# PSYCHOSOCIAL INFLUENCES ON EATING BEHAVIORS AMONG PAKISTANI UNIVERSITY STUDENTS: THE ROLE OF BURNOUT AND QUALITY OF LIFE INDICATORS

By

Anaya Manahil

(Registration No: 00000401251)

Department of Development Studies

School of Social Sciences and Humanities ($S^3H$)

National University of Sciences & Technology (NUST)

Islamabad, Pakistan

(2024)

# PSYCHOSOCIAL INFLUENCES ON EATING BEHAVIORS AMONG PAKISTANI UNIVERSITY STUDENTS: THE ROLE OF BURNOUT AND QUALITY OF LIFE INDICATORS

By

Anaya Manahil

(Registration No: 00000401251)

A thesis submitted to the National University of Sciences and Technology, Islamabad,

in partial fulfillment of the requirements for the degree of

Master of Science in

Development Studies

Supervisor: Dr. Muhammad Ammad Khan

School of Social Sciences and Humanities (S3H)

National University of Sciences & Technology (NUST)

Islamabad, Pakistan

(2024)

## THESIS ACCEPTANCE CERTIFICATE

Certified that the final copy of MS Thesis written by Ms. Anaya Manahil (Registration No. 00000401251), NUST School of Social Sciences and Humanities (S3H), Department of Development Studies has been vetted by undersigned, found complete in all respects as per NUST Statutes/ Regulations/ Masters Policy, is free of plagiarism, errors, and mistakes, and is accepted as partial fulfillment for the award of master's degree. It is further certified that necessary amendments as pointed out by GEC members and foreign/local evaluators of the scholar have also been incorporated in the said thesis.

Signature: _____

Name of Supervisor Dr. Muhammad Ammad Khan

Date: _____

Signature (HOD) Dr. Tauqeer Hussain Shah

Date: _____

Signature (Dean/ Principal) Dr. Zafar Mehmood

Date: _____

FORM TH-4

# National University of Sciences & Technology

## MASTER'S THESIS WORK

We hereby recommend that the dissertation prepared under our supervision by, Reg no. 00000401251, Titled: **PSYCHOSOCIAL INFLUENCES ON EATING BEHAVIORS AMONG PAKISTANI UNIVERSITY STUDENTS: THE ROLE OF BURNOUT AND QUALITY OF LIFE INDICATORS** be accepted in partial fulfillment of the requirements for the award of MS Development Studies degree with ( A ) grade.

**Examination Committee Members**

1. Name Dr. Tauqeer Hussain Shah Signature: _____

2. Name Dr. Rabi Zaid Signature: _____

3. Name Ms. Sheeba Tariq Signature: _____

Supervisor's name: Dr M. Ammad Khan Signature: _____

Date: 30.09.2024

Head of Department Signature Date

COUNTERSIGNED

Date: _____

Dean/Principal

## CERTIFICATE OF APPROVAL

This is to certify that the research work presented in this thesis, entitled "PSYCHOSOCIAL INFLUENCES ON EATING BEHAVIORS AMONG PAKISTANI UNIVERSITY STUDENTS: THE ROLE OF BURNOUT AND QUALITY OF LIFE INDICATORS" was conducted by Ms. Anaya Manahil under the supervision of Dr. Muhammad Ammad Khan.

No part of this thesis has been submitted elsewhere for any other degree. This thesis is submitted to the Department of Development Studies in partial fulfillment of the requirements for the degree of Master of Science in the Field of Development Studies.
Department of Development Studies, National University of Sciences and Technology, Islamabad,

Student Name: Anaya Manahil Signature: _____

Examination Committee:
External Examiner/Official Discussant
Name: Dr. Tayyeeb Hussain Shah Signature: _____

(Designation & Office Address)

Supervisor Name: Dr. Muhammad Ammad Khan Signature: _____

Name of Dean/HOD: Dr. ZAFAR MAHMOOD Signature: _____

# AUTHOR'S DECLARATION

I Anaya Manahil hereby state that my MS thesis titled "PSYCHOSOCIAL INFLUENCES ON EATING BEHAVIORS AMONG PAKISTANI UNIVERSITY STUDENTS: THE ROLE OF BUNOUT AND QUALITY OF LIFE INDICATORS " is my work and has not been submitted previously by me for taking any degree from National University of Sciences and Technology, Islamabad or anywhere else in the country/ world.

At any time, if my statement is found to be incorrect, even after I graduate, the university has the right to withdraw my MS degree.

Name of Student: Anaya Manahil

Date: 30-09-2024

## PLAGIARISM UNDERTAKING

I solemnly declare that the research work presented in the thesis titled "PSYCHOSOCIAL INFLUENCES ON EATING BEHAVIORS AMONG PAKISTANI UNIVERSITY STUDENTS: THE ROLE OF BUNOUT AND QUALITY OF LIFE INDICATORS" is my research work, with no significant contribution from any other person. Small contributions/ help wherever taken have been duly acknowledged and that complete thesis has been written by me.

I understand the zero-tolerance policy of the HEC and the National University of Sciences and Technology (NUST), Islamabad towards plagiarism. Therefore, I as an author of the above-titled thesis declare that no portion of my thesis has been plagiarized and any material used as reference is properly referred to/cited.

I undertake that if I am found guilty of any formal plagiarism in the above-titled thesis even after the award of the MS degree, the University reserves the right to withdraw/revoke my MS degree and that HEC and NUST, Islamabad have the right to publish my name on the HEC/University website on which names of students are placed who submitted plagiarized thesis.

Student Signature: 

Name: Anaya Manahil

# DEDICATION

To My Mother & My Father

(Who have loved me with all my flaws)

*"**The mountains that you are carrying, you were only supposed to climb."***

This work is dedicated to all those who do or do not read this. Those who have felt unnoticed, who have been fighting battles on grounds we cannot start to comprehend. With the silent screams and back-breaking burdens. Remember, you only survived because the fire burning inside you is brighter than the fire burning around you.

## ACKNOWLEDGEMENTS

I am thankful to my family because of who I am and what I am today. My father whose support made all the difference in my life. I'm grateful to my sister, and Dr. Jawad for boosting my morale when I was down in the dumps. Mostly I owe it all to my mother who has believed in my capabilities when I didn't.

I am thankful for my colorful group of friends who made it a little easier to breathe, a little easier to live, and a little easier to fight.

I am indebted to my supervisor Dr. Muhammad Ammad Khan, has been my support and my guide during my time in the university. He has shown me nothing but his endless kindness, appreciation, and confidence. Throughout the research, he has been patient enough to accept my inadequacies. It is my honor to have this opportunity to work with such a knowledgeable scholar as my supervisor.

My special thanks go to my Faculty Dr. Umer Khayyam, Ms. Sheeba Tariq, Dr. Tauqeer Hussain Shah, Dr. Rabia Zaid and Ms Fariha Tahir who have not only guided and supported me academically but also personally.

I would like to sincerely thank the people who made the data collection possible; and my kind participants, there honestly wouldn't be research without them.

Last but not least, I am obliged to all those scholars whose work I have consulted, borrowed, and benefited from.

# TABLE OF CONTENTS

# LIST OF TABLES

**Page No.**

# LIST OF FIGURES

**Page No.**

# LIST OF ABBREVIATIONS AND ACRONYMS

| | |
|---|---|
| HEC | Higher Education Commission (Pakistan) |
| PDHS | Pakistan Demographic and Health Survey |
| NCDs | Non-Communicable Diseases |
| QoL | Quality of Life |
| SDGs | Sustainable Development Goals |
| WHO | World Health Organization |

# ABSTRACT

This study aimed to uncover the psychological and social factors driving eating behavior patterns among young adults, as these patterns are associated with significant health risks and rising obesity rates. Therefore, it investigated the influence of burnout and quality of life on eating behaviors. A quantitative research approach was adopted using a structured questionnaire that included established scales, such as the MBI-SS and WHO-QoL brief. and EBPQ. Data were gathered from a diverse sample of 377 participants through stratified random sampling in Islamabad in Higher Educational institutions, ensuring representation across diverse backgrounds. Statistical analyses were conducted using IBM SPSS. Furthermore, it also utilizes social cognitive theory to explore how personal, behavioral, and environmental factors influence the eating behaviors of the study population. The study revealed that elevated levels of academic burnout correlated with unhealthy eating behaviors, whereas a higher quality of life was linked to healthier dietary choices. Gender differences indicated distinct eating habits, with males favoring low-fat diets and females more inclined towards emotional eating. Educational attainment also influenced eating behaviors, revealing that master's students adopted healthier patterns than bachelor's students. This study underscores the necessity of addressing both psychological and social influences to foster improved eating habits among university students in Pakistan. This study aims to enhance student well-being and promote healthier lifestyles through targeted interventions and support systems informed by comprehensive research. Recommendations for targeted health education programs and family support initiatives have been proposed to enhance the overall well-being of young people. Through targeted interventions and support initiatives, the well-being and nutritional choices of university students in Pakistan can be positively influenced, aligning with broader efforts towards sustainable development in societal progress.

Keywords: Eating behaviors, Nutritional choices, Burnout, Quality of life, Health education programs, Mental well-being, Pakistani Youth.

# CHAPTER 1: INTRODUCTION

## 1.1 Background

Nutrition is a fundamental social determinant that influences morbidity and mortality rates worldwide. Suboptimal dietary patterns pose severe physical, mental, and socioeconomic health risks across populations (WHO, 2020). According to the World Health Organization (WHO), 800,000 deaths annually can be attributed to poor-quality diets low in fruits and vegetables yet high in sodium, sugar, and unhealthy fats. Chronic conditions directly linked to nutrition, such as cardiovascular disease, diabetes, and certain cancers, now rank among the top causes of disability and health system burdens internationally. While these factors affect individuals across all age groups, youths and emerging adults face unique challenges that place them at particularly elevated risk. The global prevalence of poor dietary habits has reached epidemic proportions, significantly impacting public health (WHO, 2019). This nutritional crisis is exacerbated by socioeconomic factors, food industry practices, and inadequate health literacy, creating a complex public health challenge (Vidgen & Gallegos, 2023).

Youth represent a high-risk demographic, as lifelong eating habits develop during critical developmental windows. The initial years of university mark a period of experimentation often coinciding with deteriorating nutrition due to newly discovered independence and lifestyle changes (Karunanayake et al., 2020). The Global Nutrition Report (2022) indicates rising obesity, nutritional deficiencies, and diet-related non-communicable diseases among emerging adult cohorts globally. As youth progress to establish independent households and families, deleterious early dietary patterns propagate

intergenerationally. To delve deeper into the factors contributing to these concerning patterns. The following text highlights the underlying facts driving deteriorating trends.

Estimates suggest that 80% of deaths annually could be prevented through optimal population-wide nutrition (WHO, 2024). Stein and Galea (2020) highlighted that in the United States alone, more than 300,000 deaths annually are due to poor diet, which is a leading cause of preventable deaths. This suggests that dietary factors play a substantial role in mortality, which could be mitigated through improved nutrition (Stein & Galea, 2020). Beyond direct disability and mortality costs, obesity and diet-related illnesses drain national economies through lost productivity and increased healthcare expenditures. Developing regions disproportionately shoulder the consequences of nutrition inequities, with undernutrition persisting as the leading global risk factor for disease burden, according to the Global Burden of Disease Project (2021). Furthermore, Jiang et al. (2023) emphasized the global burden and health inequalities of protein-energy malnutrition, noting that while there has been a decrease in disease burden and health inequalities since 1990, the prevalence of malnutrition is predicted to continue to increase in Asian and African countries (Jiang et al., 2023). Beyond the mental health challenges youth face, examining how nutrition plays a significant role in overall health outcomes is crucial.

Detrimental dietary patterns exponentially increase the risk of acute and chronic illnesses, including metabolic, cardiovascular, gastrointestinal, and neurological diseases. At the metabolic level, excess calories consumed without sufficient energy expenditure, fuel weight gain, and obesity are primary drivers of conditions such as diabetes, fatty liver disease, and certain cancers (WHO, 2022).

Cardiometabolic health is affected by chronic inflammation induced by pro-inflammatory saturated and trans fats, excessive sodium, and added sugars common in ultra-processed foods and beverages (Mehboob, 2023). Populations derive more than half of their daily sodium through discretionary salt added during cooking or at the table rather than naturally occurring amounts in whole foods (Wang et al., 2023). Gastrointestinal health is associated with malnutrition, diarrhea, constipation, and inflammatory bowel disorders linked to dietary levels of fiber, whole grains, prebiotic-rich plant foods, and food hygiene (Mazzocchi et al., 2023). Similarly, mental wellness also affects brain development, neurotransmitter function, and the risk of depression due to micronutrient deficiencies or excess nutrition (Zielińska et al., 2023). Poor nutrition during critical developmental periods in youth can impair cognition and academic performance in the long term (Dominguez & Halili, 2018). This issue interacts with the global healthcare system, straining its capacity to deal with epidemics in vulnerable populations.

Suboptimal dietary patterns and the resultant diseases represent a critical healthcare burden at the population level. The high costs of treating and managing obesity, diabetes, cardiovascular illnesses, and certain cancers absorb significant portions of the national medical budget. Social security systems and private insurers face escalating costs in covering pharmaceuticals, chronic disease therapies, and other expenditures for largely preventable conditions linked to poor nutrition (Rachas et al., 2022). These economic and social costs severely strain resource-limited countries, diverting funds that could support broader developmental goals regarding education, infrastructure, and quality of life improvements. Globally, over 8% of total healthcare costs come from five major diet-related non-communicable diseases (NCDs): cardiovascular disease, diabetes, cancer,

chronic respiratory disease, and obesity (Mezzich, 2020). Since nutrition underpins disease risk and overall productive longevity, societal returns far outweigh investments in population-level food and nutrition programs.

**Nutritional Challenges and Cultural Cuisines of South Asia, specifically Pakistan**

Diverse foods in South Asian diets have evolved through rich cultural and agricultural traditions. Staple grains, such as rice, wheat, millet, and pulse, provide carbohydrates and plant-based proteins. Dairy foods such as yogurt and paneer cheese are prominent in the cattle industry. Herbs and spices such as turmeric, coriander, and cumin lend distinctive flavors to the myriad curries and gravies served with rice or flatbread (El-Sayed & Youssef,2019; Maji et al.,2023). Typical dishes include *biryani* mixed with rice preparations, *daal* soups or stews, vegetable curries, and naan bread. Oils, such as mustard, sesame, and coconut, are regularly used in cooking. Milk-based sweets, such as halwa and kheer desserts, popularly punctuate meals. However, liberal use of artery-clogging ghee or clarified butter, sugar, and heavy creams tilts the nutritional balance toward chronic disease risk (Paswan et al., 2021). In contrast, Western diets emphasize a variety of meats, dairy, and a wider assortment of produce year-round. Prepackaged and ready-made convenience foods feature heavily alongside restaurant dining. While providing nutritional diversity, excess processed meat and ultra-processed packaged items are correlated with cardiovascular and obesity epidemics in affluent nations (Matos et al., 2021).

