*Post COVID anxiety, post COVID depression, iss k baray may logon ko aagaa kiya jatha hai lakin iss ki treatment k liye simple hum log tricyclic anti-depressant k classes*

hothay hain woh patients ko prescribe kartay hain. Iss k ilawa as such mass level pay uh iqdamaat nai kiye gahay hain.” (For post COVID anxiety and depression treatment we usually give our patients tricyclic anti-depressants. However, there wasn’t any mass level awareness program or step taken by government). Similarly, according to the interview verbatim of chief scientific officer of NIH and Respondent No.18 Dr. Waseem Malik, “*K mental health issues hain iss k upar woh humaray experts nay work kiya hoga lakin directly NCOC nay mental health prevention aur ya well-being k liye direct koie nai...*” (Our other experts would have worked on mental health issues like this one but NCOC had no direct involvement in mental health prevention and well-being).

4.2.5.3 Loneliness

Loneliness is a feeling of aloneness and lack of companionship. In COVID-19 pandemic, people have experienced loneliness because of social distancing, quarantines and lockdowns. Feeling of loneliness can be considered as an overall mental and psychological effect of COVID-19 and its curbing policies.

One of the respondents mentioned that humans are social animals due to which they cannot live in isolation for a long period of time and that they need social interaction and community to live and to be safe from the mental and psychological problems. According to the interview verbatim of Respondent No.03 Haroon, “*We are as a social animal, agar ap individually aik kamray may rehna chaho tho barha mushkil ho jatha hai.*” (We are social animals and if you want to live individually in one room, then it becomes really difficult). This shows that loneliness is something that is contrary to human nature and in pandemic situation like COVID-19, it is imperative for government to mitigate such effects.

One of the respondent mentioned that loneliness was mitigated via religious teachings. According to the interview verbatim of consultant cardiac surgeon of CDA hospital and

Respondent No.16 Dr. Mahnoor Anwar, *“Iss ko doctors nay meditation therapy aur uss meditation may mera patient ko mai yeh counsel karti thi k jis waqt ap steam lay rahay hon tho bees minute k liye ap Surah Rehman ki recitation on kar dain, khamoshi say sunain.”* (Side effects were dealt with meditative medical therapy. I would guide my patients to listen to Surah Rehman silently for 20 mins whenever they are taking the steam).

Lastly, two of the respondents mentioned that that Government of Pakistan has not taken any step in order to mitigate the feeling of loneliness during COVID-19 pandemic. According to the interview verbatim of chief scientific officer of NIH and Respondent No.18 Dr. Waseem Malik, *“Kyun k NCOC ka yeh loneliness k hawaly say jo hai na matlab iss cheez ko hum tho active disease control k andar thay na tho iss cheez may side effects ho jathay hain.”* (Because NCOC and we were in active disease control and loneliness is the side effect). At another instant the same respondent iterated, *“Directly NCOC ka meray knowledge may nai hai koie k iss k upar kaam howa ho. Indirectly support hogi.”* (There isn't any work done on this aspect by NCOC directly but there is a possibility of indirect support by NCOC teams).

4.2.5.4 Misinformation

Misinformation is incorrect information based on rumors that usually circulates during developing pandemic situations like COVID-19 in which there is a lot of information flowing and it becomes difficult to recognize truth from falsehood. Misinformation regarding pandemic is detrimental because it can negatively affect the health of people as a whole. Governments all over the world strived during COVID-19 to tackle misinformation. In Pakistan, there was misinformation about vaccines, deaths and it was handled or tackled via personal experience, religious practices and short messages.

Four of the respondents mentioned that during COVID-19 pandemic, there was misinformation about the nature and effectiveness of vaccines like suspicions, evil intentions, chip induction,

religious conversions, ineffectiveness and genetic engineering. According to the interview verbatim of Respondent No.01 Ali, “*Uh iss may woh bhi atha hai na k ziada say log iss ka matlab woh nai tha, yaqeen nai tha iss pay k matlab yeh aisay he vaccine hai aur iss say kuch hotha nai.*” (People were initially suspicious about the nature and effectiveness of vaccines). And according to the interview verbatim of Respondent No.07 Saima, “*Misinformation vaccine say related iss type ko mai nay sunhi thi uh apni aik family member say k uh yeh aik chip jo hai wo through vaccine jo hai Bill Gates aik chip daal raha hai jo matlab saari dunya uss k under ah jahay gi, aisa kuch suna tha k wo matlab jaisa hum musalman hain tho humaray wo badal dy git ho uh wo iss thara matlab khud he hum log samja k matlab jo ussi family member matlab jo parhay lihki families hain ya jo matlab vaccine may kar rahi hain iss may doctors ko bhi initiative laina chaiyeh tha.*” (Misinformation that I have heard from one of my family member regarding vaccination was that Bill Gates is inducting some kind of chip into us via vaccine & the whole world will be under its influence & it may convert us from Muslims to something else. I think Dr within educated families should have taken some initiative to guide people in the right direction). And according to the interview verbatim of Respondent No.08 Minahil, “*Misinformation jo mai nay sunhi thi, wo tho yeh thi k vaccine lagwanay k baad do ban banda do saal baad mar jahay ga.*” (Misinformation that I have heard was that after vaccination the person will die after two years). And according to the interview verbatim of Respondent No.12 Maqsoom, “*Jaisay Polio k cases hain Islamabad may aisay bhi hain k Islamabad may hatha k educated gher gheranay wo log apnay bachon ko Polio ki vaccine nai lagwatay issi waja say k yeh iss may pig ka istemal howa howaa hai k wahan say genetic engineering jo yeh waghaira hoie hoie hai.*” (Even some of the educated families in Islamabad don’t want their children to get polio vaccine because of myths and misinformation like the use of pigs and genetic engineering in vaccine).

Five of the respondents mentioned that during COVID-19 pandemic, different propagandas were emerging along with other misinformation. According to the interview verbatim of Respondent No.01 Ali, *“Kafi propagandas iss k khilaaf hothay thay.”* (A lot of different propagandas were emerging). And according to the interview verbatim of Respondent No.02 Ahmed, *“Pehlay hum issay mazaq samaj rahay thay, hum samaj rahay thay k waisay he afwaa hai.”* (Initially, we were considering COVID as a joke and rumor). Similarly, the same respondent further stated, *“Logon ka k who kehtay hain k China nay iss ko khud biological war tha aik tho uss ka bhi affect parha hai.”* (Moreover, there are few who think it is a biological war launched by China and we are experiencing its effects). And according to the interview verbatim of Respondent No.03 Haroon, *“COVID say yeh hai k like jaisay abi khatam ho gaya na COVID, jis ka naam o Nishan abi koie raha nahi na tho meray mutabiq yeh aik policy samjo ya aik plan samjo ya strategy samjo uh environment ko control karnay may aur ta k jo sara jitna hum matlab uh environment ko alooda kar rahay thay, yeh sab kuch kar rahay thay tho is waja say, tho mujay yeh lagta hai k yeh aik puri planning thi ta k uh matlab humara environment jo hai woh kafi matlab dubara stable ho jahay, nature jo hai, kyun k yeh humara future generation bohot barhi problem hai tho yeh jo baaki banaya gaya hai yeh khud banaya gaya meray lihaaz say, unn ka aik life time hai aur iss k baad yeh khud khatam ho jahay ga.”* (I think COVID is no more now because you can call it a policy, plan or strategy used to control environment that was in deterioration. Now, when environment is stable & COVID lifetime is complete, so it ended. Therefore, I think it was created with an intention). And according to the interview verbatim of Respondent No.09 Maria, *“Logon ki yeh baat bhi samnay ayi thi k mout tho ani hai corona say ahay ya jaisay bhi ahay.”* (According to some, death will come either due to COVID or something else). And according to the interview verbatim of Respondent No.14 Shafiq, *“WHO ki report k mutabiq k jo kits China nay behji thi wo bhi unhon nay matlab ziada tar kits China nay he behji thi aur China aur India k agar ap relation ki baat karain tho*

you know better k jo unn k diplomatic relations hain tho uss may yeh bhi aik baat saamnay ayi thi k unhon nay ghalat ghalat kits di thi wo test ghalat matlab positive false positive k ratios may ziada ayi hai ta k India pay matlab muahshi pabandiyan laga sakain.” (In WHO report, it was stated that testing kits imported from China to India were faulty and that’s why there was high ratio of COVID positive people reported. Keeping in view the diplomatic relation of China and India, China wanted India to launch economic lockdown). This shows that propagandas and misinformation about COVID-19 existed even among respondents.

