

Navigating Food Insecurity Amid Economic Instability: A Post-Pandemic Analysis of Pakistan



Anum Obaid	Senior Lecturer. Riphah International University Faisalabad Campus
Maryam Hafeez	Riphah International University Faisalabad Campus
Dr. Nida Iqbal	Assistant Professor. Riphah International University Faisalabad Campus
Ajwa Akram (Corresponding Author)	The University of Faisalabad ajwaakram0@gmail.com
Saadia Manzoor	Senior Lecturer. Riphah International University Faisalabd
Azka Sharif	Riphah International University Faisalabad Campus

Abstract: Food security refers to the condition where everyone has access to sufficient food and drinking water, enabling them to maintain a healthy lifestyle. Pakistan currently ranks ninth among the ten countries grappling with severe food shortages. The situation is primarily attributed to the country's rapidly growing population and the impact of the pandemic. Food insecurity has a profound effect on millions of people in Pakistan, especially those from low and middle-income backgrounds. To analyze Pakistan's post-pandemic situation, qualitative research was conducted, which involved semi-structured formal interviews. The data collected was then analyzed using Everett M. Rogers' Diffusion of Innovation theory. The preliminary results drawn from this research reveal that individuals from underprivileged backgrounds face considerable financial pressure, which disrupts their mental well-being and negatively impacts their overall health. Consequently, the human body reacts to this stress by affecting various systems within, with the gastrointestinal tract being particularly vulnerable to the effects of mental health. Several factors contribute to the deterioration of individuals' health. These include food insecurity (resulting from a lack of access to safe, sufficient, and nutritious food), inadequate workplace facilities, limited awareness of national programs aimed at eradicating hunger, and poor lifestyle choices. Offering opportunities to all individuals can be a crucial step in reducing their mental pressure and motivating them to improve their livelihoods. When people are unable to meet their basic needs, they find it difficult to focus on other aspects of life. In summary, addressing food insecurity and its associated challenges is essential for the well-being of the population in Pakistan. By providing access to sufficient and nutritious food, improving workplace conditions, and promoting awareness of relevant national programs, the country can work towards creating a healthier and more prosperous future for its citizens.

Keywords: Food security, rapidly growing population, economic instability, underprivileged individuals, qualitative research

1. Introduction

Food security is the state where everyone consistently has the means to acquire an

adequate supply of safe and nourishing food that meets their dietary requirements and personal preferences, enabling them to lead an active and

healthy lifestyle. The definition of food security emphasizes four fundamental aspects: the availability of enough food, the ability to access it, the effective utilization of food, and the capacity to maintain food security economically and physically over time (FAO, IFAD & WFP, 2015). Unfortunately, Pakistan ranks ninth among the ten countries facing severe food shortages. According to U.S. Department of Agriculture (USDA) food insecurity is a multifaceted concept as they defined it refers to a socioeconomic state at the household level where access to sufficient food is uncertain or limited. Food insecurity has a significant impact on the lives of millions of individuals in Pakistan, particularly those belonging to low and middle-income groups (Munir, et al., 2023). Hunger and food insecurity share a close relationship but on the same time these two are two different concepts and it is important to distinguish between them both. Hunger, according to the USDA, is an individual-level physiological condition that can arise from experiencing food insecurity (Khan & Ali, 2023).

Food insecurity goes beyond mere access to food and encompasses affordability challenges due to cash shortages or unavailability (HIES, 2017). The mismanagement of resources and lack of implementation of rules have created many challenges, one of the major challenges that is directly proportional to food insecurity is the increase in population, which ultimately results in poverty. Pakistan is the sixth most populous country globally with a growth rate of 1.92% and the country is expected to become the fifth most populous state in the world by 2050 due to this rapid growth (Islam et al. 2023). Despite the Government of Pakistan's report stating an increase in per capita income from \$1531 to \$1629, food insecurity remains a pervasive issue in the country (Grebmer, 2019). The Pakistan national nutrition and demographic health survey revealed that 36.9% of households experienced food insecurity, with 37.8% of children under the age of five suffering from stunted growth. Additionally, 38.2% of males and 37.1% of females faced the same issue (Mahmood and Sultan 2006; GOP and UNICEF

2019). Furthermore, 60% of Pakistan's population is grappling with malnutrition (WFP, 2018). That's why Pakistani nation faces significant challenges in eliminating hunger (Munir et al. 2023). Food insecurity does not affect all members of a household equally, as housewives and children are more likely to experience hunger compared to males (Munir, et al., 2023). Regions that are underprivileged and underdeveloped are at a higher risk of long-term food shortages.