Traditional Pakistani cooking utilizes ingredients and methods that can negatively affect health if consumed regularly in excessive amounts. Classical dishes are prepared using ghee or clarified butter as the primary cooking medium. *Ghee* is highly saturated,

contributing to elevated LDL cholesterol and cardiovascular disease risk when overconsumed (Mohammadi & Nasrollahzadeh, 2021). Additionally, the generous use of refined flour and sugar characterizes staple-baked goods such as naan, paratha, and various sweets integral to Pakistani cuisine. Excess added sugar promotes weight gain, diabetes, and dental issues (Kramer, 2023). Fried snacks filled with oil or clarified butter, such as *samosas, pakoras, and jalebi,* further provide empty calories versus nutrients. The cultural use of salt also tends to exceed recommended limits. Table salt, higher sodium ingredients such as garlic and ginger, and traditional seasoning mixes such as garam masala raise blood pressure risk over the long term (Saqib et al., 2022). Whole grains and fiber-rich legumes that formerly balanced rice and flatbread plates have been replaced by refined alternatives in many modern diets. While Pakistani cooking undoubtedly brings flavor, tradition, and cultural identity, overindulging in regular high-fat, high-salt culinary staples can endanger health. Moderate amounts as part of balanced dietary patterns arguably present lower risks than excessive unchecked portions, elevating the risk for obesity, cardiovascular disease, and related conditions that prominently impact the nation (Saqib et al., 2022).

Pakistan exemplifies the endemic nutritional issues in developing South Asian countries. The survey shows that over half of the youth consume diets low in fruits/vegetables yet high in sugar, oil, and fried snacks (Abidi et al., 2021). Fast-rising obesity rates are correlated with sedentary urban lifestyles versus traditional physical labor. Income-driven shifts towards imported packaged foods further compromise nutritional quality (Hayat et al., 2023). As Pakistan grapples with these intricate nutritional challenges, another pressing health concern has emerged, demanding urgent attention and action: the rising obesity epidemic.

National health surveys indicate that Pakistan is battling the burgeoning obesity crisis. A 2022 study found that, among school-aged children and adolescents (9-17 years), 5.4% were overweight and 2.2% were obese (Tanveer et al., 2022). World Health Organization Data indicate that 58.1% of Pakistanis are overweight, with 43.9% classified as obese (Ashraf et al., 2023). The data consistently show that overweight and obesity are significant public health concerns in Pakistan, affecting a substantial portion of both the adult and youth populations. The prevalence of obesity has increased from 8% in 2012 to 14%. This rising epidemic disproportionately affects urban regions and younger age cohorts, especially young women (NIPS & ICF, 2019).

**Heightened Risks for Youth**

Pakistani youth carry substantial excess weight. The PDHS reports that nearly 20% of adolescents ages 15-19 are either overweight or obese. Unhealthy dietary patterns pose more significant risks as young people establish independence at university. Multiple studies have highlighted a high prevalence of obesity among tertiary students. A cross-sectional study of medical students found that 46% of male and 31.4% of female students exhibited central obesity (Khan et al., 2022; Assir et al., 2016). Surveys point to suboptimal nutritional behaviors fueling the obesity surge. National Nutrition Surveys 2018 indicate that over half of Pakistani youth consume diets deficient in fruits/vegetables yet excessive in oils, sugar, and ultra-processed snacks (UNICEF, 2018). Additionally, sedentary lifestyles have replaced mainly physical activity norms owing to urbanization trends. Less than 15% of college students meet the weekly activity recommendations (Khan et al., 2022).

Skyrocketing rates of obesity are strongly correlated with increasing non-communicable diseases (NCDs). The PDHS links 28% of all mortality to NCDs, such as diabetes, cardiovascular illnesses, and certain cancers, which are notably higher in the younger age groups. Obesity alone is estimated to account for 3-10% of the annual healthcare costs in Pakistan (PIDE,2021). Addressing this urgent issue necessitates focused interventions that support healthy behaviors among vulnerable youths. University cohorts represent a priority given to nutrition established during this stage and mechanistically programs for long-term health. Building upon the complex nutritional landscape in Pakistan, it is crucial to examine a particularly vulnerable demographic within this context: female students who face heightened risks in the ongoing obesity epidemic.

### 1.2. Problem Statement

Eating habits formed during university years influence lifelong dietary behaviors and disease risks. The PDHS reports a significant rise in chronic illnesses due to poor nutrition, with over 28% of adult deaths linked to diabetes, cardiovascular disease, and certain cancers. Unhealthy dietary trends are particularly prevalent among Pakistani university students, with more than half already overweight or obese (NIPS & ICF, 2019). If these patterns persist, they will lead to substantial future individual and socioeconomic burdens from preventable diseases.

Nutrition education interventions targeting student wellness primarily address obesity but are largely ineffective, failing to address fundamental determinants of real-world choices (Amjad et al., 2022). Recent studies emphasize ignored cultural, socioeconomic, psychosocial, and environmental influences on dietary choices. For instance, Pakistani

research indicates patriarchal restrictions disproportionately hinder female students' access to nutrients compared to male peers, reflecting sociocultural inequalities (Iqbal & Zaidi, 2022).

Investigating students' perceptions of community factors influencing consumption is essential for developing tailored, sustainable programs. Strengths-based, culturally congruent frameworks can facilitate long-term, healthier lifestyle changes (Schepens Niemiec et al., 2021). A university-based survey study could clarify the dynamics shaping eating behavior patterns.

Pakistan's obesity and NCD epidemic stems from complex sociocultural factors, necessitating research that addresses distinctive cultural, economic, and gender barriers. Universities offer prospects for cross-sectional analysis of diverse youth cohorts. Globally, strengths-based approaches aligned with indigenous socioecological factors have optimized health behaviors through sustainable individual and systemic changes (Schepens Niemiec et al., 2021). Pakistan's rising financial burden from treating diet-related NCDs among unproductive youth jeopardizes socioeconomic advancement, demanding urgent evidence-based action (Ahmad & Anwar, 2023).

Investing in youth health and well-being is crucial for national progress as it boosts economic growth through a productive workforce and reduces healthcare costs from NCDs. Pakistan's demographic of 60% of youth bulge, over half of the youth, are overweight or malnourished, increasing the risk of NCDs; emphasizing the need to study eating behaviors among university students can lead to culturally relevant interventions, safeguarding the future leaders and reshaping the national dialogue.

Quantitative research targeting specific populations can improve public health by revealing overlooked insights and optimizing resources. Pakistan's nutritional crisis requires urgent action, and a cross-sectional quantitative study involving diverse students can provide culturally relevant community insights (Machado et al., 2023). This research aims to inform policy through sustainable, local insight-led approaches addressing root causes rather than superficial ones. The WHO Global NCD Action Plan 2013-2020 shows that such strategies can more effectively reduce chronic diseases through individual and systemic changes (WHO, 2013). Given the rising costs of preventable illnesses and limited healthcare access, urgent action is essential. Understanding the influences affecting Pakistani students' nutrition can transform national dialogue and save lives and resources. Ignoring this crisis risks perpetuating suffering and a societal burden

The literature shows the necessity of university-centered research to uncover hidden drivers to curb Pakistan's preventable public health crisis and foster long-term public health solutions. This research will provide empirical evidence to inform policies and interventions, establishing links between mental healthcare access and health and socio-economic outcomes, promising population health success through prevention and resilience.

### 1.3. Significance of the Study

Previous research, such as Biag (2018), emphasized biomedical factors in obesity among Pakistani youth, overlooking cultural intricacies. This study addresses that gap by integrating local viewpoints to comprehensively understand the psychological, social, economic, and environmental impacts on nutrition. It stresses the significance of collective

societal meaning-making in confronting and surmounting systemic obstacles (Mohamed, 2017).

This study examines burnout, quality of life (QoL), and eating habits in Pakistani university students, emphasizing mental health and well-being. Burnout, marked by chronic exhaustion, cynicism, and diminished performance, adversely affects academic success and QoL. It explores burnout's impact on dietary habits (Chui et al., 2019) to inform interventions that reduce burnout and encourage healthier eating among students.

Quality of life significantly impacts students' well-being, and examining its relationship with eating behaviors is crucial for understanding student health. University life introduces stressors that can affect QoL. This study investigates the link between quality of life and eating behaviors to identify factors influencing students' dietary habits (Karunanayake et al., 2020). The results can guide evidence-based interventions and support systems for university students in Pakistan, improving their overall quality of life.

University transition offers chances to optimize health behaviors, but limited research exists on nutritional determinant perspectives among vulnerable subgroups like women (Barlett et al., 2018; Wagner et al., 2020). Investigating diverse views can inform culturally grounded programs that foster sustainable behavior change, providing insights for initiatives promoting healthy lifestyles in emerging adults. Tackling obesity in Pakistan impacts individual and national development by preventing disease burdens and costs (Global Obesity Observatory, 2024).

This research contributes to understanding the relationships between burnout, QoL, and eating behaviors in Pakistani university students. The study's outcomes are expected to

guide interventions, support, and policies that improve student well-being, encourage healthy eating, and create a supportive campus environment, ultimately enhancing students' health, success, and societal impact.

### 1.4. Hypothesis

Hypothesis1:

- Null Hypothesis (H0): Burnout does not significantly affect the eating behavior patterns of university students in Pakistan.
- Alternative Hypothesis (H1): Burnout significantly influences the eating behavior patterns of university students, leading to specific dietary choices and habits.

Hypothesis 2:

- Null Hypothesis (H0): The quality-of-life indicators of university students in Pakistan are not associated with their eating behaviors.
- Alternative Hypothesis (H2): There is a significant relationship between the quality-of-life indicators of university students in Pakistan and their eating behaviors, with a higher quality of life correlating with healthier dietary choices and eating behavior patterns.

### 1.5. Research Aims and Objectives

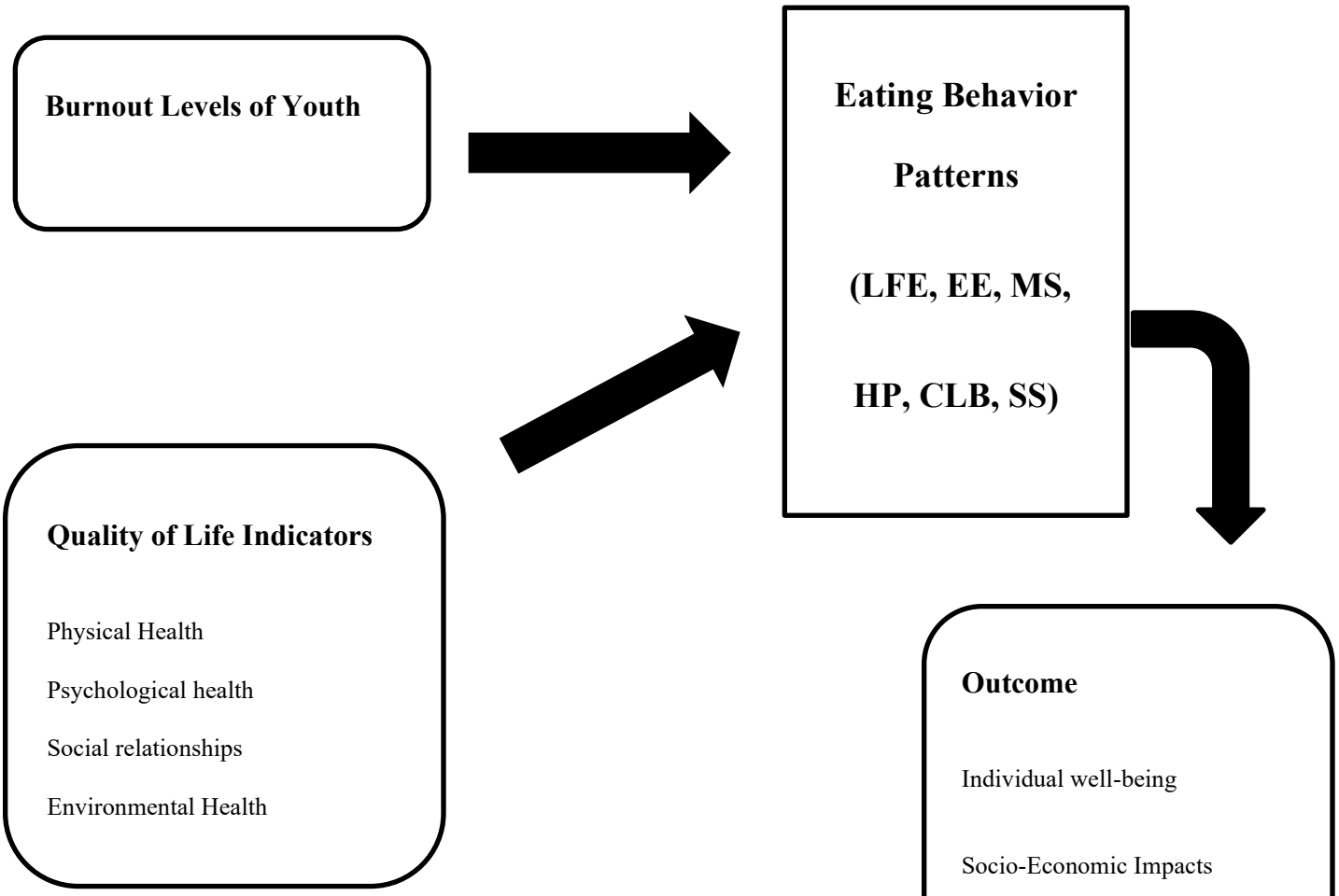
1. Investigating the relationship of Burnout on the Eating Habits of University Students in Pakistan

2. Examining the Relationship Between Quality-of-Life indicators and Eating Behaviors of University Students in Pakistan

**Conceptual Framework**

The variables studied were as follows:

- Burnout (IV)
- Quality of Life (IV)
- Eating behavior Patterns (DV)




This conceptual framework aims to illustrate the potential rel variables in the proposed research and explore the factors influencing eating behaviors

among Pakistani university students. Based on previous literature, the independent variables of burnout and quality of life were hypothesized to impact students' dependent variables of dietary intake patterns and eating habits. Burnout has three main dimensions: emotional exhaustion, cynicism, and academic efficacy. Quality of life encompasses physical, psychological, social, and environmental well-being. The framework also includes several possible mediating variables, such as age, gender, socioeconomic status, residential status (living in a hostel vs. at home), and level of education, that could influence or help explain the relationships. It is proposed that these independent and mediating variables interact with each other to influence eating outcomes. The framework depicts the study methodology, which utilizes a quantitative cross-sectional design incorporating quantitative surveys to assess levels of burnout, quality of life, and eating behaviors to explore participants' experiences and perceptions. Finally, the framework outlines the proposed analysis and envisions the outcomes of informing interventions and healthy eating programs on campus. This conceptualization aims to map the study's key constructs and variables visually.

### 1.6. Research Questions

1. Does burnout affect the eating habits of Pakistani university students?
2. What is the relationship between the quality of life of university students in Pakistan and their eating behaviors?

### 1.7. Research Strengths and Limitations

The key strength of this quantitative investigation lies in its comprehensive, multi-level approach to uncovering the complex, interactive determinants of dietary patterns among

the youth. By examining cultural, social, and shared environmental factors, this study promises to yield a nuanced, contextually grounded understanding of the route drivers shaping real-world nutritional behaviors. This holistic perspective stands in contrast to prevailing interventions narrowly focused on individual-level knowledge or motivation, which have proven to be limited in their long-term impact.