Two of the respondents mentioned that they handled COVID-19 related misinformation when they themselves experienced COVID-19 or when they witnessed their near ones with COVID-19 experience. According to the interview verbatim of Respondent No.03 Haroon, *“Yar woh jab mujay experience howa uss k baad mujay patha chala k actually what it is.”* (Regarding misinformation, When I went through the experience then I realized of what it actually is). And according to the interview verbatim of Respondent No.06 Qudratullah, *“Start may tho mujay itna yaqeen nai ah raha tha, mai soch raha tha k yeh uh aik propaganda he hai lakin matlab mai yeh baat aksar repeat bhi karta tha lakin mai nay aik COVID k patient ko dehka apnay relatives may tho mujay andaza howa k yeh waqai he bohot dangerous qism ki bimari hai.”* (In the start, I was not sure enough to believe it. I was thinking of it as a propaganda but when I first saw a COVID patient in my relatives then I got the idea that it really is a dangerous kind of disease).

One of the respondents mentioned that misinformation can be handled via religious teachings and practices in order to convince people to opt for treatment of COVID-19. According to the interview verbatim of consultant cardiac surgeon of CDA hospital and Respondent No.16 Dr. Mahnoor Anwar, *“Propaganda ko beat karnay k liye, hum nay Surah Rehman aur Ruqiya k through apnay message poncha k aur unn ko convince kiya k ap ka ilaj karana Quran say saabit hai.”* (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 Quran proposes treatment for diseases). This shows that religious based teachings and practices were used and recommended by doctors to handle misinformation of COVID-19 in their patients.

One of the respondents mentioned that misinformation was handled by the government assistance. According to the interview verbatim 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).

4.2.5.5 Vaccine/Testing Hesitancy

Vaccine/testing hesitancy is the lack of willingness and eagerness to test or vaccinate oneself against the COVID-19 infection. Hesitancy in general arises due to uncertainty and doubt about anything that is new and emerging. Moreover, increasing misinformation and rumors also increases hesitancy. COVID-19 related vaccination and testing hesitancy emerged all over the world. In Pakistan, vaccination and testing hesitancy was due to misconceptions and high cost of testing.

Two of the respondents mentioned that vaccine hesitancy existed among people because of their misconception that they have held. According to the interview verbatim of Respondent No.01 Ali, “*Uh iss may woh bhi atha hai na k ziada say log iss ka matlab woh nai tha, yaqeen nai tha iss pay k matlab yeh aisay he vaccine hai aur iss say kuch hotha nai.*” (People were initially suspicious about the nature and effectiveness of vaccines). And according to the interview verbatim of resident PG internal medicine Shifa Hospital and Respondent No.17 Dr. Saifullah Khan, “*Kuch hothay hain jo vaccination k baray may bohot he negative propaganda*

samaj rahay hothay hain k vaccination say humari infertility ho sakti hai baaki as such propaganday kar rahay hothay thay tho yeh jo tha a bit problem government k liye ya unn policy maker k liye bhi.” (There were those who thought vaccination may cause infertility etc. and it became a difficult problem for government and policy makers to propagate their message and awareness). This shows that misconception and misinformation about vaccine were responsible for the vaccine hesitancy among people.

One of the respondents mentioned that testing hesitancy existed among people due to the high cost of conducting test for the presence of COVID-19 virus. According to the interview verbatim of Respondent No.05 Alya, *“Unn ka tho testing ki taraf rujukaan nai gaya aur uss k ilawa bhi agar dehka jahay tho tho even meray apnay friends circle may ya rishtadaro walay circle may uh jaisay agar mai dusray cities ki baat karon kyun k test mehnga tha tho aik bohot barhi uh reason mai nay yeh bhi feel kiya ya notice ki logon ki k woh chay saath hazar kharach karnay ko tayar nai thay k hum test kar wah’ahin aur uss k ilawa jo agar hum chotay areas ki baat karain jo humaray rural areas hain, teek hai! Wahan par tho bilkul he koie concept nai hai logon ka k woh corona test kara’ahin.”* (I noticed people for not moving toward testing was its cost, no one was ready for spending Rs. 6-7000 on a test. In rural areas, there wasn't any concept of testing. Moreover, educated people in my friends and family were not ready for testing). This shows that due to high costs of testing, people were hesitant to test themselves for COVID-19 infection.

One of the respondents mentioned that respondents think that vaccine hesitancy can be handled if people are given incentives for getting vaccination. According to the interview verbatim of Respondent No.07 Saima, *“Europe waghaira may unhon nay deals aisi laga di thi ya sale deni shuro kar di thi ya yeh. Yeh aik bohot barha factor hai jo matlab logon ko iss taraf matlab aik attraction dy saktay hai k agar matlab vaccine lagwain tho matlab humari government ko yeh matlab iss type ki koie scheme start karni chayeh thi jis may logon ko kuch mile raha ho tho*

phir kafi log attract ho jathay hain.” (In Europe etc., people were given various type of deals and sales as an incentive for vaccination and it was one of the main factor for attracting them towards vaccination. Our government should have started a similar kind of scheme based on incentives that would have attracted a lot of people). This shows that considering the example of incentive based vaccination drive in Europe, the Government of Pakistan should have provided some incentives in order to handle vaccine hesitancy.

Two of the respondents mentioned that vaccine hesitancy can be handled and reduced by educating people and increasing awareness in them about the importance of vaccination. According to the interview verbatim of Respondent No.12 Maqsoom, *“Jo ap nay baat ki hai iss say hat k agar educate kiya jathay tho wo bhi bohot ziada zarorat hai.”* (You have talked about giving incentives to curb vaccine hesitancy. Besides this, I think, educating people is more important and necessary). And according to the interview verbatim of Respondent No.13 Abdul Ghaffar, *“Yeh k logon k manpasand logon say uss k baray may achi baatain karwahain.”* (To convey awareness about vaccination via fans-admiring people).

Lastly, one of the respondent mentioned that vaccine hesitancy be handled and curbed via religious teachings and practices. According to the interview verbatim of consultant cardiac surgeon of CDA hospital and Respondent No.16 Dr. Mahnoor Anwar, *“Vaccine hesitancy pay hum nay already baat ki k propaganda generate ho raha tha, uss ko hum nay religiously bhi tackle kiya Surah Rehman k through. Mai nay Surah Rehman k message ko lay k aik aik molvi say baat ki, jo Jamia Naeemia k in charge hain. Phir shia, ale-tashee, barelvi aur hanfi ulma say meri meeting hoie,”* (We have already talked about vaccine hesitancy that propaganda was generating, and we tackled it religiously via Surah Rehman. I have taken the message of Surah Rehman and talked to one of the member of religious clergy and in charge of Jamia Naeemia. Moreover, we conducted meetings with the scholars of different sects like Shia, Ale-tashee,

Barelvi and Hanfi). This shows that doctors in their personal capacities have convinced people via religious teachings in order to curb the vaccine hesitancy.

4.3 Analysis of Visuals

Visuals refers to the pictures in the form of infographics or pieces of films that illustrate something. In COVID-19, NCOC and NIH under the supervision of MNHSRC, Government of Pakistan produced and disseminated both still and moving visuals in order to nudge people toward precautionary measures, testing and vaccination. A total of fifteen moving visuals (videos) and five still visuals (Infographics based pictures) were collected from UDC 6 for the analysis by identifying its key contents. The visuals were analyzed specifically for its contents only and these were showed to the respondents in the first focus group discussions in order to familiarize them for the purpose of follow up questions in the second focus group discussions. Keeping in view the research objectives and conceptual framework, the data gathered was then classified and analyzed into five main contents.