Food and nutrition insecurity pose significant obstacles to achieving the global zero hunger target set by the Sustainable Development Goals (SDGs). SDG 2 specifically aims to "End hunger, achieve food security and improved nutrition, and promote sustainable agriculture." The United Nations aims to promote sustainable agriculture by utilizing modern technologies and ensure fair distribution systems that could guarantee the sustainability of global population which might help in eradicating hunger and food insecurities (UN, 2023). But the global food security and nutrition landscape has entered a complex phase in the post-COVID world. The COVID-19 pandemic has disrupted various stages of the food supply chain, leading to food shortages in different regions and increasing the risk of global food insecurity. Staple food prices, such as wheat and rice, have risen due to these shortages or loss of income and employment (Khan and Ali 2023). The Pakistani government has implemented several national and regional programs to address food insecurity, including the National Zero Hunger initiative, the Special Cell National Zero Hunger Coordination, the School Nutrition and Micronutrient Initiative, Tawana Pakistan, and the EHSAAS nutrition program. Despite these efforts, the country continues to face severe hunger and malnutrition challenges (Grebmer 2019).

Inflation can have redistributive effects on income within an economy, and Pakistan's economy heavily relies on the agriculture sector, which serves as the backbone of the nation (Ali et al., 2023). The four pillars of food security mentioned earlier are closely connected to agricultural production and agriculture serves as the spine of Pakistan's economy (Ali et al. 2023).

In 1949, the sector of agriculture subsidized 53% to Pakistan's GDP, but with the passage of time this share has cut to 19.2%. Therefore, the share of the labor power involved in agriculture has also declined from 65% to 38.5% (Islam et al. 2023). Inflation is the ultimate result that have regressive effects which may worsen poverty and various uncertainties that affect macroeconomic stability. Therefore, managing inflation is crucial for overall economic well-being (Ali et al. 2023).

Besides food insecurity does not affect all members of a household equally, as housewives and children are more likely to experience hunger compared to males (Munir, et al. 2023). The focus of this research is to explore the correlation between economic instability and the health status of underprivileged individuals residing in Faisalabad, Pakistan. To achieve this goal, a fieldwork was designed in a remote area, facilitating in-depth interviews to investigate the actual situation on the ground.

This study aims to achieve the following major objectives:

- To support policymakers in improving and refining policies and programs aimed at achieving Sustainable Development Goal 2 (SDG 2). This will be accomplished by shedding light on significant issues and challenges related to food insecurity.
- To connect the research findings with Rogers's Diffusion of Innovation theory, which will help in identifying various obstacles and proposing potential strategies to address the current hunger situation.

In summary, the objective of this study is to investigate the association between economic instability and the well-being of disadvantaged populations residing in Faisalabad, Pakistan. Through direct interviews conducted in a remote locality, the research aspires to provide valuable insights for policy makers. Employing the Diffusion of Innovation theory, the study aims to formulate practical strategies for addressing food insecurity challenges, with a focus on a proposed Preventive innovation: "Boosting

education and skills may empower individuals to improve their livelihoods, especially in the face of reduced job opportunities resulting from inflation, thereby mitigating the issue of hunger."

2. Material & Method

Qualitative research is particularly valuable when certain important aspects cannot be adequately captured through a fixed questionnaire. Instead, open-ended, and flexible questions are used to gather comprehensive insights, enabling researchers to better understand experiences, opinions, and practices related to the chosen topic (Byrne, 2012). In the present **work**, qualitative research is used to achieve a comprehensive understanding of the current situation through in-depth interviews with specific groups. The focus is on gathering perspectives and insights from underprivileged individuals who struggle to fulfill their basic needs. Direct communication with these people will provide a clearer picture of how health is influenced by a person's social status. The study aims to gain unique and valuable information that may not be accessible through literature reviews alone.

As the current study is based on qualitative research, non-probability methods for sampling were used. Non-probability sampling intentionally selects participants based on specific features, rather than using statistical probabilities. The sample is chosen based on the characteristics required for the research question, aiming to obtain more detailed information related to the study. The sample consists of 8 individuals from different workplaces, and while the sample size is small, it provides valuable insights despite not representing the entire city of Faisalabad.