Moreover, studies focusing on diverse university communities offer valuable population-level insights that can inform tailored community-based solutions. Capturing the heterogeneous experiences of students from various geographic and cultural backgrounds enabled the research team to uncover overarching trends and context-specific dynamics. This granular understanding is essential for developing interventions sensitive to distinct campus environments' unique needs and assets.

However, one notable limitation of this study is its lack of focus on parental influence on young adults' eating behaviors. While the research provides significant insight into the psychosocial environmental factors affecting dietary patterns, it does not account for the potential impact of parental attitudes, behaviors, and home environment on students' nutritional choices. Future research should consider incorporating these variables to provide a more comprehensive understanding of the factors influencing eating behaviors among university students.

### 1.8 Linkage with Sustainable Development Goals (SDGs)

The proposed research can study the impact of burnout, quality of life indicators, and eating behavior patterns among university students in Pakistan, which can be related to the

objectives of the discipline of Development Studies and the Sustainable Development Goals (SDGs).

Development studies have focused on understanding and addressing the social, economic, and environmental challenges communities and societies face. It aims to promote sustainable development and improve the well-being of both individuals and communities. Research on burnout, quality of life indicators, and eating behavior patterns among university students in Pakistan aligns with these objectives in several ways.

**Sustainable development goal 3: Good health and well-being**. This study contributes to SDG3 by examining the factors that affect the well-being and health outcomes of university students in Pakistan. By understanding the relationship between these variables, interventions can be developed to promote healthier lifestyles and improve students' overall and mental well-being.

**Sustainable Development Goal 4: Quality Education:** This research can also be linked to SDG 4, which focuses on ensuring inclusive and high-quality education for all. By studying the impact of these variables on eating behavior patterns among university students, insights can be gained into the challenges students face in maintaining a healthy lifestyle amidst their educational pursuits. This knowledge can inform educational institutions and policymakers in developing supportive environments that enhance student's overall educational experience.

### 1.9. Organization of Thesis

Chapter 1 analyzes the impact of social and psychological factors on eating habits, outlining research goals and essential questions and underscoring its significance in psychology, mental health, public health, social work, and youth health education. It ends with a brief overview of the thesis structure, summarizing the following chapters.

Chapter 2 comprehensively reviews the literature on youth eating behaviors and their health and well-being outcomes. It critically examines Social Cognitive Theory, outlines selected quantitative research methods, and assesses global empirical studies, identifying research gaps in the Pakistani context. The chapter concludes by summarizing key insights from the literature review.

Chapter 3 details the research design and methodology, explaining the study's execution, contextualizing it within Pakistani youth culture, identifying key variables, and framing data collection and analysis. It explicates the sampling technique to ensure representation and validity through structured surveys and concludes by describing the data analysis method for reliable interpretation.

Chapter 4 examines empirical findings, interpreting data to elucidate the link between youth eating behavior, quality-of-life indicators, and burnout. Key findings highlight burnout in social relationships and psychological health, indicating that quality-of-life factors significantly impact youth eating patterns. This section also transparently addresses challenges in data collection and analysis.

Chapter 5 integrates research findings, tackling the initial aims and inquiries. It delves into broader impacts in psychology, mental health, public health, social work, and health education, proposing policy suggestions for addressing Pakistan's preventable health crisis.

By highlighting underrecognized factors, it aims to foster enduring improvements in population health via prevention and resilience. Additionally, it charts potential future research paths, mainly regarding behavioral patterns in Pakistan, offering a detailed summary of the study's contributions and prospective trajectories.

# CHAPTER 2: LITERATURE REVIEW / THEORETICAL BACKGROUND

## 2.1. Introduction

The literature review aimed to explore the current knowledge regarding the critical variables involved in the conceptual framework guiding the study. Specifically, this study explores the impact of academic burnout and quality of life on eating behavior patterns. The United Nations defines youth as individuals between the ages of 15 and 25, a critical period of physical, cognitive, and psychosocial maturation in Pakistan (United Nations,2023). Existing literature suggests a significant association between high levels of academic burnout and unhealthy eating habits among this population. Unhealthy eating behaviors, such as increased consumption of fast food, sugary snacks, and irregular meal patterns, are prevalent among students experiencing burnout (Chui et al., 2019).

Moreover, the stress experienced by students may lead to emotional eating or unhealthy coping mechanisms such as binge eating. Additionally, academic burnout can contribute to decreased self-regulation and increased impulsivity, further influencing eating behavior patterns. The literature also emphasizes the relationship between quality of life and eating behavior patterns. Individuals with higher overall well-being and better quality of life are more likely to engage in healthier eating behaviors, such as consuming a balanced diet, practicing portion control, and engaging in regular physical activity (Risti et al., 2021). Conversely, individuals with lower quality of life may be more likely to adopt unhealthy eating patterns.

The multidimensional nature of QOL, encompassing physical health, psychological well-being, social support, and environmental factors, has been highlighted in the literature. Factors such as social support and access to healthy food options were identified as influential in promoting healthier eating habits among the youth.

To address this gap in the literature, the proposed quantitative study aimed to provide empirical evidence on the impact of burnout and quality of life on the eating behavior patterns of youth in Pakistan. The study employed a rigorous research design, with a large and diverse sample size, objective measurement of variables, and quantitative analysis techniques. By quantifying the associations and potential causal relationships, this study aimed to enhance the understanding of the factors influencing eating behavior patterns in this population. These findings can inform the development of targeted interventions and strategies to promote healthier eating habits and improve overall well-being among youth in Pakistan.

The nutrition and well-being of youth, particularly university students, are crucial for their academic success, personal development, and overall progress of a nation. As future leaders and changemakers, youth play a vital role in shaping a country's social, economic, and political landscape. However, the challenges this demographic faces, such as academic pressure, stress, and burnout, can significantly impact their overall quality of life and eating behaviors (Rajput, 2024; Resimo et al., 2024).

The research topic aligns with the United Nations SDGs, particularly SDG 3 (Good health and well-being) and SDG 4 (Quality Education), ensuring that university students' proper nutrition and well-being are essential for their individual growth and contribute to the

broader development agenda. Improved eating habits and a higher quality of life among youth can lead to better academic performance, enhanced cognitive abilities, and a reduced risk of noncommunicable diseases, ultimately supporting the achievement of these SDGs (Tariq et al., 2022; Matsumoto et al., 2020; Hargreaves et al., 2018).

Multiple interrelated sociocultural, economic, and environmental influences subtler than personal choice alone choreograph population-level nutritional behaviors and outcomes. For instance, access to affordable, nutritious food varies significantly according to socioeconomic status and community resources. Food marketing promotes heavily processed items high in sodium, sugar, and saturated fat (Borges et al., 2020). Mental well-being also impacts eating habits, as stress cortisol stimulates preferences for calorie-dense comfort foods (Wüst & Ruttke Dillenburg Osório, 2022). Cultural traditions and rituals determine cuisines, whereas family/social dynamics guide communal eating. Research on the Kampung Naga in the West Java Province of Indonesia demonstrates how gastronomic rituals are integral to cultural identity and religious ceremonies (Dewantara et al., 2023). Similarly, food is a source of sustenance and a reflection of spiritual and cultural values within Islamic practices (Zamhari, 2023). This concerning trend in mental health among young people has far-reaching consequences, as evidenced by the rising morbidity, mortality, and economic toll associated with these issues.

Evidence suggests that female university students face even more significant nutritional challenges, compounding obesity threats. National surveys report that Pakistani women exhibit nearly twice the obesity prevalence among men (NIPS & ICF, 2019). Cultural factors narrow dietary options as social norms discourage females from consuming certain foods outside their homes. Qualitative interviews highlight the restrictive body ideals

patriarchal family structures encourage (Blum et al., 2019). Financial constraints also impact food security - one local study found that 47% of young females experienced food insecurity in the prior year versus 52% of males (Sheikh et al., 2024). Such gendered dynamics necessitate the consideration of female learners' unique barriers to developing healthy behaviors. Beyond its severe health implications, obesity's impact extends into various societal and economic domains.

Mounting research has linked excessive weight to far-reaching consequences beyond physical wellness. Studies have associated obesity with poorer academic performance, higher absenteeism, and elevated psychological stress/distress among college students; these impacts have profound cost implications (Chen et al., 2020). Overweight and obese youth progress to establish households facing greater lifetime medical expenditures and lost workplace productivity due to obesity-related conditions, such as diabetes (Goettler et al., 2017). From a public health perspective, addressing the drivers of unhealthy weight among society's future workforce is urgently essential.

Comprehensive approaches are required to curb obesity among vulnerable groups such as university women. Merely providing nutritional facts proves insufficient without addressing contextual barriers. Culturally tailored programs empowering students through strength-based perspectives show promise for sustainable change. This study aims to contribute to a timely understanding of such efforts.

Several studies have explored dietary patterns and health among South Asian adolescents and university students. The survey findings on South Asian tertiary learners' diets align with broader research indicating socio-economic disparities in food consumption,

particularly in nutrient-rich foods such as whole grains, fruits, and vegetables (Kang et al., 2021).

A study by Sri Lanka examined the influence on nutrition security. Interviews revealed that university budgets, living arrangements such as hostels, and time constraints shaped food purchases versus home-cooked meals. Students transition from secondary school to university, and their level of autonomy increases, posing ongoing challenges in making healthy food choices. Surveys have linked reduced spending on food to higher stress levels and lower quality of life (Karunanayake et al., 2020).

Researchers conducted in-depth interviews in Bangladesh at two public universities to understand gendered perspectives. Male students reported active lifestyles mitigated junk food intake effects, while females facing patriarchal norms cited sacrificing their diet along with body image concerns drove dieting and restricting food groups (Blum et al., 2019)

Closer to the research setting, a cross-sectional survey of 799 Pakistani households with unmarried adolescents found that 52% had experienced food insecurity in the prior year (Sheikh et al., 2020). Qualitative data have highlighted financial strain as the primary barrier to adequate nutrition (Shuja et al., 2022). The DAWN report tied unhealthy eating patterns to an increased risk of non-communicable diseases in young adults (Ebrahim, 2019). Overall, the existing research underscores the vulnerability of South Asian youth to suboptimal nutrition and lifestyle transitions. However, few studies have explored contextual psychosocial influences beyond financial or gender factors. This study aims to address this gap through an indigenous perspective that integrates emic voices and realities, seeing as how there is a rising NCD prevalence among South Asian youth.

National health surveys across South Asian countries have observed an alarming increase in the prevalence of diet-related non-communicable diseases (NCDs) among tertiary-level student populations. Similarly, in Pakistan, a study of young adults showed a high frequency of poor glycemic control, complications, and high levels of distress among young persons with type 1 diabetes, highlighting the complexity of the demands that these individuals face at an early age (Ghulam et al., 2023). According to Dr. Parmar, in India, the age of onset of type 2 diabetes is shifting towards younger individuals, including adolescents, indicating a potential concern for student demographics (Parmar et al., 2021). A study in West Bengal found considerable risk factors for NCDs among medical undergraduates, including high body mass index (BMI) and prehypertension (Yasmin et al., 2019). These findings suggest that despite their medical knowledge, medical students are not immune to the lifestyle factors that contribute to NCDs. Kessler and Rayman (2024) examined elevated blood pressure among undergraduate students. They found a significant prevalence, suggesting that elevated blood pressure concerns this demographic, especially considering lifestyle factors common among students, such as stress and poor diet. (Kessler & Rayman, 2024). As a result, there are escalating overweight and obesity issues among the younger population.

A meta-analysis of studies from India, Pakistan, and Bangladesh comprising over 227,000 youngsters reported the pooled prevalence of overweight and obesity as 36% for the highest prevalence group and lower in five subgroups labeled subjectively based on decreasing prevalence (Hoque et al., 2014). A systematic review of 300 Bangladeshi children, adolescents, and adults likewise observed that the overweight/obesity rate has risen to 58% over the past decade, with females at a significantly higher risk (Banik & Rahman, 2018).

Scholars assert that shifts towards convenience foods and diets high in saturated fats, sugar, and salt likely underpin expanding waistlines (Kumar Verma et al., 2024; Gulati et al., 2017). These concerns further carry academic and mental health consequences.

Research has also linked suboptimal nutrition among South Asian youths to poorer cognitive outcomes. A study of Indian and Pakistani students found that those with micronutrient deficiencies and anemia had lower standardized test scores than their nourished peers (Mohamed et al. et al., 2021; Igbal et al., 2015). Preliminary work in Pakistan has associated depressive symptoms and anxiety with low-quality diets deficient in proteins and other micronutrients essential for brain development (Khan et al., 2020). These physical, academic, and mental health implications highlight the urgency of optimizing South Asian university students' dietary patterns.

The prevalence of burnout among university students is a growing concern worldwide, with studies indicating that it can have detrimental effects on their physical and mental health and academic and social functioning (Tran et al., 2023; Wei et al., 2021). Burnout, characterized by emotional exhaustion, depersonalization, and reduced personal accomplishment, can significantly impact an individual's eating behavior, leading to unhealthy dietary choices, irregular meat patterns, and even disordered eating (Chui et al., 2019). Understanding the relationship between burnout and eating habits among university students is crucial for developing targeted interventions and support systems to promote overall well-being.

Alongside the impact of burnout, the quality of life of young adults is another crucial factor that can influence eating behaviors. Quality of life encompasses various domains, including

physical, psychological, social, and environmental well-being (WHOQOL Group, 1998). A higher quality of life is associated with healthier dietary choices, regular meal patterns, and a more balanced approach to food consumption (Walker et al., 2023). Conversely, a lower quality of life may contribute to adopting unhealthy eating habits such as emotional eating, binge eating, or consuming energy-dense and nutrient-poor foods as a coping mechanism (Karunanayake et al., 2020).

The Literature review chapter will delve into the theoretical framework, empirical studies, and relationships between the key variables to provide a solid foundation for this research.

### *2.1.1. Theoretical Tradition*

The Social Cognitive Theory (SCT) is a comprehensive framework developed by the renowned psychologist Albert Bandura to understand and explain human behavior (Bandura, 1986). At the core of SCT is reciprocal determinism, which posits that an individual's behavior, personal factors (such as cognition, emotions, and beliefs), and the social and physical environment constantly influence and shape one another bidirectionally (Bandura, 1986). This theory has been widely applied in various fields, including health psychology, education, and organizational behavior (Islam et al., 2023; Middleton et al., 2018)

The comprehensive and multidimensional approach of SCT is particularly well-suited for the proposed study on the relationships between burnout, quality of life, and eating behavior patterns among university students in Pakistan. By emphasizing the reciprocal determinism between personal, behavioral, and environmental factors, SCT provides a

holistic perspective that aligns well with the complexity of the research topic (Bandura, 1986).

Moreover, SCT's focus on cognitive processes offers valuable insights into the psychological mechanisms that shape an individual's behavior. In this study, university students' experiences of burnout and their perceived quality of life (personal factors) may significantly influence their self-efficacy and outcome expectations regarding their eating behaviors, ultimately shaping the development of adaptive or maladaptive eating patterns (Bandura, 1986).