4.3.1 Precautionary Measures

Precautionary measures are practices and protection mechanisms for coping with serious and detrimental situations. In term of COVID-19, precautionary measures were the foremost important thing to follow in order to stop the transmission of COVID-19 virus because initially vaccines were not developed. In order to nudge people to follow precautionary measures, government and its agencies produced and disseminated visuals indicating the usage and importance of following precautionary measures. Out of the total fifteen videos, eight of them recommended various precautionary measures with step by step illustration on how to follow a specific precautionary measure. Similarly, out of the total five infographics based pictures, four of them recommended various precautionary measures.

Two of the video¹ mentioned almost all of the precautionary measures like wearing masks, covering mouth and nose while coughing or sneezing, maintaining social distance of at least one meter, avoiding touching the face, washing hands frequently, avoiding outdoor activities like sports, putting used tissues in dustbin² as shown in figure 4.1 and 4.2 respectively.



Figure 4.1: Precautions to fight COVID-19 (NIH, Precautions to fight COVID-19, 2020)



Figure 4.2: How to remain safe from COVID-19 (NIH, How to remain safe from COVID-19, 2020)

One of the video³ specifically mentioned the precautionary measure of washing hands and maintaining hand hygiene which include using hand sanitizers. According to it, the most

¹ https://www.youtube.com/watch?v=_QDKI-Ccqu0

² https://www.youtube.com/watch?v=WmWBKZPNj_k

³ <https://www.youtube.com/watch?v=qzOKguNW8o4>

effective way to keep yourself and others safe from this infectious disease is to frequently wash your hands for 40-60 seconds. Similarly, to use hand sanitizer if soap and water are not available as illustrated in the figure 4.3.



Figure 4.3: Hand hygiene to fight COVID-19 (NIH, Hand hygiene to fight COVID-19, 2020)

One of the video⁴ specifically mentioned the precautionary measure of maintaining social distance by avoiding large and crowded gatherings, handshakes, COVID-19 patients, maintaining one meter distance at grocery stores, using social media to connect with people and try to do office work from home as shown in the figure 4.4.



Figure 4.4: Importance of social distancing (NIH, Importance of social distancing, 2020)

⁴ <https://www.youtube.com/watch?v=fGacHQz5nPM>

While in the remaining four videos, precautionary measures were highlighted along with other major topics.

One of the infographics based picture mentioned the precautionary measures of wearing mask, washing hands, avoiding touching the face and maintain social distance of at least six feet. Moreover, it also mentioned the symptoms of COVID-19 as shown in the figure 4.5.



Figure 4.5: Corona virus disease (COVID-19)

One of the infographics based picture specifically mentioned the precautionary measure of washing hands in eleven steps as illustrated in the figure 4.6. According to it, one should wash hands for twenty to forty seconds.

Another infographic based picture specifically mentioned the precautionary measure of wearing mask as shown in the figure 4.7. According to it mask should be worn by COVID-19 patients, health care workers and people infected with flu etc.



ہاتھ کیسے دھوئیں؟



جراثیم کے خاتمے کے لیے اپنے ہاتھوں کو مندرجہ ذیل طریقے سے
(20 سے 40 سیکنڈ تک) دھوئیں۔



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Figure 4.6: How to wash hands?

Government of Pakistan
Ministry of National Health Services,
Regulations & Coordination

نوبل کورونا وائرس
(COVID-2019)

ماسک
کا استعمال

ماسک صرف مندرجہ ذیل لوگوں کو پہننا چاہیے

- جو کرونا وائرس انفیکشن کا شکار ہوں
- جو کرونا وائرس میں مبتلا مریضوں کی دیکو بھال کرتے ہیں (مثلاً ہسپتال و مرکز)
- جو عام نوعیت کے نزلہ اور فلو کا شکار ہوں

N95 ماسک
ایک سپیشل ماسک ہے اور صرف ان لوگوں کو استعمال کرنا چاہیے
جو کرونا وائرس کے مریضوں کی دیکو بھال کرتے ہیں۔

مزید معلومات کے لیے

1166
corona.info@nhsrc.gov.pk
www.nhsrc.gov.pk

یہاں
ای میل
ویب

صحت مند پاکستان

Figure 4.7: Usage of Mask

While in the remaining one infographics based picture, precautionary measures were highlighted along with the other instructions for passengers coming from abroad.

4.3.2 Celebrities Based Risk Communication

Celebrities are well-known and famous personalities among the general masses and their communication of COVID-19 related risk have a huge impact on public because they have large number of followers and are followed easily. Out of the total fifteen videos, celebrities communicated COVID-19 related risk in two of them.

In one of the video⁵, Mahira Khan a famous television actor, presented coronavirus awareness regarding misinformation and precautionary measures. In another video⁶, Ali Gul Pir a famous television actor and comedian explained the importance of clinical trials of COVID-19 vaccine in Pakistan and called the general masses to participate in these clinical trials. Similarly, in the same video, Fareed Zakaria an internationally renowned media figure stated a pleasant surprise of clinical trials that Pakistan has to offer despiteful of being considered as a dangerous country.

4.3.3 All-Inclusive Risk Communication

The COVID-19 related risk was communicated in an all-inclusive way as to transmit the message and awareness to almost everyone across the country. One of the videos⁷ mentioned the importance of following precautionary measures in the form of cartoons in order to attract children to follow precautionary measures. These precautionary measures include washing hands, not touching face, avoid greetings and maintaining distance as shown in figure 4.8.

⁵ https://www.youtube.com/watch?v=hxx_RL-i6zA

⁶ <https://www.youtube.com/watch?v=-bm9Ck0MIAg>

⁷ <https://www.youtube.com/watch?v=S1Fygbhntz8>



Figure 4.8: Meet captain care (NIH, Meet captain care, 2020)

Two of the videos were based on animations for adults depicting a conversation between a doctor and patient as shown in the figure 4.9 about what is a vaccine⁸ and are vaccines safe⁹. The purpose of these animated conversations was to tackle misinformation about COVID-19 vaccines and thus to reduce vaccine hesitancy.



Figure 4.9: What is vaccine? (NCOC, What is vaccine?, 2021)

⁸ <https://www.youtube.com/watch?v=XrSluuGQyS8>

⁹ <https://www.youtube.com/watch?v=wQkUpiK38g0>

Three of the videos¹⁰ communicated the COVID-19 related risk in the sign language for deaf people, in which a person on one side of the video was communicating in sign language as shown in figure 4.10. Such communication in sign language was majorly based on various precautionary measures.



Figure 4.10: Hand hygiene to fight COVID-19 (*NIH, Hand hygiene to fight COVID-19, 2020*)

Lastly, out of all the fifteen videos, ten of them communicated COVID-19 related risk in Urdu language which is the national language of Pakistan and majority of the population understands it. Similarly, all of the six infographics-based pictures were in Urdu language e.g. as previously shown in figure 4.5 etc.

4.3.4 Mental/Psychological Effects Mitigation

Mental/psychological effects were commonly observed during COVID-19 and it were affecting people in different ways. These effects include fear etc.

¹⁰ <https://www.youtube.com/watch?v=qzOKguNW8o4> , <https://www.youtube.com/watch?v= QDKI-Ccqu0> , https://www.youtube.com/watch?v=yf0p34Sur_A

Two of the videos¹¹ mentioned fear as a mental/psychological issue and it may increase misinformation. Therefore, it was suggested in the video to not to fear but to follow the precautionary measures and to get vaccinated.

4.3.5 Vaccine Hesitancy

Vaccine hesitancy is the lack of willingness to vaccinate oneself against the COVID-19 infection due to misinformation and rumors. In order to tackle vaccine related misinformation and rumors, government nudged people by disseminating videos in the form of public service message. Out of the total fifteen videos, four of them were based on tackling vaccine hesitancy.

One of the videos¹² was based on general awareness about the nature of vaccines. According to it vaccine is a special type of medicine which prepares a person's body for fighting against disease. Every needle injection or vaccine consist of dead, weak or part of that virus and when these are injected into the body of a person it produces anti-bodies or white blood cells which protects the body of a person when real viruses attacks the body and affects it.