The collected data were compared and analyzed to identify factors that act as obstacles to good health or hinder the accomplishment of UN-prescribed SDG 2 (Sustainable Development Goal 2 - Zero Hunger). By examining these factors, a connection between health and income has been clarified. The data analysis is guided by theories, such as the Theoretical perspective or lens, which allows for the analysis of data based

on gender, class, race, and other marginalized groups. The theory of Diffusion of Innovation by Everett M. Rogers (Rogers, 2010) is used to analyze the data in this study.

The study on inflation and economic instability is treated as an 'innovation' within a social system, and thoughts and opinions are gathered through communication. The application of Rogers's Diffusion of Innovation theory aims to explore how innovative approaches can address challenges in providing and accessing healthcare. By analyzing the data considering this theory, the objective is to gain insights and propose strategies that can help identify responsible individuals or factors in the context of healthcare provision and accessibility.

3. Results & Discussion

Upon analyzing the collected data through the lens of Diffusion of Innovation by Everett M. Rogers (Rogers 2010), several factors were identified that contribute to the poor health of underprivileged individuals due to their unfavorable financial conditions. These factors are as follows:

3.1 Education/Skills Defines Job Categories.

Education holds a central position in the advancement and development of countries, particularly in the contemporary, highly competitive, and globalized world. The cultivation of skills and human capital stands as a vital element in any strategy for progress and growth. Education has the potential to elevate the standard of living, improve the overall quality of life, and create opportunities for everyone (Abbasi, Yang, & Sohail, 2023). According to Pakistan Education Department, the literacy rate is 59.3% compared to 62.8% reflected in the Economic Survey 2022-23 (Abbasi K. , 2023). The current data supports these previous facts as most of the sample were not only illiterate but unskilled as well which reduces their survival in this crucial inflation time where middle class families are living hand to mouth. Skills is the only alternative for education which can facilitate a person's economic conditions. Gaining proficiency in basic skills like mathematics and language can significantly enhance an individual's life and

pave the way for the acquisition of more advanced abilities (Abbasi, Yang, & Sohail, 2023). Education and skills exhibit a direct correlation with the occupational quality one attains. Within our study sample, a substantial portion lacked literacy yet managed to earn a livelihood through their skill set. Notably, some were engaged in driving rickshaws, operating cabs, working as sweepers or domestic helpers, or pursuing trades such as tailoring and security services. This underscores the notion that while education can supplant skills in terms of income generation, the synergistic blend of basic education and practical aptitude yields more lucrative outcomes.

One of our case studies exemplifies similar circumstances, as an illiterate and unskilled couple relied on the husband's occupation as a security guard both prior to and following the pandemic, with no substantial change in their financial situation. The wife lamented, 'Given his illiteracy and absence of any discernible skill, what alternative does he possess to secure an income? His prior attempt at entrepreneurship, involving the sale of fruits and snacks (Dhai bhalay), met with failure due to his inability to manage and comprehend the intricacies of his modest business.' To contribute to their household income, their son voluntarily discontinued his education after twice failing the 9th grade and embarked on a path to acquire valuable skills through apprenticeship at a motorcycle garage.

3.2 Income and Family Size Effects Resource Management

Food and nutritional insecurity can be ascribed to a multitude of intricate and multidimensional factors, encompassing low educational attainment, constrained employment prospects, an overabundance of unskilled labor, inadequate infrastructure, market interventions, inflation, gender disparities, food wastage, and deficiencies in food supply (Geng, et al., 2022). These factors, in conjunction with the impacts of climate change and economic downturns, played a pivotal role in the enhancement of food consumption insecurity in developing nations. Among the seven case studies examined, four individuals were engaged in dual employment,

with daily working hours ranging from 10 to 11 hours, primarily involving physically demanding tasks that disrupted the equilibrium of their nutritional intake. Consequently, these individuals were unable to meet their minimum daily calorie requirements, as their physical exertion exceeded their dietary input. A significant majority (58%) of these individuals cited "Earning Pressure" as the principal motivation for compromising their health, given their limited alternatives for sustaining and fulfilling their family's essential requirements.