While SCT's strengths are well recognized, the theory has faced some critiques and limitations that warrant consideration. One of the primary criticisms is the theory's potential overemphasis on individual agency and the ability to self-regulate behavior (Martin & Guerrero, 2020). This perspective may not fully account for the structural and systemic barriers influencing health-related behaviors, such as socioeconomic status, access to resources, and institutional policies (Harris et al., 2022).

In the context of the proposed study on university students in Pakistan, it is crucial to consider the broader environmental factors that may shape the eating behavior patterns of this population. Additionally, cultural and social norms within the Pakistani context may play a significant role in shaping students' perceptions, beliefs, and behaviors related to eating, which the SCT framework may not fully capture.

Furthermore, some scholars have argued that SCT's reliance on cognitive processes may overlook the role of unconscious or emotional factors in shaping behavior (Bandura, 1986). In the context of the proposed study, it is essential to acknowledge the potential influence

of emotional and subconscious processes on the relationships among burnout, quality of life, and eating behavior patterns.

Despite the limitations and critiques of SCT highlighted in the previous section, this theoretical framework remains the optimal choice for the proposed research on the relationships between burnout, quality of life, and eating behavior patterns among university students in Pakistan.

First, the comprehensive and multidimensional nature of SCT perfectly aligns with the complexity of the research topic. By acknowledging the reciprocal determinism between personal, behavioral, and environmental factors, SCT provides a holistic lens to examine the intricate interplay of psychological, social, and contextual influences on university students' eating behaviors. This approach is particularly crucial in the Pakistani context, in which cultural norms, socioeconomic conditions, and institutional factors may significantly shape students' perceptions, beliefs, and actions related to their eating habits.

Second, the theory's emphasis on cognitive processes, such as self-efficacy and outcome expectations, offers invaluable insights into the psychological mechanisms underlying the development of eating behavior patterns (Bandura, 1986). In the proposed study, understanding how university students' burnout experiences and perceived quality of life influence their self-beliefs and anticipated outcomes regarding their eating behaviors will be instrumental in unraveling the complex relationships between these variables. This focus on cognitive factors sets SCT apart from other theoretical frameworks that may overlook the role of individual agency and decision-making in shaping health-related behaviors.

Moreover, the concept of observational learning, central to SCT, is particularly relevant in the Pakistani context, where social and cultural influences play a significant role in shaping individual behaviors (Bandura, 1986). By examining how university students' eating behaviors are influenced by their observations and interactions within their social environment, the proposed study can shed light on the contextual factors contributing to the development of adaptive or maladaptive eating patterns.

While critics of SCT's potential over-emphasis on individual agency and the need to consider structural barriers are valid, these limitations can be addressed through a comprehensive research design incorporating complementary theoretical perspectives and a deep understanding of the social, cultural, and environmental factors specific to the Pakistani context. We propose the adoption of a nuanced and multifaceted approach. We can leverage the strength of SCT while addressing its limitations, ultimately providing a more holistic and contextually relevant understanding of the factors influencing the eating behavior patterns of university students in Pakistan.

In conclusion, the critical analysis of SCT and its alignment with the proposed research objectives firmly establish the theoretical framework as the optimal choice for this study. Relationship between burnout, quality of life, and eating behavior patterns among university students in Pakistan. By acknowledging these considerations and integrating complementary perspectives, the current study contributes to a more nuanced and contextually relevant understanding of the psychosocial factors influencing the eating behavior patterns of this population. Incorporating cultural and socioeconomic factors into the research design further enhances the explanatory power of the study. It provides

valuable insights for developing targeted interventions to promote healthier eating behaviors among university students in Pakistan.

### *2.1.2. Methodological Framework*

The proposed study aimed to investigate the impact of burnout (independent variable) and quality of life (independent variable) on eating behavior patterns (dependent variable) among university students, utilizing a quantitative cross-sectional research design. This methodological approach is well-established in social sciences and has been widely employed in previous studies examining the relationships between similar variables (Chui et al., 2023; Chui et al., 2019).

The cross-sectional design is particularly well suited for current research, as it allows for examining the associations between the variables of interest at a specific time (Zuleika & Legiran, 2022). This approach is advantageous in the present study, as it enables researchers to capture the current state of burnout, quality of life, and eating behavior patterns among university students, providing a comprehensive snapshot of the relationships between these variables. It allows for exploring the complex interplay between burnout, quality of life, and eating behavior patterns and identifying potential pathways and mechanisms underlying these relationships.

The existing body of literature in this field further justified the use of a quantitative cross-sectional design. Previous studies have employed similar methodological approaches to investigate the impact of burnout and quality of life on various health-related outcomes, including eating behavior patterns, among university students (Malekzade et al., 2023; Chui et al., 2019). By adopting a quantitative cross-sectional design, the current study

builds upon and extends existing knowledge, allowing for a more comprehensive understanding of the relationships between the variables of interest within the specific context of university students.

Moreover, the cross-sectional approach aligns well with the theoretical framework of SCT, which provides a robust and comprehensive lens for understanding the motivational factors underlying the relationships between burnout, quality of life, and eating behavior patterns (Torkan et al., 2018; Woo et al., 2017). By employing a quantitative cross-sectional design, researchers can effectively capture the associations between these variables and explore the potential mechanisms through which SCT-based factors such as autonomy, competence, and relatedness may influence the development of both adaptive and maladaptive eating behaviors among university students.

Despite the strengths of a quantitative cross-sectional design, it is essential to acknowledge its limitations. One of the primary drawbacks of this approach is its inability to establish causal relationships between the variables. Since the data are collected at a single point in time, researchers cannot infer the direction of the relationships or determine the temporal precedence of the variables. (Zuleika & Legiran, 2022). Additionally, the cross-sectional design is susceptible to potential confounding factors and the influence of unobserved variables, which may impact the observed associations (Khan & Mobin, 2023).

Despite these limitations, the quantitative cross-sectional design remains the most appropriate and feasible approach for current research. Examining the relationships between burnout, quality of life, and eating behavior patterns among university students is a complex and multifaceted endeavor, and the cross-sectional design provides a solid

foundation for understanding the current state of these variables and their interrelationships. Furthermore, the findings of this study can inform the development of longitudinal research designs, which can subsequently address the limitations of the cross-sectional approach and provide deeper insights into the causal mechanisms underlying the relationships between the variables of interest.

In conclusion, the proposed quantitative cross-sectional research design is a well-established and widely used methodological approach in the social sciences, particularly examining the relationships between burnout, quality of life, and health-related outcomes such as eating behavior patterns. While acknowledging its limitations, the cross-sectional design is the most appropriate and feasible approach for the current study as it allows for a comprehensive examination of the associations between the variables of interest, aligns with the theoretical framework of SCT, and provides a solid foundation for future research. The findings of this study will contribute to the advancement of knowledge in this critical area of research and have significant implications for the development of effective interventions and support services to promote the overall health and well-being of university students.

### *2.1.3. Empirical Studies on the Subject*

**Eating Behavior Patterns and Psycho-Social-Environmental Factors**

Research exploring the intersection between university students, quality of life QOL, and dietary choices remains limited, although nutrition significantly affects well-being. Existing quantitative, cross-sectional evidence provides initial insight into this relationship while illuminating gaps requiring further examination.

Studies across Western countries using validated QOL surveys have found that self-reported life satisfaction positively correlates with healthier eating patterns. For instance, Aravena et al. (2020) linked higher QOL ratings among 550 young Chilean adults to more excellent fruit and vegetable consumption and less fast food and sugary drink intake. Kaur and Agarwal (2022) detected QoL nutrition associations in similar samples.

Limited cross-sectional work has also touched on cultural factors, albeit with narrow sample sizes. Alzahrani et al. (2020) observed moderate psychological QoL-associated irregular habits divergently from deficient/high groups among medical students.

While some studies show that cultural beliefs may mitigate unhealthy eating under stress, Demirchyan and Aslanyan (2019) revealed that despite adequate knowledge about unhealthy food choices in Armenia, cultural factors such as taste preferences, peer influence, and food availability play a significant role in adolescence eating behavior.

Future research to contextualize quantitative experiences within diverse populations could elucidate dynamic SQL dietary patterns and provide tailored support globally. Additional non-Western surveys should be conducted to address the deficiencies in Western evidence. Ultimately, culturally sensitive examinations are needed to elucidate better the maintenance of health-promoting nutrition amid stressors. Though nascent, exploring intersections between student well-being, eating behaviors, and culture holds promise in optimizing tertiary education outcomes at this critical life stage.

Student Burnout is a widespread issue that affects well-being in academic institutions worldwide. Characterized by emotional exhaustion, cynicism, and reduced efficacy (Maslach et al., 2001), burnout develops when study demands outweigh resources over an

extended period. Their psychological and physiological consequences have serious ramifications. A wealth of research links burnout to maladaptive coping styles, such as unhealthy dietary behaviors, which may exacerbate health risks over time (Lee et al., 2021). However, the relationship between burnout and eating patterns remains underexplored, particularly in cultural contexts.

International evidence suggests that burnout is associated with a less nutritious student diet. Studies conducted in the United States, Canada, and the United Kingdom have consistently reported higher burnout predictive of consuming more fast food, Snacks, and sugar-sweetened beverages coupled with decreased fruit and vegetable intake (Chui et al., 2019; Wattick et al., 2018; Papier et al., 2014). Orihuela et al. (2017) propose that burnout promotes stress-induced eating of highly palatable, readily available foods as an emotional regulation strategy. Nonetheless, regional variations also exist.

The Pakistan National Nutritional Survey reports university-aged youth deviating from fiber-rich traditional diets high in legumes, lentils, and seasonal produce toward imported processed snacks and sugary beverages correlated with long-term weight gain and disease risk (Pakistan National Nutritional Survey, 2018; Saghir et al., 2023). Whether burnout exacerbates detrimental dietary transitions merits further investigation.

Collectively, research establishes that burnout negatively impacts student wellness globally, as well as cultural divergences and eating behaviors as a coping response. Further, contextualized Pakistan-based studies are warranted to inform targeted healthcare strategies to support student flourishing.

Mani et al. (2020) and Dakanalis et al. (2023) found that psychological health is an essential factor that influences eating behavior patterns in young adults. The studies show that individuals with poor psychological health are more likely to engage in unhealthy eating behaviors, such as binge eating and emotional eating, as a coping mechanism for stress. In contrast, individuals with good psychological health tend to have better eating habits and consume a more balanced diet.

Studies by Gilmour et al. (2020) and Risti et al. (2021) have found that social relationships significantly shape eating behavior patterns among young adults. The study showed that family and peer influences can impact individuals' food choices and eating habits. In addition, social support has been linked to better dietary adherence and health outcomes in young adults. Almalki et al. (2021) found that environmental factors such as access to healthy food options can influence young adults' eating patterns. The study showed that individuals in food deserts or areas with limited healthy food options tend to consume unhealthy diets.

Similarly, a lack of physical activity opportunities and sedentary behavior have been linked to poor dietary habits and weight gain. A study by Naeem et al. (2022) found that quality of life is an essential determinant of eating behavior patterns among young adults. Studies have indicated that individuals with higher quality of life tend to have better dietary habits and healthy outcomes. Furthermore, poor dietary habits and unhealthy eating behaviors have been linked to lower quality of life in young adults.

**Prioritizing Youth Wellness: Safeguarding Pakistan's Future**

Globally, the health and well-being of young people are vital for the progress of our nations. Investing in the holistic development of this demographic holds the key to unlocking a country's true potential across multiple fronts.

First, human capital formation is intrinsically linked to youth health and education. Healthy, educated youth grow to become a productive workforce, driving economic growth. The World Bank reports that health improvements, particularly in adult survival rates, are crucial for enhancing labor productivity and economic output, demonstrating that investments in health can yield substantial economic returns (World Bank, 2023). Ensuring the physical and mental well-being of young people is paramount for building a thriving, future-ready human capital base.

Furthermore, a nation’s economic productivity is heavily influenced by the health status of its youth population—preventable diseases stemming from poor nutrition. Lifestyle can significantly impair work capacity, absenteeism, and overall workplace productivity. The global economic impact of overweight and obesity is projected to reach $4.32 trillion annually by 2035, which is approximately 3% of global GDP. This increase is attributed to rising obesity rates, with over half of the global population expected to be overweight or obese by 2035 (World Obesity Federation 2023). Therefore, privatization of youth wellness is a strategic investment in a country's economic prosperity.

Healthcare expenditure is another area where youth health plays a pivotal role. Addressing preventable chronic conditions early congealed substantial long-term savings for overburdened public health systems. A study by the Pakistan Ministry of National Health Services found that the annual cost of treating diabetes, cardiovascular diseases, and

common cancers in the country exceeded $3 billion (Kazmi et al., 2022). Proactive interventions targeting university aid students could significantly elevate this financial strain and Pakistan's health care system.

Social cohesion and stability within a country are heavily influenced by youth well-being. Healthy young people are more likely to contribute positively to their communities, fostering a sense of belonging and civic participation. Conversely, youth crippled with physical or mental health challenges may become isolated, disenfranchised, and susceptible to risky behaviors that undermine social harmony. Investing in youth wellness is a strategic investment in a nation’s long-term stability and resilience.

Finally, the demographic dividend- the economic growth potential that can arise from shifts in a population's age structure with fewer dependent young and old people and more working-age adults–is heavily contingent on the health and productivity of the youth population. Healthy, educated young people are better positioned to drive innovation, entrepreneurship, and economic progress and have immense potential for national development. Pakistan's youth bulge, with over 60% of the population under the age of 30, presents a unique window of opportunity, but only if their health and well-being are prioritized (Pakistan Bureau of Statistics, 2018)

In Pakistan, the urgency to address the escalating obesity crisis among university students is further amplified by the country's demographic landscape. With a median age of just 22.8 years, Pakistan’s population is predominantly young, presenting both challenges and opportunities (Pakistan Bureau of Statistics, 2018). Ensuring the physical and mental well-

being of this demographic is crucial for harnessing the nation's demographic dividend and for propelling sustainable development.

The Pakistan Demographic and Health Survey (PDHS) revealed that over 28% of adult mortality is attributed to conditions, such as diabetes, cardiovascular disease, and certain cancers. Many are preventable through early intervention (NIPS & ICF, 2019). Disturbingly, the survey also found that over half of the youth population was already overweight or obese, indicating that the future individual and socioeconomic burdens of prevailing patterns remain unaltered.

To address this crisis, a robust quantitative investigation centered on universities holds immense potential. By uncovering the complex, contextually rooted determinants of eating behaviors among youth, researchers can empower community and culturally congregant solutions that tackle root causes rather than superficial factors alone. Such an approach promises to transform national dialogue and catalyze sustainable, scalable interventions that safeguard the health and well-being of Pakistan's future leaders and workforce.

## 2.2. Research Gap

The identification and exploration of research gaps is crucial for advancing scientific knowledge and informing future studies in the context of the impact of burnout, quality of life, and eating behavior patterns among university students in Pakistan, several significant research gaps exist, offering opportunities for further investigation.

One notable research gap pertains to the limited understanding of the specific mechanisms through which burnout influences eating behavior patterns among university students in

Pakistan, while previous studies have established a relationship between burnout and negative health outcomes, including unhealthy eating behaviors, there remains a dearth of research examining the underlying processes and factors of this association in this demographic population (Chui et al., 2019). A comprehensive exploration of these mechanisms would provide valuable insights into the psychological, social, and environmental determinants that drive the relationship between burnout and eating behaviors enabling the development of targeted interventions and support strategies.