Another video¹³ was based on the question of safety related to vaccines. According to it Vaccines are definitely safe. The side effects of vaccines are weak and temporary like pain in arm. Serious side effects are also possible, but they are very rare. Licensed vaccines go through rigorous trial before they are made available for the general public. It is important to note here that diseases for which such vaccines are made are more dangerous for us as compared to the temporary side effects of vaccines.

In the remaining two videos, two of the trending rumors regarding vaccines were tackled.

¹¹ https://www.youtube.com/watch?v=hxx_RL-i6zA , <https://www.youtube.com/watch?v=S1Fygbhntz8>

¹² <https://www.youtube.com/watch?v=XrSluuGOyS8>

¹³ <https://www.youtube.com/watch?v=wOkUpiK38g0>

One of the videos¹⁴ mentioned that there is a myth about COVID vaccine in the general public that there is no point in getting vaccinated because every now and then new strains of COVID-19 are coming. However, the video illustrated that such myth is completely incorrect because it is normal for viruses such as the flu virus to go through small variations in its genetics and such small variations do not often affect the effectiveness of a vaccine as shown in the figure 4.11.



Figure 4.11: No evidence to suggest vaccines will not protect against new strains
(NCOC, No evidence to suggest vaccines will not protect against new strains, 2021)

Another video¹⁵ mentioned that there is a myth about COVID vaccine in the general public that vaccines are being used to chip and track the population. However, the video illustrated that such myth is completely incorrect because Independent authorities across the world from countries that compete with each other have approved the vaccines and not found any microchip as shown in figure 4.12.

¹⁴ <https://www.youtube.com/watch?v=soahktovEY>

¹⁵ <https://www.youtube.com/watch?v=knEWSSES1Zyw>

Such illustration of myths busting, and facts explanation can help people in tackling misinformation and get attracted toward vaccination.



Figure 4.12: Vaccines do not contain any chips or trackers (NIH, Vaccines do not contain any chips or trackers, 2021)

4.4 Analysis of Policy Documents

Policy documents refers to the documents formulated by government agencies like NIH, NCOC, FDI, under the supervision of MNHSRC and with collaboration of international organizations like WHO and UNICEF etc. These documents were based on policies that government have formulated and implemented to curb COVID-19 in the country.

A total of twenty major and minor policy documents were collected from UDC 2. The major documents like National Action Plan (NAP) and National Deployment and Vaccination Plan (NDVP) were based on the overall COVID-19 policy of Pakistan. While a large number of minor documents were based on specific guidelines for each and every event, festival, celebrations or for a specific institution like schools and offices etc. Keeping in view the research objectives and conceptual framework, the data gathered was then classified and analyzed into the following three themes.

4.4.1 Precautionary Measures

In term of COVID-19 pandemic, precautionary measures were recommended for masses in order to prevent the transmission of COVID-19 infection. (MNHSRC, 2020) stated that precautionary measures should be followed along with the public display of notices promoting the precautionary measures of wearing masks, washing hands, maintaining social distance and observing self-isolation/quarantine.

With regard to the precautionary measure of wearing masks, (MNHSRC, 2020) stated that using or wearing of face mask is mandatory for both general public and health care workers because Corona virus can easily be transmitted via sneezing, coughing and talking. Therefore, to be safe from such virus, everyone should cover his/her face via 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 on how to wear and remove face mask at home and in health care settings along with the illustration of on how to make and sew cloth face masks.

With regard to 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.

With regard to the precautionary measure of maintaining social distance, (MNHSRC, 2020) stated that COVID-19 is a communicable disease and maintaining social distance as a preventive measure play 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 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 precautionary 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.

4.4.2 Risk Communication

During COVID-19 pandemic, its risk was communicated by the government. (MNHSRC, 2020) stated that the national Risk Communication and Community Engagement (RCCE) strategy was developed by the National Core Committee on COVID-19 based on global (WHO) and national technical advice. Along with MNHSRC, ISPR and Ministry of information were involved in developing of RCCE strategy and its implementation. The IEC (Information Education Communication) material produced by the national RCCE strategy was then disseminated to the public, parliamentarians, contemporary media, religious leaders, health and education sector in collaboration with WHO, UNICEF, NIH, EOC, HSA and HEC. The risk was communicated for the public, parliamentarians, contemporary media, religious leaders, health and education sector.

Firstly, the objectives of communicating COVID-19 related risk to the public were to educate on COVID-19 and its prevention, to address misconception, and to build trust in Government of Pakistan's preparedness and response to COVID-19. The risk was communicated in the form

of public service messages on television, radio, social media and printed flyers. Moreover, helpline on a toll-free number of 1166 was established for public.

Secondly, the objective of communicating COVID-19 related risk to the parliamentarians was to sensitize them on COVID-19 for onward public education in their constituency. The risk was communicated in the form of organic discussions in both houses of parliament and seminars/roundtables conducted with MNAs/senators.

Thirdly, the objective of communicating COVID-19 related risk to the contemporary media (print, social and electronic) was to sensitize media owners and anchors on COVID-19 reporting. The risk was communicated in the form of media briefings, daily handouts and talk shows with participants like special assistant to prime minister and government spokespersons.

Fourthly, the objective of communicating COVID-19 related risk to the religious leaders was to sensitize on COVID-19 for onward promotion of preventive personal hygiene. The risk was communicated in the form of high level engagement with Ministry of Religious Affairs, seminars conducted by Council of Islamic Ideology and religious leaders talk in Friday sermons.

Fifthly, the objectives of communicating COVID-19 related risk to the health sector were to inform professional organizations about preparedness and what they can do at their respective level, to educate health professionals about COVID-19 preparedness and risk communication, to enable frontline workers to conduct face-to-face RCCE in their community. The risk was communicated in the form of training at designated hospitals and indirectly through mass media.

Lastly, the objective of communicating COVID-19 related risk to the education sector was to educate children, students and their families at schools and universities level about COVID-

19, basic hygiene, and preventive measures. The risk was communicated in the form of IEC distribution and indirectly through media.

4.4.3 Vaccination

Vaccination is an introduction of vaccine into the body to produce immunity and protection from a specific disease. Generally, new vaccine development can take up to ten years, while COVID-19 vaccine was developed in almost one year because of the pre-existing knowledge about the structure and function of Coronaviruses like SARS and MERS.

In Pakistan, the federal Expanded Program on Immunization (EPI) developed the National Deployment and Vaccination Plan (NDVP) for COVID-19 vaccination under the guidance of NCOC, Ministry of NHSRC, Expert Committee, and the National Programme Manager. Moreover, technical assistance and planning support in the development of NDVP was provided by the United Nations Department of National Planning and Monitoring (DNPM), WHO, UNICEF and World Bank. Initially, EPI under the guidance of other governmental agencies coordinated with the COVAX facility, which is the only global initiative that is working to ensure COVID-19 vaccines availability to developing countries, including Pakistan. It has delivered the COVID-19 vaccines free of cost to approximately twenty percent population in Pakistan along with the cold chain equipment. Secondly, federal EPI and NCOC coordinated with National Database and Registration Authority (NADRA) in order to develop the National Immunization Management System (NIMS) in order to ensure record keeping of vaccinated population and un-vaccinated population for better planning, implementation and targeting. Thirdly, federal EPI under the leadership of Ministry of NHSRC developed a COVID-19 Inventory Management System (COVIM), which is a system of keeping information of vaccines at all level i.e. record of vaccine arrival on airport and then its distribution to provinces and health facility level. Fourthly, federal EPI with the support of the

Asian Development Bank (ADB) and UNICEF installed 21 Ultra Cold Chain (UCC) equipment in top 15 districts of Pakistan. Fifthly, Ministry of NHSRC and NCOC directed federal EPI and provincial health departments to manage surveillance activities by developing Adverse Events Following Immunization (AEFI) guidelines and training for COVID-19 surveillance. Sixthly, COVID-19 monitoring cell was established on May 8, 2021, by DG Health and WHO Representative in Pakistan. Seventhly, first mass vaccination center was established at Isolation Hospital and Infectious Treatment Center (IHITC) Islamabad on prevention and control of COVID 19. Lastly, National Emergency Operations Centre (NEOC) and EPI jointly launched a COVID-19 response center with a toll-free helpline 1166 for grievance redressal and community awareness.