The minimum average income among these families amounted to 20,000 rupees. However, their sources of income were not uniform, and some families resorted to employing child labor in order to meet their financial obligations. For instance, in one case, a respondent reported that her son discontinued his education after completing the 8th standard to work as an apprentice at a motorcycle repair shop, aiming to become a bike mechanic. Her son's daily earnings amounted to 100 rupees, resulting in a monthly income of 3,000 rupees, while her husband earned a monthly salary of 20,000 rupees. Notably, all the families identified three primary expenditures that were indispensable and could not be circumvented: utility bills, grocery expenses, and housing costs. According to (Mustofa, 2022), individuals possess inherent needs that are integral to their life pursuits. These needs become intrinsic to the human psyche as individuals develop emotional attachments both towards themselves and others. Among these fundamental human needs are the yearning for sustenance, shelter, marriage, family, community inclusion, the bonds of brotherhood and sisterhood, and the pursuit of a fulfilling career.

Each family within the sample experienced a nearly identical crisis, which can be attributed to the shifts in the global economy following the onset of the pandemic. The predominant portion of their overall monthly earnings was allocated to utility expenses, which, due to the nation's volatile state, exhibited a continuous upward trend. In some instances, these bills exceeded their entire income, compelling certain families to seek external assistance to meet these

financial obligations. Nutrition did not take precedence in their budgetary considerations, as none of the surveyed households designated funds for the consumption of nourishing and healthful meals. Instead, all households indicated that they simply consumed whatever sustenance was accessible to alleviate their hunger. It is evident that the income they generate falls short of adequately sustaining or satisfying the fundamental necessities of these families.

3.3 Insufficient Resources Lead to Poor Health.

As per The World Health Organization (WHO), health is defined as the equilibrium among mental, physical, and social well-being, often referred to as the "health triangle" (Salman, 2023). Sustaining a healthy lifestyle entails achieving a harmonious equilibrium across all three dimensions. Consequently, the data analysis underscored the fact that marginalized individuals found themselves compelled to work in order to provide for their families and meet their fundamental necessities. In pursuit of this objective, these individuals often exceeded their physical capacities, resulting not only in adverse effects on their physical health but also in mental strain. Many participants in the selected sample reported feelings of anxiety, aggression, stress, and frustration stemming from inadequate compensation and extended working hours, which, in turn, strained their familial relationships.

One of the participants in the study employed strong language to convey her sentiments, remarking, "My entire family is experiencing a profound sense of despondency, and the underlying cause is the insufficient means to meet our family's basic necessities." These challenging circumstances have had a profound impact on the health of her husband, with both individuals now grappling with Type II Diabetes (Husband's DM levels range between 500-550). Additionally, she has been contending with Hepatitis C for the past 15 years, and for the last four years, a thyroid condition has been diagnosed, leading to difficulties in swallowing. Medical professionals have recommended thyroid surgery, which, unfortunately, is beyond

their financial means. Furthermore, their children also face digestive issues such as constipation and diarrhea. Almost 100% participants of this survey emphasized the direct correlation between their mental well-being and their physical health, with her own mental health being adversely affected by the escalating inflation, prompting her to seek financial assistance through loans. This debt burden has contributed to the overarching sense of depression in their family.

Another system that is directly related with deficient consumption of food and mental health is the gastrointestinal system as this system is a highly sensitive component of the human body, is susceptible to even minor alterations in daily routines and stress levels (Salman, 2023). The majority of individuals within the chosen sample underscored their struggle with various digestive ailments, with the most prevalent issues being constipation and heartburn, attributed to suboptimal dietary habits. Their food choices were restricted, and they were obliged to consume what was provided at their workplaces, frequently relying on a diet dominated by carbohydrates, often accompanied by pickles. These families exhibit an excessive intake of carbohydrates and fats, which subsequently gives rise to various health concerns, such as diabetes, hypertension, and cardiovascular diseases. According to (Hu, van Dam, & Liu, 2001), it is widely accepted that diet and nutrition are significant factors in the onset of Type II diabetes (non-insulin-dependent), and related diseases such as cardiovascular disease and hypertension.

Additionally, participants reported experiencing other problems, including acidity, nausea, and diarrhea. A family within the research sample indicated their practice of preparing vegetable broth and extending its consumption over a span of three days by diluting it with water. This study demonstrates that insufficient resources and suboptimal dietary practices adversely impact both physical and mental well-being.