Additionally, there is a paucity of research focusing on the role of quality-of-life indicators in shaping the eating behavior patterns of university students in Pakistan, while quality of life has been acknowledged as a significant factor in students Overall well-being, limited attention has been paid to its influence on dietary choices and habits (Karunanayake et al., 2020). Understanding the specific dimensions of quality of life that impact eating behavior patterns such as social support, physical environment, and psychological well-being would allow for the development of comprehensive interventions that consider the multifaceted nature of student's experiences and promote healthier eating behaviors.

Lastly, existing literature lacks studies that address the cultural and contextual factors unique to the Pakistani university student population. For instance, Sugara et al. (2020) discussed the quality of life and burnout among students without focusing specifically on cultural factors that may influence these outcomes. Similarly, Chui et al. (2019) examined the association between burnout, eating behavior traits, and food intake without a cultural lens. While informative, these studies did not directly address the cultural context of Pakistani university students. Cultural norms, Societal Pressures, and environmental factors vary across different contexts, and their influence on burnout, quality of life

indicators, and eating behaviors may differ between Pakistan and other countries. By conducting research specific to the Pakistani context, a more nuanced understanding of cultural and contextual factors at play can be achieved, facilitating the development of culturally sensitive interventions and strategies tailored to the needs of Pakistani university students (Chui et al., 2019; Sugara et al., 2020).

Addressing these research gaps is of significant academic importance as it contributes to the existing literature and expands our understanding of the complex interactions between burnout, quality of life, and eating behavior patterns among university students. Moreover, filling these gaps has practical implications as the findings can inform the development of evidence-based interventions, policies, and support systems that effectively promote healthier lifestyles and well-being among university students in Pakistan. By highlighting the research gaps and emphasizing their significance, this study can advance knowledge in the field and serve as a catalyst for future research...

## SUMMARY OF RESEARCH WORK

This research study focuses on understanding how psychosocial factors shape Pakistani youths' eating patterns. Motivated by my background in behavioral sciences and personal experiences related to burnout and eating patterns, the researcher aimed to explore the relationship between them. Academic burnout, quality of life, and eating behaviors.

A quantitative approach was used, and a structured questionnaire incorporated existing scales to measure relevant variables. This method allowed for a comprehensive exploration

of participants' experiences. The researcher's familiarity with the variables' experiences helped create a comfortable data collection environment.

The data collection process involved 382 participants representing a diverse range of perspectives. Stratified random sampling was conducted in Islamabad, Pakistan, to ensure the inclusion of participants from different educational backgrounds. Informed consent was obtained from all participants.

The analysis was rooted in social cognitive theory, and statistical analysis was performed using SPSS. Techniques such as bivariate correlation, T-test, and one-way ANOVA were employed to examine the relationships between variables and interpret participant responses.

This study contributes to understanding how academic burnout and quality of life impact eating behavior patterns among Pakistani youth. The findings shed light on the psychosocial factors influencing these behaviors and provide insights for developing interventions and strategies to promote healthier eating habits and overall well-being among this population.

This study revealed significant insights into the eating behaviors of university students in Pakistan, highlighting the impact of burnout on quality of life. Higher levels of burnout were associated with unhealthy eating patterns, such as emotional eating, haphazard planning, and meal skipping. In contrast, a higher quality of life was correlated with healthier dietary choices. Including low-fat eating and reduced emotional eating, gender differences showed that males were more likely to engage in low-fat eating, sweets, and snacking. In contrast, females were more prone to emotional eating and haphazard

planning. Educational level differences indicated that MS students exhibited healthier eating behaviors than BS students. Additionally, married individuals and day scholars have demonstrated healthier eating habits than their single ones. These findings emphasize the importance of addressing psychological and social factors to promote healthier eating behaviors and enhance the overall well-being of university students.

# CHAPTER 3: RESEARCH DESIGN AND METHODOLOGY

This chapter examines the research design and methodology of the study and how the collected were analyzed. The first paragraph discusses the site where the research took place. The second paragraph discusses the approaches used to collect, analyze, and interpret the data. The third paragraph gives the details about determining the population and the sample size. Next, this chapter discusses the relevant steps of data distribution variables and the tools used to analyze the data. This chapter concluded with all the ethical considerations considered when conducting this study.

## 3.1. Quantitative Study

The quantitative method is the best choice for the study of eating behavior patterns among university students in Pakistan because it allows for the systematic collection and analysis of data from a large sample, ensuring the results are statistically significant and generalizable by using structured questionnaires and established scales such as the MBI SS, WHO-QoL brief and EBPQ, it can objectively measure variables like burnout quality of life and eating behaviors. This approach allows us to identify patterns, correlations, and potential causes. Identify patterns, correlations, and potential causal relationships with high precision. Additionally, quantitative methods facilitate using advanced statistical techniques to control for confounding variables and test hypotheses, providing robust evidence to support the findings. This rigor and objectivity are crucial for developing evidence-based recommendations and interventions that can be effectively implemented to improve university students' well-being and dietary habits.

### 3.2. Study Area

The proposed study was conducted among university students in Islamabad, the capital of Pakistan. Islamabad, due to the population density and heterogeneity of the people across the various socioeconomic, literacy, and ethnic classes, is optimum for this study (Sha & Khattak, 2020; Raza & Awang, 2020; Javed et al., 2020). The shuffling of students in this city increases the generalizability of the results of this study to Pakistani students.

Islamabad acts as a cultural melting pot, with inhabitants from all over Pakistan immigrating to the city. This ensures that the student population across educational institutions is drawn from varied cultural backgrounds, allowing insights into different traditions and their influence on behaviors. Islamabad is also the hub of higher education in Pakistan. Housing numerous public and private universities that enroll students from diverse regions nationally. Making it an excellent setting to explore the research questions related to burnout, quality of life, and eating behaviors among university students.

Islamabad is a planned city focusing on urban planning and infrastructure development. The city is divided into different sectors and zones, with the main university campuses located in the heart of the city, easily accessible to students from diverse backgrounds (Minallah, 2023). This strategic placement of educational institutions within the urban landscape provides an opportunity to examine the potential influence of the local environment on the phenomena under investigation.

According to the 2017 census, the city's population was approximately 2 million individuals, although it is likely that this number has increased since then. Most of the city's inhabitants belong to the middle and upper-middle classes.


Figure 1.1: Map of Universities in Islamabad, Pakistan

The selection of Islamabad as the primary study area is well-founded due to its reputation as one of the most erudite cities in Pakistan. By boasting a higher literacy rate when contrasted with other urban centers in the nation, a substantial portion of Islamabad's inhabitants possess advanced degrees and are engaged in scholarly pursuits (Askari et al., 2022). Figure 1.1 from Google Maps illustrates the location of various universities in Islamabad (Google,2024). This advantageous characteristic facilitates the recruitment and accumulation of data from participants who are more likely to comprehend inquiries, consent forms, and complete standardized tools involving reading and writing. This unique attribute of Islamabad's populace aligns admirably with the primary objective of the proposed research, which focuses on university students, guaranteeing the accessibility of a multifaceted and representative sample. Thus, Islamabad can be regarded as the most suitable context for studies aimed at the university student population of Pakistan because

of its blended characteristics that signify national demographics, culture, and education environment.

### 3.3. Sampling Technique and Sample Size

Islamabad has several public and private universities (Higher Education Commission, 2021). Regarding the sampling technique for this research, to sample the targeted universities in Islamabad representatively, a stratified random sampling technique was adopted and used to recruit participants from amongst the student populace of the said universities. This method is most appropriate for the proposed research as it helps to obtain heterogeneous samples of the students considering their gender and their year level (Iqbal et al., 2020). Initially, universities offering both Bachelor of Science (BS) and Master of Science (MS) courses were selected to include the opinions of young students. These universities also admit different individuals from different economic statuses; two are private, and two are public universities. The study can give the findings of the factors experienced by such students if it gathers ideas from students of diversified SES status. The universities' names have been deliberately withheld to ensure that the institutions involved are not identified. The participants were selected according to their willingness to participate in the study. Table 1 below explains the sample distribution amongst the four selected universities.:

**Table 1** ***Distribution of Study Sample***

| **University** | **Population** | **Sample** |
|---|---|---|
| A (Public) | 1000 | 110 |

| | | |
|---|---|---|
| B (Public) | 800 | 108 |
| C (Private) | 300 | 59 |
| D (Private) | 600 | 105 |
| Total | 2700 | 382 |

The purpose of this study is to enlist a sample of 382 university students. The sample size was calculated using the Rao Software with a significance level of 0.05, and the minimum number of participants needed was roughly 382.

Wu et al. (2019) synthesize evidence that diet quality and dietary behavior are positively associated with various domains of HRQoL in children and adolescents. Burnout demonstrates that inadequate eating habits, Such as insufficient fruit consumption and skipping breakfast, negatively affect the QoL of adolescents with obesity, further deteriorating physical health perceptions. Tehrani and Pourabbasi (2020) show that certain eating behaviors independent of BMI can significantly improve adolescent QoL.

Antwi et al. (2024). Identify barriers to healthy eating, such as stress and limited food variety on campus, which could be exacerbated by burnout. Reuter et al. (2020) and Resimo et al. (2024) link eating habits to academic performance, suggesting that stressors impacting performance might also influence eating behaviors.

Thus, the current study seeks to contribute to this line of research by focusing on a target population of 382 university students drawn from various fields of study. Moreover, offer more concrete and generalizable results than studies involving fewer subjects.

The large sample size will improve statistical sensitivity to detect minor effects and analyze gender as a moderating variable. Second, increasing the number of university students involved in the study and expanding the coverage of university disciplines will also improve the generalizability of the findings on the sample coverage of the other university students in the region.

The data collection process was carefully planned and executed to ensure a high response rate and minimize the risk of missing data. The researchers employed various strategies, such as providing incentives, scheduling data collection sessions at convenient times, and offering English versions of the questionnaire to maximize the participation and engagement of the target population.

By adopting a sample size of 382 university students, the current study will contribute to the existing literature by providing valuable insights into the relationships between burnout, quality of life, and eating behavior patterns among this population. The findings have practical implications for developing targeted interventions and support services to promote the overall well-being of university students in the local context.

The targeted population was stratified by university type (public vs private) in Islamabad, Pakistan, which approximately reflects the higher education landscape of the private-public mix (HEC, 2021). Through randomization, each stratum has an equal probability of selection, addressing potential sector difference

Next, two universities were randomly selected from a public stratum and two from a private, providing four sampling frames. Within selected universities, degree programs and years of study were proportionally represented by randomly selecting and inviting all

students to choose classes, which helped to achieve the desired sample size. The following were the inclusion criteria for the study.

Enrolled as a full-time undergraduate or graduate student at a university in Islamabad.

- Aged 18 years to 25 years.
- Informed consent

Students who are currently receiving treatment for mental health conditions or have a diagnosed eating disorder were excluded from the study to avoid potential confounding factors.

Islamabad was chosen as the research area, and various factors supported it. Firstly, Islamabad comprises a heterogeneous university student population from various socioeconomic backgrounds, academic disciplines, and cultural identities. (Raza& Awang,2020). The study aimed to capture the opinions of students from various regions of Pakistan to increase the generalizability of the findings. This is because the study categorized the participants according to the subgroups of the target population, and the selection of individuals from each subgroup ensured that the study findings could be generalized to the sample participants' entire population (McEwan, 2020). The adopted method was meant to establish the general trends of Pakistani university students' behaviors with credibility and to ensure that the data is gathered from a broad and diverse sample student population from Islamabad.

Second, how the target sample was determined protects against selection bias and maximizes the generalizability of the study by employing a stratified random base sample

technique (Imrey et al., 1979; Omair, 2014). This sampling technique has been used in earlier research that examined burnout, quality of life, and eating behaviors (Zhang et al., 2017; Ferreira & Zaia, 2023; Ljubičić et al., 2023). Such a methodological choice ensures that the segmented pieces' findings are analyzed to reveal broader contextualization.

The rationale of this study is to examine burnout, quality of life, and eating behavioral profiles among university students in Pakistan. It also ensures that every student in the target population has the same possibility of being selected, hence having the actual cross-sectional sample of the large population of students. This minimizes bias and handsome generalizability and allows for statistical inference. The findings of this study can be applied to inform policies, interventions, and support systems for university students in Pakistan, making random sampling an appropriate and valuable approach for this research. For the quantitative method, the sample size was calculated using Rao software to remain adequate with a 95% confidence level and enough to generalize the study's findings.

### 3.4. Data Collection Method

The data collection for this study was conducted through a self-administered questionnaire survey as the population was educated. The survey instrument was distributed to the selected participants in person at their respective university campuses in Islamabad. The questionnaire was comprised of the following sections:

#### Demographic Sheet

The demographic sheet contained all the important questions useful for the research. The purpose was to get more detailed information about the participants. The demographic

sheet included Age, gender, marital status, education, and residential status (Day scholar, Host elite), which was collected to examine their potential influence on the dependent variables. Understanding the role of these factors is crucial, as previous studies have highlighted the impact of demographic characteristics on burnout, quality of life, and eating behaviors among university students (Sugara et al., 2020; Musingo & Wang, 2009). three instruments, along with a demographic sheet, were used in this study:

**The Maslach Burnout Inventory-Student Survey (MBI-SS)**

The MBI-SS was used to assess the burnout levels of university students and was developed by Schaufeli et al. (2002) as a student adaptation of the widely used Maslach Burnout Inventory (MBI; Maslach et al., 1996). The MBI-SS has been extensively utilized in university student studies, making it a suitable choice for the proposed research (Obregon et al., 2020; Pérez-Mármol & Brown, 2018).

The scale uses a 7-point Likert scale (1: strongly disagree; 7: strongly agree) and consists of 15 items in total. Burnout is measured under three components, namely, “exhaustion (5 items)”, “cynicism (4 items)”, and “professional efficacy (6 items)”. Items on the exhaustion and cynicism dimensions are scored typically, while items on the professional efficacy dimension are reversed scored. Therefore, three separate burnout scores are calculated through the scale, with increased scores referring to higher levels of burnout.

**Eating Behavior Pattern Questionnaire (EBPQ)**

This scale was developed by David G. Schlundt and consists of 51 items. It was designed to clinically assess individuals and study the relationship between dietary intake behavior

and its effect on their health (Schlundt et al., 2003). It assesses eating patterns to determine health outcomes and prevent diseases.

The questionnaire features a 6-factor model that assesses low-fat eating (14 items), emotional eating (10 items), snacking and sweets (6 items), cultural/lifestyle behaviors (7 items), haphazard planning (9 items), and meal-skipping behavior (5 items). The 51-item questionnaire includes five questions that have reverse scoring. Specifically, questions 5, 24, 25, 46, and 48 have been scored in reverse. The questionnaire is based on the Likert scale of 1 to 5, going from Strongly Disagree to Strongly Agree.