In terms of vaccination, RCCE platforms were used for improving vaccine uptake among bigger populations. In Pakistan, to engage the public in the vaccine drive, diverse communication platforms were used including mass and social media, 1166 helpline, mobile phone text, robocalls and ringtones messages, health education provided to clients during vaccine administration, and other community engagement activities. (FDI, MNHSRC, 2021) stated that the key objectives of RCCE for vaccination were firstly to provide accurate, timely and actionable information to the audience about vaccine availability, eligibility, steps to avail the vaccination. Secondly, to build trust and address misinformation by providing accurate information. Thirdly, to build capacities and ensure there is a sufficient level of understanding around the new vaccines from concerned leaders, media agencies, Frontline Workers, faith-based organizations etc. Fourthly to generate credible evidence through social data collection and analysis to track and monitor public receptiveness to COVID-19 vaccination. Fifthly to address crisis situations through evidence-based crisis communications. Sixthly, to strengthen existing coordination mechanisms between internal, external and inter-sectoral partners. Lastly to provide technical assistance and guidance to provincial EPI and RCCE teams.

Regarding vaccine hesitancy and acceptance, (FDI, MNHSRC, 2021) stated that qualitative and limited quantitative research have indicated three key barriers in vaccine acceptance in the country. Firstly, government assisted risk communication on COVID-19 vaccine has not increased and only three percent of Pakistani people reported that they have received information from government. Secondly, UNICEF RCCE survey shows that people have fragmented views in trusting COVID-19 vaccine and people who trust religious leaders, family and community are least likely to accept the COVID-19 vaccine if it becomes available to them. Thirdly, risk perception on immunity from COVID-19, whereby people believe that Pakistan has already achieved an effective herd immunity for the virus; therefore, people have no need of the vaccine.

Lastly, MNHSRC provided guidelines for vaccines storage, handling, administration, booster doses and safe disposal along with recommendations for vaccines recipients. These guidelines were separately provided for the following vaccines: Moderna, Sinopharm, Cansino BIO, Sinovac, Astrazeneca, Pfizer, Pakvac and Sputnik V. Moreover, the guidelines and recommendations for vaccines recipients involved on who should and should not receive a specific vaccine.

4.5 Analysis of Observational Data

Observational data refers to the data that was observed during health care social situations, events, and processes at the testing and vaccination sites. Considering Islamabad as the locale of study, the data was observed at the COVID-19 mass vaccination center of F9 park, Islamabad and at the testing and vaccination site of NIH, Islamabad. Keeping in view the research objectives and conceptual framework, the observational data was then classified and narratively analyzed into the following three themes.

4.5.1 Process of Testing and Vaccination

The service of COVID-19 vaccination was provided at both F9 park mass vaccination center and at NIH. While COVID-19 testing service was provided at NIH only. The major mass vaccination center was established at family and recreational F9 park as shown in the figure 4.13 so that majority of people were attracted toward it. Moreover, F9 park is somehow located around the center of Islamabad due to which the mass vaccination center was accessible to all the residents of Islamabad.



Figure 4.13: COVID-19 Mass Vaccination Center along at F9 Park

Outside the mass vaccination center at F9 park, there was also a huge parking area for vehicles as shown in the above figure. The entrance was quite spacious with a lot of flyers pasted within the center on walls, indicating various areas within the vaccination center like token counter, registration counter, waiting area, public cafe, area for senior citizens, areas for wheelchair users, area for pregnant and lactating mothers etc. At the main entrance, infographics were displayed in English and Urdu languages on flex banners indicating important steps to follow for vaccinations as shown in the figure 4.14.



Figure 4.14: Infographics indicating steps to follow for vaccination

As depicted in the above figure, once a vaccine eligibility message was received after sending CNIC number to 1166, the process of vaccination involved getting a token by filling a slip at the token counter and then getting in the queue at registration counter to register yourself for either first or second dose of vaccine. After registration was done, one has to wait in the waiting area in order to be called for vaccination in the vaccination room as shown in the figure 4.15.



Figure 4.15: A man is getting a vaccine dose in vaccination room

After vaccination is done, one has to wait for about thirty minutes so that he or she can be monitored for any adverse effects. Lastly, it was recommended to resend a CNIC number to 1166 via SMS for vaccination confirmation and to be notified about the date for second dose. Unlike COVID-19 mass vaccination center at F9 park, the vaccination service of NIH with the support of WHO Pakistan was also delivering and administering vaccines, specifically booster dose to senior citizens and disabled persons at their homes as shown in the figure 4.16.



Figure 4.16: Vehicle for delivering vaccines to senior and disabled citizens

In case of COVID-19 testing as it is mentioned earlier, the service was only provided at NIH and that too free of cost. Other than that, in comparison to vaccination services, there were no major testing services provided by the government. Majorly, COVID-19 testing was handled by the private laboratories. Due to this, there were no procedures of testing people for COVID-19 virus before administering them with vaccines.

4.5.2 Behavior and Interaction of Healthcare Workers and People

It was observed during the visit to mass vaccination center at F9 park, Islamabad that the flow of people in and out of the vaccination center were really low and same was the case for the number of vehicles in the parking area as shown in figure 4.13. During the different stages of vaccination process, people were also less in numbers, but no one was acting in accordance to the precautionary measure of social distancing as shown in the figure 4.17.



Figure 4.17: Non-observance of social distancing at registration counter

However, the interaction and behavior of healthcare workers with the people was cooperative and friendly. The healthcare workers were providing information about the time period of first and second doses of different type of vaccines like CanSino, SinoVac, SinoPharm and AstraZeneca etc. Despite a small number of people, the behavior of people in queues were impatient as shown in figure 4.17. Lastly, due to small number of people, the male waiting area was completely deserted as shown in the figure 4.18.



Figure 4.18: Deserted male waiting area

The reason for small number of people at the mass vaccination center can be linked to the argument that people who were asked to present their vaccination certificates for travel, jobs and educational institutes etc. were getting their vaccinations while others were not urgently in need of these vaccination. This shows that people's intention for vaccination was not majorly based on the idea of protecting oneself and others from COVID-19 virus but to acquire vaccination certificate in order to gain the accessibility and mobility at various places and institutions etc.

4.5.3 Infographics at Testing and Vaccination Sites

There were a large number of infographics displayed at the mass vaccination center of F9 park, Islamabad. These infographics were targeted at all of the people and specifically at senior citizens, disabled persons and pregnant women. These infographics were based on precautionary measures, vaccination for pregnant women, awareness about COVID-19, process of vaccination and vaccine types etc. The purpose of these infographics was not only to spread awareness among the masses but to also nudge them toward the process of getting

vaccination. Figure 4.19 shows the infographics based on precautionary measures displayed at the mass vaccination center.

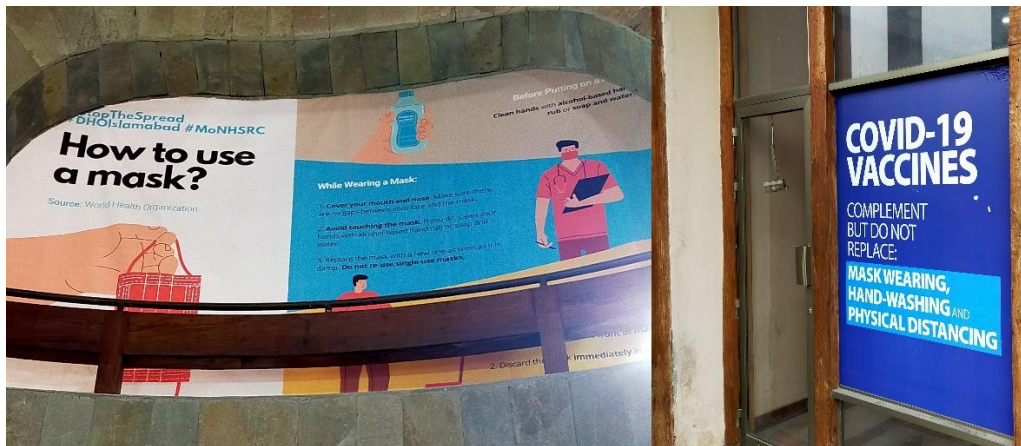


Figure 4.19: Infographics based on precautionary measures

Similarly, figure 4.20 shows the infographics based vaccination for pregnant women.