3.4 Food Insecurity after pandemic Leads to Poor Lifestyle

The unprecedented health crisis and economic

turmoil stemming from the COVID-19 pandemic have led to disruptive societal, economic, and psychological repercussions with regard to food consumption, food-related behaviors, and food security. The pandemic has indeed brought to light substantial deficiencies and susceptibilities within communities, institutions, and global economies, as documented by the United Nations in 2020. Even before the emergence of the COVID-19 pandemic, global concerns were mounting regarding food security and nutritional status, as reported by the FAO in 2020. The advent of COVID-19 is anticipated to further exacerbate this situation (Hassen & Bilali, 2022).

The issue of ensuring food supply has perennially posed challenges for humanity and stands as a significant policy preoccupation on a global scale for all nations. It is a sobering fact that approximately 821 million individuals across the globe endure chronic hunger, while a staggering 2 billion people grapple with deficiencies in fundamental nutrients, as reported by the World Health Organization in 2019. These deficiencies have far-reaching implications for their health and life expectancy (Mehmood, Arshad, & Bashir, 2023). The analysis of the data revealed that individuals facing economic hardship experience food insecurity, with a significant proportion of them excluding food from their budgetary priorities. These families allocate their resources predominantly to a single food group, primarily purchasing flour for the preparation of flatbreads, while neglecting other essential food groups, which results in a deficiency of vital nutrients necessary for proper bodily function. This dietary deficiency is a primary factor contributing to the occurrence of common ailments, primarily nutrient-related disorders, among underprivileged individuals. One participant in the study indicated that her approach to grocery shopping for food is based on her immediate needs rather than the nutritional requirements of her family's bodies. Furthermore, these individuals do not plan their meals or menus; instead, they consume whatever is accessible without considering its nutritional value. Another participant remarked, "At times,

we do experience food insecurity, as there are instances when I have nothing to offer my daughter, causing her to leave home on an empty stomach."

Individuals within this underprivileged demographic lead an unstructured and irregular way of life, primarily working as daily wage laborers with no fixed or stable income source, thereby lacking a structured routine. The uncertainty of securing employment on a daily basis to provide sustenance for their families is a pivotal aspect of their existence. These circumstances collectively culminate in an unhealthy lifestyle characterized by inadequate dietary choices, a lack of attention to their health, persistent exhaustion, and experiences of depression, all of which have a direct and adverse impact on their overall well-being.

3.5 Awareness of National Programs to Eliminate Hunger.

Following the pandemic, there has been a lack of significant government initiatives to address the challenges faced by these individuals. A few government programs, including EHSAAS and BENAZIR INCOME SUPPORT, were introduced (Mehmood, Arshad, & Bashir, 2023). However, the majority of people remained unaware of these programs aimed at alleviating hunger. Those who were informed about these initiatives encountered difficulties in accessing them due to additional document requirements that they neither possessed nor knew how to obtain. Some families reported receiving financial assistance from these programs, but it was not a regular occurrence. One woman mentioned her awareness of a government program initiated by Imran Khan, although she couldn't recall its name. She noted that she had received 14,000 rupees under this program once, two years ago.

3.6 Suggestion to Make a Better Life.

As per the findings of this research, life is influenced by a confluence of diverse factors, encompassing resource affordability, employment opportunities, education, skill development, health, and overall well-being (Mehmood, Arshad, & Bashir, 2023). An optimistic and conducive environment is not

only vital within a workplace setting but is also a crucial element for individuals to enhance both the quantity and quality of their work. Regrettably, the outcomes of the current study reveal that underprivileged individuals lack access to such a supportive environment, primarily due to their engagement in menial employment, such as housekeeping, street sweeping, and waste collection, which typically lack proper facilities for their workforce, thus undermining their work efficiency.

The majority of the participants in this research unequivocally acknowledged the importance of education as a potential catalyst for altering their current circumstances. However, financial constraints prevent them from pursuing education, compelling them to focus on acquiring practical skills to generate income. As articulated by one participant, "If my son acquires practical skills and establishes his own business, I believe my present situation could improve, thereby increasing my monthly income." Moreover, the same participant emphasized the value of education, stating, "If I were educated, I could offer tutoring services to the children in our community and earn a living; perhaps then, my situation would be more favorable. My lack of education is the primary reason for my current hardship."