**World Health Organization Quality of Life (WHOQOL-BREF)**

Quality of life was assessed using the World Health Organization Quality of Life-BREF (WHOQOL-BREF) instrument, which measures four domains of quality of life: physical health, psychological health, social relationships, and environment (WHOQOL, 1998). The WHOQOL-BREF has been validated for use in various cultural contexts, including Pakistan, and has been employed in studies examining the quality of life of university students. The instrument's flexibility and adaptability allow it to capture the nuanced aspects of QoL across different demographic groups and cultural settings, making it a valuable tool for research and clinical practice (Marques et al., 2017; Voloshchenko, 2023).

This brief questionnaire used in the study comprises a total of 26 questions based on four domains: Physical health (7 items), Psychological Health (6 items), Social Relationship (3 items), and Environment (8 items). The remaining two questions, questions number 1 and 2, are examined individually and not under any domain because they focus on the overall

health and quality of life of the person. Three questions are scored reversely. These are question number 3, 4, and 26.

In this study, a single question was excluded from the questionnaire, which was number 21. This question read, "How satisfied are you with your sex life?" Unfortunately, due to our cultural values, respondents from our community were not comfortable discussing this topic, and therefore, it was deemed inappropriate to include the question in the survey. Furthermore, since the target population consisted of young adults aged 18 to 25, this question was deemed irrelevant to the study's objectives.

The questionnaire is based on the Likert scale. Hence, scoring was done accordingly. The lowest value was one, and the highest was scored at 5. The questionnaire was available in both English and English as the population was comfortable using the language.

Prior to the data collection, a pilot study was conducted with a small sample of university students in Islamabad to assess the clarity, comprehension, and feasibility of the questionnaire. Based on the feedback received, the survey instrument was refined and finalized.

The data collection process was supervised by the research team, who were available on-site to provide assistance and clarification to the participants if needed. The participants were informed about the purpose of the study, the voluntary nature of their participation, and the confidentiality of their responses. Written informed consent was obtained from each participant before they completed the questionnaire.

The data collection took approximately 4-7 weeks, depending on the availability and responsiveness of the target population. The researchers made a concerted effort to attain a considerable response rate by scheduling data collection sessions at convenient times for the participants.

### 3.5. Data Analysis Techniques

The collected quantitative data was analyzed through the Statistical Package for Social Sciences software, also known as ‘’IBM SPSS v26’’, which is a statical software that stands for the analysis of a moment structure and is also used for modeling, structural equation, and variables analysis. This software helped evaluate the perceived relationship between the dependent and independent variables while also clarifying measurement errors among variables, even if they are an integral part of the proposed model. The data analysis proceeded in the following steps: The raw data was thoroughly checked for any missing values, outliers, or inconsistencies. Appropriate techniques, such as case deletion, were employed to handle missing data, ensuring the integrity of the dataset. Descriptive statistics, including means, standard deviations, frequencies, and percentages, were calculated for the demographic characteristics of the participants and the key study variables (burnout, quality of life, and eating behaviors). The internal consistency reliability of the measurement instruments was assessed using Cronbach's alpha coefficient. The Pearson's correlation coefficient was calculated to examine the relationship between the dependent variables (eating behaviors) and the independent variables (Burnout, quality of life Indicators). Depending on the findings from the primary analysis, additional tests, such as ANOVA and independent sample T-tests, were run to

explore the group differences. Statistical significance levels for all analyses were set at $p < .05$.

The data analysis plan outlined above is designed to comprehensively address the research objectives and hypothesis of the proposed study. The findings from this study will contribute to the existing literature on the mental health and well-being of university students, particularly in the context of Pakistan, and provide valuable insight for the development of targeted interventions and support services to promote the overall well-being of the population.

### 3.6. Ethical Considerations

The study is conducted in full consideration of the ethical responsibility of a researcher on the basis of honesty of the research, confidentiality of participants, consensus of the participants, secrecy of the participants, moral and ethical principle of objectivity and lack of bias, as well as giving the full credit of the sources the data is taken from. Anti-discriminatory and responsible publishing. The participant's dignity was prioritized during the data collection phase. Each and every participant's consent was ensured, and each participant was informed of the purpose of the study. And data usage is purely for academic purposes. The name of universities is purposefully kept hidden to uphold the privacy of the institutions. Before conducting the research, approval from the NUST Ethical Committee was obtained to ensure that the study adhered to ethical guidelines and standards. Ethical approval Letter Ref no. 0893/Ethic/07/S3H/20/DDS is attached in Annex.

# CHAPTER 4: RESULTS AND DISCUSSION

## 4.1. Key Findings

### Descriptive Statistics

For categorical and continuous variables, descriptive statistics were conducted in percentages, frequencies, and Standard Deviations, respectively. The missing values participants were omitted. Box plots were examined to identify any outliers. Data was accessed for normality skewness and kurtosis values in Z- score. For the data set to be considered normal, the Z-score values should be within the range of ± 2.5. The sample size was large (N=377); therefore, it is assumed to be normally distributed, considering the central limit theorem (Field, 2009).

**Table 2** *Frequencies for demographics characteristics (n=377)*

| **Characteristics** | **Categories** | **Frequency *(f)*** | **Percentages *(%)*** |
|---|---|---|---|
| **Gender** | Female | 219 | 58.1 |
| | Male | 158 | 41.9 |
| **Age in years** | 16-18 | 143 | 37.9 |
| | 19-21 | 123 | 32.6 |
| | 22-25 | 111 | 29.4 |
| **Education Level** | BS | 250 | 66.3 |
| | MS | 127 | 33.7 |
| **Marital Status** | Single | 296 | 78.5 |
| | Married | 81 | 21.5 |
| **Residence** | Day Scholar | 239 | 60.5 |
| | Hostelite | 138 | 39.5 |

Table 2 provides a demographic overview of the study sample (N=377), revealing a predominantly female (58.1%) and young (majority aged 16-18 years) population. Most participants were enrolled in the bachelor's degree program (66.3%) and were single (78.5%). Regarding residence, the sample size was divided between day scholars (60.5%) and those residing in a hostel setting (39.5%). These descriptive findings offer a foundational understanding of the study sample's characteristics and distribution, providing context for interpreting the results of subsequent analysis.

**Table 3** *Mean, Standard Deviation (SD), and Alpha Reliability Coefficient*

| Scale | N | Subscales | M | SD | Range (Min/Ma) | α | Skewness | Kurtosis |
|---|---|---|---|---|---|---|---|---|
| **MBI** | 15 | **Exhaustion** | 14.9 | 7.4 | 0/30 | .90 | .26 | -1.4 |
| | | **Cynicism** | 10.05 | 4.8 | 0/24 | .77 | .46 | -.88 |
| | | **Academic Efficiency** | 23.8 | 5.9 | 0/36 | .78 | .12 | -1.3 |
| **QoL** | **23** | **Physical Health (QP)** | 76.5 | 20 | 0/100 | .89 | -.13 | -1.7 |
| | | **Psychological Health (QPsy)** | 56.4 | 36 | | | -.16 | 1.2 |
| | | **Social relationships (QSR)** | 72.1 | 32 | | | -.95 | -1.8 |
| | | **Environmental Health (QE)** | 66.5 | 28 | | | -.93 | -1.00 |
| **EBPQ** | **51** | **Low Fat Eating (EBLFE)** | 43.5 | 9.6 | 14/70 | 0.88 | .025 | -.56 |
| | | **Emotional Eating (EBEE)** | 28.7 | 8.6 | 10/50 | | 0.2 | -.04 |
| | | **Sweets and Snacking (EBSS)** | 18 | 3.7 | 6/30 | | .126 | .44 |
| | | **Haphazard Planning (EBHP)** | 27 | 5.6 | 9/45 | | .126 | .44 |
| | | **Cultural Lifestyles and behaviors (EBCLB)** | 21 | 4.4 | 7/35 | | .42 | .53 |
| | | **Meal Skipping (EBMS)** | 27 | 5.6 | 5/25 | | .16 | .41 |

*Note: The scales mentioned above are the Maslach Burnout Inventory-Student Survey, WHO Quality of Life -Brief Scale, and Eating Behavior Pattern Questionnaire; the total number of items for respective scales is denoted by 'N.' Scale's Mean is represented by 'M.' Standard deviation is indicated by 'SD,' and the alpha reliability of Cronbach's coefficient for the scales is shown by a.*

Reliability Cronbach's coefficient in the above table is stated for MBI subscale Emotional Exhaustion is .90, Cynicism is .77, and for Academic Efficiency is .78. Reliability for Quality-of-Life Scale is .89. Reliability for the Eating Behavior Pattern Questionnaire is 0.88 as indicated by Cronbach's alpha values greater than .70, suggesting that all scales are reliable measure for burnout, quality of life and eating behavior patterns respectively.

Table 3 also illustrates the distributional characteristics of continuous data of quality-of-life and burnout subscales used to predict eating behavior patterns used to assess the participants. Neither significant outliers nor data missing were identified. The skewness values and kurtosis values were within the normal distribution range (±2). The normal distribution of the dependent variable is through a Q-Q plot, and the Bell curve histogram is attached to the appendix.

**Table 4** *Frequency of categorical variables of Burnout*

| Variable | Categories | Frequency (f) | Percentages (%) |
|---|---|---|---|
| **Burnout** | **No Burnout** | 143 | 37.9 |
| | **Moderate Burnout** | 65 | 17.2 |
| | **High Burnout** | 169 | 44.8 |

Table 4 illustrates the distribution of burnout levels among the participants. It reveals that 37.9% of the participants (143 individuals) reported experiencing no burnout, while 17.2% (65) experienced moderate burnout. Alarmingly, 44.8% of the participants (169 individuals) reported high levels of burnout. This indicates that a significant % of the sample, 62%, is experiencing some degree of burnout, with nearly half of the participants facing high burnout levels.

**Correlational Analysis**

Correlational analysis using Pearson's correlation coefficient for normally distributed data was computed to test the research hypothesis. It was used to measure the linear relationship between study variables.

**Table 5** *Pearson's Correlation of Burnout and Qol Indicators and Eating Behavior Pattern and Quality of Life (n = 377)*

| Dependent variables / Independent variables | **Low Fat Eating (EBLFE)** | **Emotional Eating (EBLEE)** | **Sweets & Snacking (EBLSS)** | **Culture-Related Eating (EBCLB)** | **Haphazard Planning (EBLHP** | **Meal Skipping (EBLMS)** |
|---|---|---|---|---|---|---|
| **B** | -.28* | .29* | -.29* | -.22* | .21* | .13* |
| **QP** | .01 | -.014 | -.07 | .026 | -.015 | -.07 |
| **QPSY** | .27* | -.31* | .35* | .318* | -.25* | -.05 |
| **QSR** | .43* | -.45* | .46* | .39* | -.46* | -.08 |
| **QE** | .45* | -.30* | .31* | .34* | -.29* | -.08 |

Note: *Correlation is significant at $p < .05$.

As shown in Table 5, burnout (B) was significantly negatively correlated with low-fat eating (EBLFE, r = -0.28, p <.05) and sweets and snacking (EBSS, r = - 0.29, p<.05), and significantly positively correlated with emotional eating (EBEE, r = -0.29, p <.05), haphazard planning (EBHP, r = 0.21, p <.05), and meal skipping (EBMS, r = 0.13, p <.05). This suggests that individuals experiencing higher levels of burnout tend to engage in less

low aft eating and sweets and snacking. At the same time, they are more likely to engage in emotional eating, haphazard planning, and meal skipping.

Quality of psychological health (QPSY) was significantly positively correlated with low-fat eating (EBLFE, $r = 0.27$, $p < .05$) and sweets and snacking (EBSS, $r = 0.35$, $p < .05$), and Culture related lifestyles and behaviors (EBCLB, $r = 0.31$, $p < .05$), and significantly negatively correlated with emotional eating (EBLEE, $r = -0.31$, $p < .05$), and haphazard planning (EBHP, $r = -0.25$, $p < .05$). This indicates that better psychological health is associated with healthier eating behavior and less emotional eating and haphazard planning.

Quality of social relationships (QSR) showed significant positive correlation with low-fat eating (EBLFE, $r = 0.43$, $p < .05$) and sweets and snacking (EBSS, $r = 0.46$, $p < .05$), and Culture related lifestyles and behaviors (EBCLB, $r = 0.39$, $p < .05$), and significantly negative correlation with emotional eating (EBLEE, $r = -0.45$, $p < .05$), and haphazard planning (EBHP, $r = -0.46$, $p < .05$).

Quality of Environmental Health (QE) was significantly positively correlated with low-fat eating (EBLFE, $r = 0.457$, $p < .05$) and sweets and snacking (EBSS, $r = 0.31$, $p < .05$), and Culture related lifestyles and behaviors (EBCLB, $r = 0.34$, $p < .05$), and significantly negatively correlated with emotional eating (EBLEE, $r = -0.30$, $p < .05$), and haphazard planning (EBHP, $r = -0.29$, $p < .05$). This indicates that better environmental health quality is associated with healthier eating behaviors. Quality of physical health (QP) did not correlate significantly with dependent variables, suggesting that physical health may not be directly related to these specific eating behaviors.

**Table 6** *Mean, Standard Deviation One-way ANOVA of Burnout Level and All Eating Behavior Patterns (n = 377)*

| Variable | Group | Mean ± SD | F | p |
|---|---|---|---|---|
| **EBLFE** | No Burnout | 46.00 ± 9.10 | 21.17 | .002* |
| | Moderate Burnout | 46.58 ± 9.08 | | |
| | High Burnout | 39.83 ± 9.85 | | |
| **EBEE** | No Burnout | 26.32 ± 7.75 | 23.67 | .000* |
| | Moderate Burnout | 25.63 ± 8.15 | | |
| | High Burnout | 31.89 ± 8.47 | | |
| **EBSS** | No Burnout | 18.92 ± 3.87 | 22.91 | .007* |
| | Moderate Burnout | 19.18 ± 4.00 | | |
| | High Burnout | 16.16 ± 4.24 | | |
| **EBCLB** | No Burnout | 21.81 ± 4.11 | 14.09 | .013* |
| | Moderate Burnout | 22.28 ± 4.26 | | |
| | High Burnout | 19.60 ± 4.54 | | |
| **EBHP** | No Burnout | 24.32 ± 4.92 | 23.31 | .004* |
| | Moderate Burnout | 23.92 ± 5.17 | | |
| | High Burnout | 27.83 ± 5.33 | | |
| **EBMS** | No Burnout | 25.80 ± 6.32 | 4.97 | .016* |
| | Moderate Burnout | 25.34 ± 5.97 | | |
| | High Burnout | 27.63 ± 6.01 | | |

In our analysis, ANOVA was used to examine the differences in eating behavior patterns across different levels of burnout. Significant differences were found for all six variables: EBLFE, $F(2,374) = 21.17$, $p < .05$; EBEE, $F(2,374) = 23.67$, $p < .05$; EBSS, $F(2,374) = 22.91$, $p < .05$; EBCLB, $F(2,374) = 14.09$, $p < .05$; EBHP, $F(2,374) = 23.31$, $p < .05$; AND EBMS, $F(2,374) = 4.97$, $p < .05$. A Tukey post hoc tests revealed that the mean scores for high burnout were statistically significantly higher compared to no burnout for some eating behaviors. High burnout individuals are more likely to engage in emotional eating, sweets and snacking haphazard meal planning, and meal skipping than those with no or moderate burnout. Conversely, individuals with no burnout scored significantly higher in low-fat eating and culture and lifestyle behaviors, indicating healthier eating patterns.