Figure 4.20: Infographics based on vaccination for pregnant women

Lastly, figure 2.21 shows the infographics based on awareness about COVID-19, process of vaccination and vaccine types.



Figure 4.21: Infographics based on awareness, process and types of vaccine

4.6 Conclusion

After the collected data from primary and secondary sources was analyzed, it was evident that enough analysis is available for discussion based on research objectives, literature review and conceptual framework as explained in the next chapter.

Chapter 5

Discussion

5.1 Introduction

After the analysis of results, these are discussed in the light of literature review, conceptual framework and research objectives.

5.2 Discussion on Results in view of Literature Review and Conceptual Framework

5.2.1 Need for Behavioral Insights Team and Unit

Until 1950s public policy was solely based on the rationalist tradition but in the following half century and in the first decade of new century until 2010, the emergence of taking into consideration behavioral sciences while formulating public policy came to prominence and large number of experiments and surveys were conducted in the first world countries on human behavior in relation to public policy. These experimental and surveys based studies identified the limitation of rationalist based public policy because humans in general and at policy making level suffer from large number of biases. Consequently, to rectify these biases, since the last twelve years, countries within the first world initially developed BITs, built organizations for these BITs known as BIUs and started collaboration with the BIUs of other countries and organizations. By keeping in view these developments and analyzing our results, it is evident that there is much importance and need of including behavioral sciences in the field of public policy and governance within third world countries like Pakistan. Initially, there is a need for experimental and surveys based studies like (Sasaki, Saito, & Ohtake, 2021) on human behavior and public policy specifically within the context of Pakistan because the circumstances of human behavior and public policy is different and unique for every other region. These circumstances depend on the social, political, economic and religious arenas.

With regard to this research and health sector, there is much dependency on the external agencies and organizations for health related public policy in Pakistan e.g. COVID-19 policy of Pakistan. Therefore, in order to become independent and efficient, Pakistan has to take the first step of conducting studies like (Mahmood, et al., 2020) to know about the attitude and perception of its population and then it can develop its own BIT and BIU which can then collaborate with other national and international organizations in order to guide policy formulation in Pakistan as explained by (Fabbro, 2021).

5.2.2 Application of FEAST Framework

Regarding FEAST framework, its significance can be recognized by the development of behavioral insights of EAST framework by the BIT of UK, which has been in use for various public policy formulation and advocacy in UK. Working on the same framework, (Sunstein C. R., *How Fun Might Move the World*, 2020) added the behavioral insight of fun, modifying it to FEAST framework which was applied in this very study to analyze the efficacy of government's COVID-19 interventions in Pakistan as mentioned in detailed in the previous section of this chapter. By utilizing these insights in public policies, people can be intervened or nudged into making more informed choices as mentioned by (Sunstein & Thaler, 2008). However, in case of COVID-19 some countries nudged their citizens without getting any influence from any specific set of behavioral insights. Rather these countries preferred to achieve the objective of nudging people based on some general heuristics. In Pakistan, as shown in the previous chapter, people were nudged into making them follow precautionary measures, go for testing and vaccination without any well-established behavioral insights working in the background and these nudges still worked exceptionally well. The behavioral insights of FEAST framework achieved certain objectives when particular practices and policies were adopted across different countries including Pakistan as shown in the table 5.1,

In which some of the behavioral components of FEAST framework have been detailed with respect to its application across these different countries.

Table 5.1: Application of FEAST Framework in different countries

Purpose	Behavioral Insights (FEAST)	Practices in China	Practices in New Zealand	Practices in Pakistan
Enhance public engagement in health-protective behaviors	Easy <i>(Reduce the hassle factor)</i>	Established online registration systems to distribute face masks and hand sanitizer to residents	Online and over phone booking of appointments for vaccination	Establishment of online registration system for vaccination by NCOC
Protect health care workers from infection	Easy <i>(Harnessing the power of defaults)</i>	Setting the highest protective standard as the default		
Public communication to prevent transmission & achieve precision infection control along with provision of certain incentives and rewards	Attractive and Fun <i>(Attracting attention by using images and colors)</i>	Applied traffic-light color coding to the health-status codes to identify individuals who should be quarantined while allowing low-risk individuals to work and attend school	A simple and vivid communication on brochure issued by government e.g. Be kind, stay home, save lives, check in on the elderly or vulnerable, unite against COVID19,	Risk communication via dial tune of phone calls and receiving colorful vaccination certificate online within few minutes
Foster networks to enable collective action, provide mutual support and encourage behaviors to spread peer-to-peer.	Social <i>(Using the power of networks and encouraging people to make a commitment to others)</i>	Establishment of more than six hundred 24/7 hotlines for psychological assistance	New Zealand’s “Unite Against COVID-19” public message emphasizing that the nation is “a team of 5 million”	Policy of “Smart Lockdown” in which areas with elevated disease incidence were identified as “Hotspots”
Producing a sense of optimism, unity, hope and smiles instead of despair, anger, division and fear	Fun <i>(How aspects of fun can be added)</i>		PM of New Zealand described the Tooth Fairy and the Easter Bunny as “essential workers,” legally authorized to carry on their work	Establishment of drive through vaccination centers e.g. Drive through vaccination center at F-9 park, Islamabad
Increase the prompt seeking of medical treatment	Timely <i>(Helping people to identify the barriers to action and plan their response)</i>	Implementation of a national emergency policy that covered all patients’ expenses	Prompt implementation of influenza plan at hospitals and later on evolved it to COVID-19 dynamics	Establishment of National Action Plan and health helpline on toll free number of 1166

Furthermore, within the context of COVID-19, the study of (Soete, 2020) explained why non-behavioral and coercive interventions fails to handle COVID-19 pandemic, which is similarly apparent in the results of our study too, when Government of Pakistan put forward the

drawbacks of complete lockdown and its effects on economy and lower class of society. Moreover, leaving COVID-19 policy formulation only at the disposal of medical doctors can also lead to coercive interventions because they usually prefer hammer approach in which to crush the virus even at the expense of complete lockdowns and strict restrictions. In addition to this, they are also unable to take into consideration the regional environmental characteristics.

However, behaviorally informed intervention/insights/nudges also face the challenge of legality as explained by (Fabbro, 2021). In a third world country like Pakistan, this challenge may come at the later stages when there would be a need to incorporate such nudges formally into law. At this stage, there is a need for experimental and survey based studies as mentioned above to pave the way for behaviorally informed policy formulation in Pakistan.

5.3 Discussion on Results in view of Research Objectives

The goal of collecting data and compiling results were to meet the research objectives in order to answer the research questions as mentioned in the first chapter.

5.3.1 Government Interventions regarding COVID-19

In response to the first research objective of identifying various government interventions regarding COVID-19, the results showed that government interventions were based on precautionary measures, risk communication, testing, vaccination and lockdowns.

Government interventions based on precautionary measures included firstly the usage of mask. According to the guidelines disseminated by MNHSRC, the general public were informed on how to wear mask, the settings in which wearing mask is mandatory, the age group for which masks are mandatory, how and when to use medical and non-medical masks, how to use your arm to cover your mouth while sneezing and coughing in case masks are not available, similarly

how to make or sew your own masks in case these are not easily available, lastly in which areas, national events, celebrations and festivals wearing mask is mandatory. Secondly, maintaining social distance was included in the government interventions based on precautionary measures. According to the guidelines disseminated by MNHSRC, the general public were informed on why it is important to maintain distance and avoid gatherings during a communicable disease like COVID-19, what should be the required distance between two persons and lastly in which areas, national events, celebrations and festivals maintaining social distance is mandatory. Thirdly, washing hands and using hand sanitizers were included in the government interventions based on precautionary measures. According to the guidelines disseminated by MNHSRC, the general public were informed on how to properly wash hands with a soap and use hand sanitizers, for how much time one should wash hands with soap and sanitizer, what should be the percentage of alcohol in a sanitizer and lastly, which areas, national events, celebrations and festivals frequently washing hands and using hand sanitizers are mandatory. Fourthly, observing self-isolation and quarantine were included in the government interventions based on precautionary measures. According to the guidelines disseminated by MNHSRC, the general public were informed on when and which person should observe self-isolation and quarantine, how to set up self-isolation and quarantine wards at your own homes. Moreover, government had arranged self-isolation and quarantine wards at borders, airports and hospitals.