4. Conclusion

The findings indicate that the financial strain experienced by underprivileged individuals significantly impacts their mental well-being, ultimately affecting their overall health. Achieving good health requires not only physical well-being but also mental and social wellness. When individuals face stress, their bodies react, and one of the systems most susceptible to these effects is the Gastrointestinal tract, which is particularly vulnerable to the influence of mental health.

Several factors contribute to the deterioration of health among these individuals. One crucial factor is the lack of appropriate workplace facilities and the absence of awareness regarding national programs aimed at eliminating hunger and ensuring food security by providing safe, sufficient, and nutritious food options.

Additionally, poor lifestyle choices can exacerbate their health challenges.

To address these issues and work towards achieving Sustainable Development Goal 2 (SDG 2), several strategies can be implemented. Firstly, the government should consider launching programs that offer stable monthly employment instead of daily wages. This step would alleviate the constant earning pressure felt by individuals and create a sense of security, leading to improved mental well-being.

Secondly, raising awareness about existing government policies and opportunities can be beneficial. Programs like free education and initiatives such as the EHSAAS nutrition program should be widely publicized, ensuring that eligible individuals can take advantage of these resources to improve their living conditions.

Providing opportunities and support to these underprivileged individuals is pivotal in reducing their mental pressure, which, in turn, can motivate them to focus on enhancing their overall livelihood. When basic needs are met, individuals can more effectively pursue other aspects of life and work towards a healthier and more fulfilling future.

References

- Munir, M. O., Hussain, M. A., Yaseen, T., Bibi, M., Kalsoom, Ayesha, . . . Tehreem. (2023). An evaluation of Pakistan's food supply and security. *Journal of Agriculture And Research*, 6, 12-18.
- Islam, M., Shehzad, F., Qayyum, A., Abbas, M. W., & Siddiqui, R. (2023). Growth Analysis of Production of Food Crops and Population Growth for Food Security in Pakistan. *Pakistan Academy of Sciences*, 83-90.
- Khan, Z., & Ali, A. (2023). Emerging Challenges in Agriculture and Food Science. *Global Food Insecurity and Its Association with Malnutrition*, 8, 11-27.
- UN. (n.d.). *THE GLOBAL GOALS*. Retrieved 2023, from <https://www.globalgoals.org/goals/2->

zero-hunger/

- Hameed, A., Padda, I. U., & Karim, S. (2023). Spatial analysis of food and nutrition security in Pakistan: a holistic pathway towards zero hunger policies. *GeoJournal*, 2563–2585.
- Shair, W., Mir, S. A., Hussain, S., & Bukhari, S. (2023). Effect of Safety Net Program on Household Food Insecurity in Pakistan. *Journal of Policy Research*, 131-141.
- Ali, N. I., Ali, U., Hussain, F., & Khan, D. (2023). Economic Factor Acting as a Catalyst for the Spreading of Inflation in Pakistan. *Journal of Law and Social Sciences*, 36-48.
- Grebmer, K. B. (2019). Global hunger index-2019: the challenge of hunger and climate change. *Welthungerhilfe*.
- WFP. (2018). Pakistan food security bulletin. Fighting HUNGER WORLDWide. . *World Food Programme*.
- Mahmood, A., & Sultan. (2006). M. National Institute of Population Studies (NIPS)(Pakistan), and Macro International Inc. *Pakistan Demographic and Health Survey*, 7, 123–145.
- GOP, & UNICEF. (2019). National nutrition survey 2018: Key findings report. *UNICEF Pakistan*.
- Hameed, A., Padda, I., & Salam, A. (2020). Estimating the socio-economic factors of food insecurity in Pakistan: A regional level analysis.
- GOP. (2020). Economic survey of Pakistan 2018–19. *The Ministry of Finance*.
- FAO, IFAD, & WFP. (2015). *The State of Food Insecurity in the World: Meeting the 2015 international hunger targets: taking stock of uneven progress*. Rome: FOOD AND AGRICULTURE ORGANIZATION OF THE UNITED NATIONS.
- HIES. (2017). *HOUSEHOLD INTEGRATED ECONOMIC SURVEY (HIES) - (2015-16)*. Islamabad: Government of Pakistan Statistics Division Pakistan Bureau of