Table 7 *Mean, Standard Deviation, and t-test of Gender, Education, Marital Status, Residence, and All Eating Behavior Patterns (n = 377)*

| Variable | Group | N | Mean | SD | t | p |
|---|---|---|---|---|---|---|
| **EBLFE** | Female | 219 | 42.34 | 10.34 | -2.30 | .02 |
| | Male | 158 | 44.72 | 9.20 | | |
| | BS | 250 | 42.60 | 10.31 | -2.02 | .04 |
| | MS | 127 | 44.79 | 9.02 | | |
| | Single | 296 | 42.68 | 10.01 | -2.48 | .01 |
| | Married | 81 | 45.75 | 9.31 | | |
| | Day Scholar | 239 | 44.51 | 10.20 | 3.05 | .002 |
| | Hostelite | 138 | 41.30 | 9.14 | | |
| **EBEE** | Female | 219 | 29.50 | 8.80 | 2.12 | .03 |
| | Male | 158 | 27.59 | 8.28 | | |
| | BS | 250 | 29.40 | 8.93 | 2.22 | .02 |
| | MS | 127 | 27.32 | 7.85 | | |
| | Single | 296 | 29.33 | 8.69 | 2.72 | .007 |
| | Married | 81 | 26.41 | 8.02 | | |
| | Day Scholar | 239 | 27.73 | 8.71 | -2.90 | .004 |
| | Hostelite | 138 | 30.38 | 8.25 | | |
| **EBSS** | Female | 219 | 26.33 | 5.48 | 2.14 | .03 |
| | Male | 158 | 25.12 | 5.34 | | |
| | BS | 250 | 26.22 | 5.70 | 1.96 | .05 |
| | MS | 127 | 25.06 | 4.83 | | |
| | Single | 296 | 26.19 | 5.54 | 2.50 | .01 |
| | Married | 81 | 24.49 | 4.91 | | |
| | Day Scholar | 239 | 25.23 | 5.53 | -2.81 | .005 |

| | | | | | | |
|---|---|---|---|---|---|---|
| | Hostelite | 138 | 26.86 | 5.16 | | |
| **EBCLB** | Female | 219 | 17.30 | 4.43 | -2.30 | .02 |
| | Male | 158 | 18.32 | 4.03 | | |
| | BS | 250 | 17.38 | 4.50 | -2.23 | .02 |
| | MS | 127 | 18.42 | 3.77 | | |
| | Single | 296 | 17.43 | 4.38 | -2.62 | .009 |
| | Married | 81 | 18.83 | 3.78 | | |
| | Day Scholar | 239 | 18.15 | 4.43 | 2.51 | .01 |
| | Hostelite | 138 | 17.00 | 3.95 | | |
| **EBHP** | Female | 219 | 20.61 | 4.52 | -1.46 | .14 |
| | Male | 158 | 21.30 | 4.41 | | |
| | BS | 250 | 20.67 | 4.69 | -1.40 | .16 |
| | MS | 127 | 21.35 | 4.02 | | |
| | Single | 296 | 20.64 | 4.55 | -2.17 | .03 |
| | Married | 81 | 21.85 | 4.11 | | |
| | Day Scholar | 239 | 21.40 | 4.58 | 2.89 | .004 |
| | Hostelite | 138 | 20.03 | 4.17 | | |
| **EBMS** | Female | 219 | 26.87 | 6.40 | 1.21 | .22 |
| | Male | 158 | 26.09 | 5.87 | | |
| | BS | 250 | 26.46 | 6.22 | -0.38 | .70 |
| | MS | 127 | 26.72 | 6.14 | | |
| | Single | 296 | 26.41 | 6.09 | -0.78 | .43 |
| | Married | 81 | 27.02 | 6.54 | | |
| | Day Scholar | 239 | 26.53 | 5.97 | -0.05 | .95 |
| | Hostelite | 138 | 26.57 | 6.57 | | |

*Df = 375, $p < 0.05$*

For the gender group, significant differences were observed in several eating behavior patterns. Females reported significantly lower scores and low-fat eating (M =42.34, SD =10.34) compared to males (M =44.72, SD =9.20), indicating that males are more likely to engage in low-fat eating behaviors ($p < .05$). Conversely, females scored higher in emotional eating (M =29.50, SD =8.80) than males (M =27.59, SD =8.28), suggesting that females are more prone to emotional eating ($p < .05$). Additionally, females had lower scores in sweets and snacking (M =17.30, SD =4.43) compared to males (M =18.32, SD =4.03). Regarding cultural lifestyle and behaviors, females scored lower (M =20.61, SD =4.52) than males (M =21.30, SD =4.41). Females also reported higher scores and haphazard planning (M =26.33, SD =5.48) and meal skipping (M =27.37, SD =5.92) compared to males (M =25.12, SD =5.34 and M =26.09, SD =5.87, respectively).

When comparing education levels, bachelor's students had significantly lower scores in low-fat eating (M =46.60, SD =10.31) compared to master's students (M =44.79, SD =9.02), indicating that master's students are more likely to engage in low-fat eating behaviors ($p < .05$). Conversely, bachelor's students also scored higher in emotional eating (M =29.40, SD =8.93) than master's students (M =27.32, SD =7.85), additionally in terms of sweets and snacking, bachelor's students have lower scores (M =17.38, SD =4.50) compared to master's students (M =18.42, SD =3.77). No significant differences were found in cultural lifestyles and behaviors between both groups. Bachelor students scored slightly higher in haphazard planning (M =26.2, SD =5.70) than master's students (M =25.06, SD =4.83). There were no significant differences in meal skipping between Bachelor's and master's students ($p > .05$).

For marital status, single participants reported significantly lower scores in low-fat eating ($M = 42.68$, $SD = 10.01$) compared to married participants ($M = 45.75$, $SD = 9.31$) ($p < .05$). Single participants also scored higher in emotional eating ($M = 29.33$, $SD = 8.69$) than married participants ($M = 26.41$, $SD = 8.02$) ($p < .05$). In terms of sweets and snacking, single participants had lower scores ($M = 17.43$, $SD = 4.38$) compared to married participants ($M = 18.83$, $SD = 3.78$) ($p < .05$). No significant differences were found in cultural lifestyle behavior between single and married participants ($p > .05$). Single participants scored higher in haphazard planning ($M = 26.19$, $SD = 5.54$) compared to married participants ($M = 24.49$, $SD = 4.91$) ($p < .05$). There were no significant differences in meal skipping between single and married participants ($p > .05$).

Regarding residency, day scholars reported significantly lower scores in low-fat eating ($M = 44.51$, $SD = 10.20$) compared to hostilities ($M = 41.30$, $SD = 9.14$) ($p < .05$). Day scholars also scored lower in emotional eating ($M = 27.73$, $SD = 8.71$) compared to Hostelite ($M = 30.38$, $SD = 8.25$) ($p < .05$). In terms of sweets and snacking, day scholars had higher scores ($M = 18.15$, $SD = 4.43$) compared to Hostelite ($M = 17.00$, $SD = 3.95$) ($p < .05$). Significant differences were found in cultural lifestyle behavior between day scholars and Hostelite, with day scholars scoring higher ($M = 21.40$, $SD = 4.58$) compared to Hostelite ($M = 20.03$, $SD = 4.17$) ($p < .05$). Day scholars scored lower in haphazard planning ($M = 25.23$, $SD = 5.53$) compared to Hostelite ($M = 26.86$, $SD = 5.16$) ($p < .05$). There were no significant differences in meal skipping between day scholars and Hostelite ($p > .05$).

The analysis revealed significant differences in eating behavior patterns based on gender, education level, marital status, and residency. Males were more likely to engage in low-fat eating, sweets, and snacking, while females were more prone to emotional eating,

haphazard planning, and meal skipping. Master's students exhibited more low-fat eating behaviors, whereas bachelor students showed higher emotional eating and haphazard planning. Married participants were more likely to engage in low-fat eating, sweets, and snacking, while single participants scored higher in emotional eating and haphazard planning. Hostilities were more prone to emotional eating and haphazard planning, whereas day scholars scored higher in sweets and snacking and cultural lifestyle behaviors. These findings highlight the influence of demographic factors on eating behaviors among Pakistani university students.

### 4.2. Discussion

In this study, we explored the impact of burnout and quality of life indicators on the eating behavior patterns of university students in Pakistan. Our findings revealed significant correlations between burnout levels and various eating behavior patterns. Specifically, higher levels of burnout are associated with less healthy eating patterns, such as increased emotional eating, haphazard planning, and meal skipping. Conversely, better psychological health and more robust social relationships were associated with healthier eating behaviors, including low-fat eating and reduced emotional eating.

This study provides significant insights into the intricate relationship between burnout, quality of life indicators, and eating behaviors among Pakistan's young adults. Our findings indicate that burnout profoundly impacts eating behaviors, supporting our first hypothesis (H1). Specifically, students experiencing high levels of burnout were more likely to engage in unhealthy eating behaviors, such as emotional eating, inconsistent meal scheduling, and

meal Skipping. This aligns with previous research suggesting burnout can lead to maladaptive coping mechanisms, including poor dietary choices (Rajput, 2024).

Moreover, the negative correlation between burnout and nutritious eating patterns, such as reduced consumption of fatty foods and decreased intake of sweets and snacks, further highlights the detrimental impact of burnout on students' eating habits. These findings suggest that students are less likely to maintain healthy eating patterns as burnout levels increase, thereby supporting the alternative hypothesis (H1) and getting the null hypothesis (H0).

In contrast, our findings on quality-of-life indicators reveal a positive relationship with healthy eating behavior. Better psychological health, strong social relationships, and a high-quality environment were all associated with healthier eating patterns, such as increased low-fat eating and reduced emotional eating. These results support our second hypothesis (H2), Indicating a significant relationship between the quality of life of university students and their eating behaviors. This is consistent with previous research indicating that a higher quality of life is linked to better dietary habits (Walker, 2023). The positive correlation between quality-of-life indicators and healthy eating behavior suggests that students who perceive their lives as more fulfilling and supportive are more likely to engage in beneficial dietary practices, supporting the alternative hypothesis (H2) and rejecting the null hypothesis (H0).

Gender differences observed in our study highlight that males are more likely to engage in low-fat eating and sweets and snacking, while females are more prone to emotional eating and haphazard planning. These findings align with existing literature suggesting

gender differences in eating behaviors, with females often reporting higher levels of emotional eating (Smith et al., 2020). This could be attributed to different coping mechanisms and societal pressures males and females face. For instance, females may turn to food as a source of comfort during stressful times, while males might focus more on the nutritional aspects of their diet. Understanding these gender-specific tendencies can help design targeted interventions to promote healthier eating habits among male and female students.

The educational level also played a significant role in eating behaviors. Master's students exhibited healthier eating patrons compared to bachelor students., Engaging more in low-fat eating and culture and lifestyle behaviors. This could be due to increased awareness and knowledge about healthy eating habits among master's students. These findings suggest that educational interventions targeting dietary behaviors could be beneficial, particularly for undergraduate students (Le et al., 2023). The difference in eating behaviors between master's and bachelor's students might also reflect the maturity and life experiences that come with advanced education. Master students may have developed better time management and stress-coping skills, which can positively influence their dietary choices.

Marital status and living arrangements were also significant factors influencing eating behaviors. Married individuals and day scholars exhibited healthier eating habits than their single and Hostelite counterparts (Santos et al., 2022; Qureshi et al., 2022). This could be due to the stability and support systems available to married Individuals and day scholars, which may promote better dietary choices. Married students might benefit from shared responsibilities and emotional support from their spouses, leading to more structured and healthier eating patterns. Similarly, day scholars, who often live with their families, might

have access to home-cooked meals in a more stable eating environment than hostilities, who might rely on less nutritious cafeteria food or irregular meal schedules.

The significant differences observed in eating behaviors across different burnout levels, such as their interventions aimed at reducing burnout, could positively impact student Eating behaviors. For example, stress management programs and mental health support services could help students cope with burnout more effectively, thereby reducing their reliance on healthy eating behaviors as a coping mechanism.

### *4.2.1. Operationalization of Theory*

Social cognitive theory (SCT), developed by Albert Bandura, is a framework for understanding how individuals acquire and maintain behaviors. It emphasizes the role of cognitive processes, social influences, and environmental factors in shaping behavior. SCT is particularly relevant to behavior analysis as it highlights the dynamic interplay between personal factors, behavior, and the environment, known as reciprocal determinism (Bandura, 1996).

Our findings indicate that a higher quality of life is associated with healthier eating behaviors among university students in Pakistan. Students with better psychological health, stronger social relationships, and a supportive environment are likelier to engage in low-fat and reduced emotional eating. This suggests that when students perceive their lives as fulfilling and supportive, they are more motivated to maintain healthy dietary practices (Williams et al., 2018; Schnettler et al., 2017). These results align with SCT's emphasis on the influence of personal and environmental factors on behavior. The study also revealed that higher levels of burnout are linked to unhealthy eating behaviors, such as increased

emotional eating, haphazard planning, and meal skipping. Burnout can diminish self-efficacy, or the belief in one's ability to perform specific behaviors, leading students to adopt maladaptive coping mechanisms like poor dietary choices. This finding supports the notion that burnout negatively impacts students' ability to maintain healthy eating habits, highlighting the need for interventions that address stress and burnout (Chui et al., 2019).

Reciprocal determinism, a core concept of SCT, posits that personal factors, behavior, and the environment continuously influence each other. Our study illustrates this interaction by showing how burnout (a personal factor) leads to unhealthy eating behaviors (behavior), which are further influenced by students' social and physical environment (Schnettler et al., 2017). For instance, students experiencing burnout may lack the motivation to plan meal behavior, exacerbated by a lack of healthy food options in their environment.

Observational learning, or learning by observing others, is a critical component of SCT. In the context of our study, students who observe their peers or family members engaging in healthy eating behaviors are more likely to adopt similar habits. This phenomenon underscores the significant role of social relationships and support systems in promoting healthy dietary choices (Santos et al., 2022). Our findings highlight that merit students in day scholars, who likely have more stable support systems, exhibited healthier eating habits than their single and Hostelite counterparts. This suggests that a social environment that provides positive role models and support can enhance students' dietary behaviors (Mahmood et al., 2021). Students can develop better dietary habits by observing and emulating the healthy eating practices of those around them. This aligns with SCT's Emphasis on modeling social reinforcement and behavior change (Bandura, 1996). The presence of supportive social networks and positive role models can significantly influence

students eating behaviors, encouraging them to make healthier choices and maintain their behaviors over time.

SCT also emphasizes the impact of environmental factors on behavior. Our study found that the quality of the environment is positively correlated with healthier eating behaviors. This can be interpreted as students in supportive and resource-rich environments having better access to healthy food options and fewer barriers to maintaining a healthy diet (Shrestha et al., 2017). For instance, day scholars who live with their families may have more access to meals cooked at home, while Hostelites might face challenges such as limited healthy food options and cafeterias. This highlights the need for universities to create an environment that facilitates healthy eating by providing nutritious food options and reducing barriers to healthy dietary practices.