Government interventions based on risk communication included national RCCE strategy for public, parliament members, media, religious figures, health and education sector. According to the National Action Plan by MNHSRC, the risk was communicated via various media platforms, dial tunes, toll-free helpline number, parliamentary seminars, media briefings by government officials, Friday sermons, training sessions at hospitals etc.

Government interventions based on testing included firstly, the announcement from the PM (Khan, PM Imran Khan Speech to Nation on Coronavirus Outbreak , 2020) to the general public on the limited capacity of testing at hospitals and that people should not directly go for testing if they are experiencing mild symptoms of cough and flu. Secondly, the dissemination of MNHSRC guidelines of testing for health care sector and public in which they were informed on plan of priority testing according to which first priority for testing would be given to the people with respiratory diseases and had recently come from other country, people who are already hospitalized due to other pre-existing diseases and are experiencing breathing problem, and lastly health care workers whom are dealing with COVID-19 patients. Second priority for testing would be given to the people with pre-existing diseases and are also showing all of the symptoms of COVID-19. Lastly, third priority would be given to the people who are already in quarantine. Thirdly, government intervention based on testing included identification of high risk sectors where testing should be preferred. These high risk sectors were hospitals, markets/malls, hotels/restaurants, prisons, areas of public gatherings, educational institutes and rural settlements. Moreover, provincial governments were instructed to decide the preferred area for testing centers.

Government interventions based on vaccination included firstly, the development of NDVP by EPI under the supervision of NCOC and MNHSRC, in which coordination with COVAX facility was established to provide vaccines. Secondly, NIMS was developed by NADRA with the coordination of EPI and NCOC, in which the data of vaccinated and unvaccinated people were recorded for the purpose of better future planning. Thirdly, COVIM was developed by EPI under the guidance of MNHSRC, in which data of vaccines were stored that had arrived at the airport and vaccination centers. Fourthly, UCC were placed by EPI at different areas of Pakistan, in which vaccines were safely stored. Fifthly, AEFI guidelines and training was launched by NCOC and MNHSRC for the purpose of vaccination surveillance. Sixthly,

vaccination monitoring cells and vaccination centers were established to vaccinate and monitor people. Seventhly, toll-free helpline number of 1166 was made public for general awareness and inquiry. Lastly, MNHSRC disseminated a number of guidelines for different vaccines, in which recommendations were provided to the vaccine recipients.

Government interventions based on lockdowns included firstly, the announcement of PM (Khan, Why not complete lockdown? Negative impact of complete lockdown on hospitals, 2020) that government will not opt for complete lockdown because of the difficult economic situation of the country due to which smart lockdown will be launched, in which areas with high positivity rate of COVID-19 would be locked only. Secondly, markets and businesses areas were instructed to shut down their activities earlier in the evening. Thirdly, areas with large gatherings like educational institutions and offices were instructed to shift their activities to the online mode of learning and working. However, the province of Sindh launched complete lockdown in which everything was locked until the rate of COVID-19 positivity decreases.

5.3.2 Behaviorally Informed Interventions

In response to the second research objective of analyzing whether which of the above mentioned interventions were behaviorally informed, the result showed that government interventions based on precautionary measures, risk communication and vaccination were unintentionally and unknowingly behaviorally informed, which means that government had not technically considered behavioral sciences or its experts in the COVID-19 policy formulation process rather they acquired help from the medical doctors in this regard and had utilized the COVID-19 policy framework of other first world countries along with the guidance from international organizations like WHO. According to one of the medical doctor, the consultant cardiac surgeon at CDA hospital Dr. Mahnoor Anwar, doctors were considered and expected to act as behavioral experts during the meetings of NCOC, but it is important to

actually consider and allow professional behavioral experts to sit in the meetings of NCOC. According to her, it would also lessen the burden of this additional responsibility from the shoulders of medical doctors by including behavioral experts in policy formulation process. Thus, according to the results analyzed, government interventions based on precautionary measures, risk communication and vaccination were behaviorally informed as evident in the illustration of infographics in the form of advertisements, public notices at various institutions, risk communication via dial tunes and media platforms, media briefing by the head of the government and dissemination of detailed guidelines on each of the above mentioned interventions.

5.3.3 Behavioral Insights and its Effectiveness

In response of the third research objective of identifying behavioral insights that were utilized and its effectiveness, the results showed that government had utilized a combination of progressive, regressive, educational and architectural behavioral insights by employing progressive, regressive, educative, architectural, social and emotional nudges and making use of group reinforcement and national bias. However, majorly regressive and educational behavioral insights were utilized. According to the chief scientific officer of NIH Dr. Waseem Malik, the government interventions utilized progressive behavioral insights because government distributed masks and hand sanitizers at a large scale, which was beneficial for the poor people of society who are unable to afford such things and it had also behaviorally encouraged the people to comply with the government's policies of COVID-19. However, government interventions were also based on regressive behavioral insight. According to him, although smart lockdown was launched keeping in view the lower class of society and economic condition of the country, but such smart lockdown was also regressive in nature because all of the institutions were locked along with the restriction on travelling, and the lower

class was unable to get the required services. In addition to these, government interventions utilized educative behavioral insights too in the form of risk communication, propagation of awareness via media platforms, employing celebrities to propagate public service messages and utilizing health care professionals to inform patients about COVID-19 severity. Similarly, architectural behavioral insights were also utilized by government interventions in the form of providing choices to indirectly achieve the goal of social distancing and home isolation by suggesting TV dramas and providing internet packages. According to one of the respondent of focus group discussions, the PM suggested a TV drama “Ertughul” to the general public and later on suggested another one too. Similarly, according to another respondent of focus group discussion, the network providers offered internet packages for the public. However, the purpose of taking such measures were not clear or made public. Lastly, government interventions made use of emotional nudges, group reinforcement and national bias by invoking the religious and nationalistic sentiments of people to increase the efficacy of government’s COVID-19 interventions. According to the consultant cardiac surgeon CDA hospital Dr. Mahnoor Anwar, people were guided on how the religion of Islam has signified that prevention is better than cure and that people should follow precautionary measures. In a similar manner, according to her, propaganda and rumors were handled using religious teachings and listening to and recitation of the holy book of Quran was recommended in case of patients experiencing mental/psychological effects of COVID-19. Finally, according to PM in one of his media briefings pronounced that not only government but nation as a whole can fight COVID-19. Likewise, in one of the video produced by NIH, people were motivated to participate in the clinical trials of COVID-19 vaccine by driving their inspiration from the national identity and Pakistan Zindabad slogan.

Regarding the effectiveness of behavioral insights, the analyzed results showed that majority of the respondents of the focus group discussions and episodic interviews stated that educative

behavioral insights made the government interventions effective. According to one of the respondent of focus group discussion, the public service messages disseminated by government in the form of advertisements were effective for the people who were not considering COVID-19 seriously. Likewise, one of the respondents of episodic interviews iterated that, that message on the dial tune had made them realize the severity of COVID-19. A respondent of the focus group discussions stated that, due to the public service messages of the government on social media, general public was getting knowledge and considering preventive measures. On the government intervention based on vaccination and risk communication, one of the respondent of focus group discussions affirmed that, voice message on dial tunes and infographics propagated by government informed us that vaccination has started and it used to encourage all of us for the vaccination.