- Hadley, C., Tegegn, A., Tessema, F., Cowan, J. A., Asefa, M., & Galea, S. (2008). Food insecurity, stressful life events and symptoms of anxiety and depression in east Africa: evidence from the Gilgel Gibe growth and development study. *Epidemiol Community Health*, 980–986.
- Mohammadi, M. M., Poursaberi, R., & Salahshoor, M. R. (2018). Evaluating the adoption of evidence-based practice using Rogers's diffusion of innovation theory: a model testing study. *PMC PubMed Central*, 25–32.
- Byrne, B. (2012). Qualitative Interviewing. In C. Seale, *Researching Society and Culture-3rd Edition* (pp. 207-222). London: SAGE Publication Ltd.
- Ritchie, J., Lewis, J., Elam, G., Tennant, R., & Rahim, N. (2014). Design and Selecting Samples. In J. Ritchie, J. Lewis, C. M. Nicholls, & R. Ormston, *Qualitative Research Practice- A Guide for Social Science Students and Researchers*. (pp. 111-146). London: SAGE Publication Ltd.
- Ali, S., & Kelly, M. (2012). Ethics and Social Research. In C. Seale, *Researching Society and Culture* (pp. 58-76). London: SAGE Publication Ltd.
- Creswel, J. W. (2014). *Research Design: Qualitative, Quantitative, and Mixed Methods Approaches*. (4th, Ed.) Washington DC: SAGE Publication Ltd.
- Rogers, E. M. (2010). *Diffusion of Innovations, 4th Edition*. New York: The Free Press.
- Ali, M., Azmat, S. K., & Hamza, H. B. (2018). Assessment of modern contraceptives continuation, switching and discontinuation among clients in Pakistan: study protocol of 24-months post family planning voucher intervention follow up. *BMC Health Services Research*, 359-376.
- Chambliss, D. F., & Russel, K. S. (2016). *Making Sense of the Social World- methods of investigation*. United States of America: SAGA.
- Salman, S. (2023). *Duly. Healthier Makes Happier*. Retrieved 07 2023, from [https://www.dulyhealthandcare.com/health-topic/how-the-health-triangle-can-help-guide-your-health-resolutions#:~:text=The%20World%20Health%20Organization%20\(WHO,to%20living%20a%20healthy%20lifestyle](https://www.dulyhealthandcare.com/health-topic/how-the-health-triangle-can-help-guide-your-health-resolutions#:~:text=The%20World%20Health%20Organization%20(WHO,to%20living%20a%20healthy%20lifestyle).
- Kandula, U. R., & Wake, A. D. (2022). Magnitude and Factors Affecting Parental Stress and Effective Stress Management Strategies Among Family Members During COVID-19. *Psychology Research and Behavior Management*, 15, 83-93.
- Abbasi, B. N., Yang, C., & Sohail, A. (2023). Uncovering basic educational skills and intelligence among women and children in rural Pakistan. *SN Social Science*, 3, 116.
- Abbasi, K. (2023, September 9). *Pakistan's literacy rate on a downward spiral*. Retrieved October 2023, from DAWN: <https://www.dawn.com/news/1774854#:~:text=ISLAMABAD%3A%20At%20a%20time%20when,the%20Economic%20Survey%202022%2D23>.
- Geng, J., Haq, S. U., Abbas, J., Ye, H., Shahbaz, P., Abbas, A., & Cai, Y. (2022). Survival in Pandemic Times: Managing Energy Efficiency, Food Diversity, and Sustainable Practices of Nutrient Intake Amid COVID-19 Crisis. *Frontiers in Environmental Science*, 10.
- Mustofa, A. Z. (2022, 12 2). Hierarchy of Human Needs: A Humanistic Psychology Approach of Abraham Maslow. *Kawanua International Journal of Multicultural Studies*, 3(2797-5460), 30~35.
- Hu, F. B., van Dam, R. M., & Liu, S. (2001). Diet and risk of Type II diabetes: the role of types of fat and carbohydrate. *Diabetologia*, 44, 805–817.
- Hassen, T. B., & Bilali, H. E. (2022). Impacts of the COVID-19 pandemic on food

security and food consumption:
Preliminary insights from the gulf
cooperation council region. *Cogent Social
Sciences*, 8.

Mehmood, Y., Arshad, M., & Bashir, M. K.
(2023). Household income and food
security during the COVID-19 pandemic
in the urban slums of Punjab, Pakistan.
*The International Journal of Justice and
Sustainability*.