5.3.4 Modification in Behavioral Insights to Increase Efficacy

In response to the fourth research objective of analyzing behavioral insights that can be modified to increase the efficacy of interventions, the results showed that firstly, keeping in view the increased poverty rate in the country, there should have been more focus on the progressive behavioral insights so that the interventions would have been more beneficial for the poor class of society. Likewise, regressive behavioral insights should have been kept to the minimum for the same reason of increased poverty and low literacy rate in the country. Secondly, the tool of boosts should have been utilized while using educative behavioral insights for the interventions. Such boosts can help the general public to have the required information at their disposal so that they can make more informed and best possible decisions. Thirdly, before calling on the religious and nationalistic sentiments of people using behavioral insights based on emotional nudges, group reinforcement and national bias, government should have conducted surveys on its effectiveness. Moreover, survey should have been done regarding the

effectiveness of every behavioral insights that were employed by government or those that will be employed in the future. However, such surveys are only possible if the government has a Behavioral Insights Units (BIU) or Teams (BIT), as discussed earlier in the previous section 5.2.1.

5.3.5 Incorporation of Behavioral Insights from FEAST Framework

In response to the fifth research objective of analyzing the efficacy of government's COVID-19 interventions by incorporating the behavioral insights of FEAST framework. The results showed that although FEAST framework was not actually considered in the government's COVID-19 interventions, but some aspects of the behavioral insights of FEAST framework was noticed in its interventions which were identified by the respondents of the interviews as effectively worked. Regarding the behavioral insight of fun in FEAST framework, one of the respondent of focus group discussions mentioned that, the recommendation of the TV drama "Ertughul" by PM can be considered as a fun aspect. Likewise, another respondent mentioned that, the presentation of COVID-19 related risk and awareness by celebrities in advertisement can be considered as a fun aspect. One other respondents provided the example of saving deals at restaurants for vaccinated people in the first world countries, which can also be considered as a fun aspect. As for the behavioral insight of easy in FEAST framework, the chief scientific officer of NIH Dr. Waseem Malik stated that, by making the public service message short and easy, it can reduce misinformation among the general public. Other respondents have also identified easy aspect and its effectiveness in the form of government's disseminated infographics, mobile based application with the name of "COVID-19 Gov PK", and online vaccination certificate by NADRA. Regarding the behavioral insight of attractive, the consultant cardiac surgeon of CDA hospital Dr. Mahnoor Anwar stated that, religious teachings were used to attract the people to follow precautionary measures. With regard to the behavioral

insight of social, one of the respondent of focus group discussions mentioned that, one of the most noteworthy social effort took place at mosques in which people collectively followed SOPs and maintained social distance. According to the consultant cardiac surgeon of CDA hospital Dr. Mahnoor Anwar, along with NCOC, we conducted meetings with the scholars of every religion and sect, and all of them acted as one during the crisis of COVID-19 pandemic. Finally, on the behavioral insight of timely, one of the respondent of episodic interview mentioned that government vaccinated more people in less amount of time. And according to the consultant cardiac surgeon of CDA hospital Dr. Mahnoor Anwar, the response of NCOC was immensely on time.

In an equivalent way, some aspects of the behavioral insights of FEAST framework were also evident in the moving and still visuals produced and disseminated by the government.

Thus, it is evident from the data and analyzed results that government can increase the efficacy of COVID-19 interventions by incorporating the behavioral insights of FEAST framework.

Chapter 6

Conclusion

6.1 Introduction

Pakistan being a third world country with a lot of issues in 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 its well-developed infrastructure, technology, governance and public policy were prepared enough to deal with COVID-19 pandemic as compared to Pakistan. However, Pakistan did manage well in this crisis situation with the help of international organizations and donors.

Outside the third world, countries in the public policy realm have been focusing on the inclusion of behavioral sciences while formulating policies. These countries have been working on developing BITs and BIUs to inform policies according to prevalent human behavior and conforming to their regional and environmental characteristics e.g. EAST framework was developed by the BIT of UK as explained in chapter 2. While Pakistan with its limited resources was not able to establish such BITs or BIUs. Therefore, its major COVID-19 interventions of precautionary measures, risk communication, testing, vaccination and lockdowns did not involve any intentional inclusion of behavioral insights in order to make these interventions behaviorally informed one. However, deducing from the results of our studies, interventions based on precautionary measures, risk communication and vaccination showed some signs of having behavioral insights as indicated in our data too. Moreover, when behavioral insights of FEAST framework were applied to the COVID-19 intervention in Pakistan, it was evident that it did, and it can increase the efficacy of these interventions if applied through a proper channel i.e. by first studying the prevalent human behaviors within Pakistani society and also its

regional and environmental characteristics. Only through such systematic way, people can be nudged to achieve the desired policy outcomes.

6.2 Usefulness of Research

As mentioned briefly in Chapter 1 of this study that 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's ministries and institutions because behavioral insights can be used by these too in order to increase the efficacy of their policies e.g. last year the provincial government of Khyber Pakhtunkhwa province of Pakistan established first BIU in its finance division (The News, 2021) . Lastly, such studies are also useful for future researchers specifically, within Pakistan.

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Appendix A

Following is a list of selected major and minor policy documents for the purpose of document analysis.

1. Guidelines for mandatory use of face mask by MNHSRC. Dated. December 11, 2020
2. Guidelines for home quarantine during COVID-19 outbreak by MNHSRC. Dated. September 26, 2020
3. National action plan by MNHSRC. Dated. March 13, 2020
4. Guidelines for social distancing during COVID-19 outbreak by MNHSRC. Dated. March 26, 2020
5. Guidelines for home isolation and discharge during COVID-19 by MNHSRC. Dated. January 21, 2022
6. Final guidelines for smart lockdown by NCOC. Dated. 2021
7. National deployment and vaccination plan for COVID-19 vaccines by FDI and MNHSRC. Dated. June 24, 2021
8. National testing guidelines by MNHSRC. Dated. July 01, 2020
9. Guidelines for Corona virus test by MNHSRC. Dated. March 25, 2020
10. Guidelines for safe Christmas celebrations during COVID-19 pandemic by MNHSRC. Dated. December 24, 2021
11. Guidelines for Eid ul Adha for prevention of Corona virus by MNHSRC. Dated. June 29, 2021
12. Guidelines for Independence Day celebrations programme, 14 August 2021 by MNHSRC. Dated. August 12, 2021
13. Additional guidelines for marriage events and ceremonies during COVID-19 by MNHSRC. Dated. November 27, 2020

14. Guidelines for Guru Nanak Dev Ji birth anniversary during COVID-19 by MNHSRC.
Dated. November 10, 2021
15. Interim guidelines for reopening tourism by MNHSRC. Dated. June 10, 2021
16. Guidelines and Policy for spectators for PSL 6 by MHSRC. Dated. February 16, 2021
17. Guidelines for Ramzan during COVID-19 by MNHSRC. Dated. April 02, 2021
18. COVID-19 vaccine booster doses interim guidelines by MNHSRC. Dated. May 11,
2022
19. Contribution of EPI to fight against COVID-19 by Federal EPI. Dated. June 2021
20. Health guidelines for education institutions reopening during COVID-19 pandemic by
MNHSRC. Dated. September 09, 2020

Appendix B

Following is a list of selected still and moving visuals for the purpose of visual analysis.

1. Precautions to fight COVID-19 by NIH, 2020.
2. How to remain safe from COVID-19 by NIH, 2020
3. Hand hygiene to fight COVID-19 by NIH, 2020
4. Importance of social distancing by NIH, 2020
5. Corona virus disease (COVID-19) by NIH
6. How to wash hands? By NIH
7. Usage of Mask by MNHSRC
8. Meet captain care by NIH, 2020
9. What is vaccine? By NCOC, 2021
10. Are vaccines safe? By NCOC, 2021
11. No evidence to suggest vaccines will not protect against new strains by NCOC, 2021
12. Vaccines do not contain any chips or trackers by NIH, 2021
13. Public service message for novel Corona virus (COVID-19) by MNHSRC and Dettol
Pakistan, 2021
14. Are you a health care professional caring for COVID-19 patient? By MNHSRC and
Agha Khan University, 2021
15. COVID-19 vaccine trial started at Shifa International with support of NIH by NIH,
2021
16. COVID-19 vaccine trials phase 3 in Pakistan by NIH, 2021
17. Wearing mask to fight COVID-19 by NIH, 2021
18. Know the symptoms of Corona and stay safe by NIH, 2021
19. Instructions for passengers coming from abroad specifically Iran and China by
MNHSRC
20. Don't worry about rumors regarding novel Coronavirus by NIH