Finally, it is essential to consider the cultural context when interpreting these findings. In Pakistan, cultural norms and dietary practices can significantly influence eating behaviors. Our study findings that cultural and lifestyle behaviors are linked to burnout and quality of life highlight the need to incorporate cultural considerations into dietary interventions. Understanding the specific cultural factors that influence student's eating habits can help tailor interventions to be more effective and culturally sensitive.

In conclusion, linking our findings to SCT provides a deeper understanding of the complex interplay between personal, behavioral, and environmental factors in shaping eating behaviors among university students in Pakistan. By addressing these factors through targeted interventions, we can promote healthier dietary habits and improve students' overall well-being. Future research should continue to explore these relationships and

develop strategies that leverage the principle of SCT to enhance student's self-efficacy, outcome expectations, and social support for healthy eating. This approach can help create a supportive environment that fosters positive dietary behaviors and mitigates the negative impact of burnout.

### *4.2.2. Comparison with Previous Studies*

The present study contributes to the existing body of literature by reaffirming and expanding upon the intricate relationship between burnout, quality of life indicators, and eating behavior among university students. Previous research has consistently highlighted a Positive correlation between high levels of burnout and unhealthy eating behavior habits, Such as increased emotional eating and irregular meal patterns (Chi et al., 2019). Our findings not only corroborate these established connections but also demonstrate that individuals experiencing elevated levels of burnout are more prone to engaging in emotional eating, attic meal planning, and skipping meals, aligning with the findings of research conducted by Urbon and Salavera (2023). This consistency underscores the universal detrimental impact of burnout on dietary behaviors, transcending geographical and cultural boundaries.

In the domain of quality of life, our study aligns with the conclusion drawn by Rajput et al. (2024) and Intiful et al. (2022), who emphasized the association between enhanced psychological well-being, solid social relationships, and healthier eating behaviors. Our results mirrored these findings by revealing significant positive associations between quality-of-life indicators and favorable dietary patterns, Such as the adoption of low-fat diets and reduction in emotional eating tendencies. This parallelism underscores the crucial

role of psychological and social well-being in fostering wholesome dietary practices among university students. The observed positive relationships suggest that individuals who perceive their lives as fulfilling and supportive are more inclined to embrace beneficial dietary behaviors, potentially due to robust psychological and social support systems (Intiful et al., 2022).

Sociological well-being, social relationships, and environmental factors collectively play a crucial role in shaping students' eating behaviors. Positive mental states enhance self-efficacy and motivation, encouraging healthier dietary practices. Strong social support networks, positive role models, and observational learning promote beneficial eating habits. The physical and social environment, including access to healthy food options and a culture of Wellness, significantly influences students' dietary choices. Universities should implement interventions that address mental health, foster supportive social environments, and create facilities that provide nutritious food options to support students in maintaining healthy eating behaviors.

However, our research unveils novel insights diverging from prior studies. While existing literature predominantly focuses on the adverse effects of burnout on eating behaviors, fewer studies have explored the positive influence of quality-of-life indicators on dietary choices. Our findings introduced a fresh perspective, indicating that students with enhanced quality of life indicators are predisposed to healthier eating habits. This suggests that interventions to improve psychological health, social relationships, and environmental health could promote better dietary practices. This novel dimension enriches the current discourse by highlighting the dual significance of addressing burnout, enhancing quality of life, and cultivating healthy eating behaviors among university students.

Gender disparities in eating behaviors have been extensively documented, with females often exhibiting higher levels of emotional eating compared to males (Smith et al., 2020). Our study substantiates these observations, demonstrating that females tend towards emotional eating and erratic meal planning, while males lean towards low-fat diets and consuming sweets and snacks. Societal norms and coping strategies unique to each gender may influence these gender-specific inclinations. The consistency with previous research underscores the necessity of gender-specific interventions to address unhealthy eating behaviors, recognizing the distinct approaches required to support male and female students in developing healthier dietary habits (Joseph et al., 2023). For example, programs that address emotional eating and provide strategies for meal planning may be more beneficial for female students. At the same time, initiatives that promote balanced nutrition and healthy snacking could be more effective for male students.

Educational attainment differentials in eating behaviors have received limited attention. Our investigation reveals that master's students exhibit healthier eating behavior patterns than bachelor's students, potentially attributed to a deeper understanding and awareness of nutrition among graduate students. This alignment with existing scarce research suggests a connection between higher education levels and improved eating Behaviors, indicating the potential benefits of educational interventions tailored toward undergraduate students to enhance their eating Behaviors (Le et al., 2023). The disparities in eating behaviors between master's and bachelor's students may also reflect the maturity and life experiences that accompany advanced education, potentially influencing their decision-making processes related to diet. Educational interventions targeting undergraduates can help

Bridge this gap report by giving them the knowledge and skills to make healthier dietary behavior choices.

Marital status and living arrangements emerged as significant influences on eating behaviors in our study. Married individuals and day scholars demonstrated healthier dietary habits than their single and Hostelite counterparts. Marriage students and day scholars may benefit from more stable support systems and access to home-cooked meals, contributing to their adoption of healthier eating patterns, as suggested by Santos et al. (2022) and Qureshi et al. (2022). These outcomes underscored the importance of considering social-environmental factors when addressing eating behaviors among university students. Recognizing the importance of social support and stable living conditions can help design interventions that promote healthier eating behaviors among all students.

Table 3 and Table 6 further underscore the substantial impact of burnout on specific eating behaviors. Individuals experiencing high levels of burnout exhibited a higher inclination towards emotional eating, consumption of sweets and snacking, and erratic meal planning.

These findings, along with those of Caso et al. (2020), emphasize the urgency of addressing burnout and promoting quality of life to foster healthier eating behaviors among our young population. The observed differences in eating behaviors across varying levels of burnout highlight the potential positive influence of interventions aimed at mitigating burnout on students' dietary behaviors. Initiatives such as stress management programs and mental health support services could assist students in effectively coping with burnout, thereby reducing the reliance on unhealthy eating behaviors as coping mechanisms.

In conclusion, our study enriches the existing scholarly discourse by comprehensively analyzing the factors influencing eating behaviors among university students in Pakistan. While our findings resonate with much of the current literature, they introduce new perspectives on the constructive role of psychological health, physical health, social relationships, and environmental health and the impact of educational level, marital status, and living arrangements on eating behavior patterns. These divergences underscore the significance of considering cultural and contextual factors when investigating eating behaviors and designing interventions to promote healthier eating behavior patterns. Future research endeavors should continue exploring these relationships and diverse populations to develop more targeted and culturally sensitive strategies for enhancing student health and well-being.

### 4.3. Challenges

Researching the relationship between burnout, quality of life indicators, and eating behavior among university students in Pakistan presented a set of unique challenges that necessitated careful consideration and strategic approaches. One of the primary challenges was the limited availability of research literature within the Pakistani context. While there is a growing interest in mental health and dietary behaviors, academic discourse and empirical studies on the specific subject remain relatively scarce. This scarcity necessitated a more comprehensive approach to data collection, relying heavily on primary sources and firsthand participant accounts to ensure the study's relevance and accuracy.

The prevailing social stigma associated with discussing mental health and eating behaviors emerged as a significant impediment during the research process. Many potential

participants harbored reservations about openly discussing their experiences with burnout and dietary habits, fearing judgment or misinterpretation. This hesitancy, rooted in misconceptions and cultural taboos, called for a sensitive approach to participant recruitment and engagement. Addressing these cultural sensitivities required a tactful and respectful approach, ensuring participants felt comfortable sharing their perspectives while adhering to cultural norms and expectations.

Additionally, sample representation remained confined to specific geographic areas, which introduced potential limitations in the generalizability of findings. While efforts were made to diversify the sample, logistical constraints and resource limitations ultimately influenced the final composition of participants.

Ensuring the veracity of participant responses posed an additional challenge. Given the personal and potentially sensitive nature of their experiences with burnout eating behaviors, there was a need to foster an environment of trust and openness. This required building rapport, maintaining confidentiality, and assuring participants that their perspectives were valued and respected. By addressing these challenges, the research sought to draw insights that could be applied more broadly while recognizing the need for future studies to expand the scope of representation and further explore these critical issues.

# CHAPTER 5: CONCLUSION AND POLICY IMPLICATIONS

## 5.1. Conclusion

These findings also stress the environmental, psychological, and social policy perspectives on students' eating behaviors. To sum up, this study has brought forth factors related to burnout alongside quality-of-life indicators about the eating behaviors of university students in Pakistan. It was observed that high levels of burnout lead to poor eating behaviors like emotional eating and meal skipping. At the same time, better mental health and social support proved beneficial for healthy eating behaviors. Furthermore, education, marital status, gender, and household arrangements are crucial to one's eating behaviors.

Therefore, the study emphasizes the importance of understanding multiple factors influencing university students, eating behaviors in Pakistan. As well as the importance of culturally sensitive approaches to improve healthy eating among university students. Based on these understandings, there is a need to appreciate that the realities of Pakistani university students must inform interventions to be effective. This may encompass the formulation of programs that consider factors such as family, socioeconomic status, psychological health, and cultural practices on diet. These results also underscored that the context of campus and relevant policies might play a crucial role in students' eating behaviors. Subsequent research could look at increasing choices and access to healthier foods for university cafeterias, the development of effective nutrition education programs, and ways to foster a healthier eating culture. Finally, since eating has psychological connotations, including stress, another unhealthy eating coping indicator, it may be relevant in these coping strategies aimed at improving student health. Consequently, there

is a need for synergy between policymakers and the educational system to support structures that allow access to healthy foods and nutrition education to integrate these provisions within institutions. This study's contribution, particularly about the effects of quality-of-life indicators, education level, marital status, and living arrangements among university students in Pakistan, provides insight into designing institutions based on evidence-based interventions and policies.

### 5.2. Policy Implications and Links to Development Studies.

1. **Mental health support and awareness:** Policies and Laws should be formulated to improve professional mental health services in learning institutes, burnout, and the effects of unhealthy coping behaviors such as unhealthy eating. This can be reached through awareness creation, incorporating mental health campaigns and workshops, and inculcating it into the educational curriculum. Promoting mental health awareness aligns with SDG 3. This focuses on ensuring a healthy life and promoting well-being at all stages.

2. **Nutritional education and healthy eating initiatives:** Recognizing the importance of healthy eating behaviors, policies can support the growth of nutritional learning and learning opportunities that require students to practice proper nutritional habits. This could entail access to nutritious food options on campus and integrating nutrition literacy into academic programs. These efforts support SDG2, which aims to end hunger, achieve food security, and improve nutrition.

3. **Supportive campus environment**: The policies should ensure that the campus environment is supportive in terms of encompassing both psychological and social aspects that influence eating behaviors. This also involves making available places for counseling social interactions and fostering community among the students. A supportive environment can help enhance students' quality of life and contribute to healthier eating behaviors, aligning with SDG 4, which aims to ensure inclusive and equitable quality education and promote lifelong learning opportunities.

4. **Research and continued monitoring**: Policymakers should support ongoing research to explore further the relationship between burnout, quality of life, and eating behaviors. This can be instrumental in translating into policy formulation and ensuring they remain relevant and effective in addressing the emerging challenges related to students' well-being. Consistent Monitoring and evaluation may assist in refining strategies and improving outcomes.

5. **International collaboration:** Given the global nature of academic stress and dietary challenges, policies related to shrinking well-being should consider international perspectives and potentially collaborate with other countries to share best practices and insights. International collaboration can enhance the effectiveness of more comprehensive interventions. The holistic approach to student health supports SDG 17, which aims to strengthen the means of implementation and revitalize global partnerships for sustainable development.

6. **Economic development:** Addressing burnout and healthy eating behaviors can have positive economic implications by improving students' academic performance

and reducing healthcare costs associated with poor dietary habits. Policies that support students' well-being can contribute to a more productive and healthier workforce, aligning with SDG 8, which aims to promote sustained, inclusive, and sustainable economic growth, productive employment, and decent work for all.

7. **Cultural Development:** Policies should recognize the cultural context of dietary habits and promote culturally sensitive interventions that respect and incorporate traditional dietary practices, which can enhance the effectiveness of interventions and promote cultural acceptance and support SDG 11, which aims to make cities and human settlements inclusive, safe, resilient, and sustainable.

8. **Social Development:** Promoting healthy eating behaviors and addressing burnout and quality of life can influence students' attitudes towards societal norms and contribute to social development. By Fostering a supportive and healthy campus environment, policies can encourage positive social interactions and critical thinking about health and well-being aligned with SDG 10, which aims to reduce inequality within and among countries.

9. **Educational Development:** Integrating mental well-being and nutrition within the academic framework Can give students helpful experience in their learning processes and equip them with better knowledge about their health. This contributes to SDG 4, which deals with quality education for all and promoting lifelong learning.

Through the promotion of the above policy recommendations, both universities and policymakers can foster a positive nutritional culture that, in return, increases the

development of students and other stakeholders and ultimately fosters the development of society.

### 5.3. Way Forward

In the future, there is a need for longitudinal research to enhance understanding of how burnout and QoL markers affect the eating trends evident among university pupils across time. Such an investigation should warrant thorough monitoring of levels of these variables and evaluation of changes in them. In this particular area, longitudinal research will enable the understanding of the consequences likely to result from these effects of Psychosocial variables on eating behavior patterns and contribute towards establishing timeframes for interventional measures to be implemented.

Additionally, the use of cross-cultural comparison serves as an excellent opportunity for exploration as it provides the potential to illuminate if the association between these variables is universally generalized or culture or region-specific. Understanding the influence of diversity of values and norms on these relationships would enhance our understanding. Comparative studies, which target university pupils from various cultures, can contribute to establishing the extent to which these factors influence eating behaviors among individuals and the application of the interventions across various settings.

Moreover, delving into the mental health implications of burnout, physical health, psychological health, social relationships, and environmental health on eating behavior patterns constitutes a crucial next step. This entails a comprehensive examination of their potential impact on mental health outcomes, encompassing facets such as stress, anxiety, depression, and overall well-being. Such research endeavors would contribute substantially

to the broader domain of health psychology and provide invaluable insights into the intricate interplay between mental health and eating behavior. Understanding these relationships can inform the development of holistic interventions that address mental health and eating behaviors.

Furthermore, as the academic environment continues to evolve in Pakistan, there is a pressing need for further studies that scrutinize the multifaceted influence of academic stress and support systems on the eating behaviors of university students. This would entail an in-depth investigation of various dimensions, ranging from the impact of academic workload and societal support to the role of institutional policies in shaping eating behaviors and choices. Such research endeavors are poised to be instrumental in comprehending the dynamic interplay between academic stress, support systems, and eating behavior, ultimately paving the way for a more nuanced understanding of how to promote healthier eating behavior patterns and overall well-being among university students in Pakistan.

# REFERENCES


Abidi, S. H. R., Almas, A., Sabir, S., Iqbal, R., & Ghani, A. (2021). Assessment of macronutrient consumption in the diet of adolescent school children in four seasons: a longitudinal study from an urban city in Pakistan. Journal of Health, Population and Nutrition, 40(1). https://doi.org/10.1186/s41043-021-00268-5

Ahmad, F., & Anwar, S. (2023). Socio Economic Factors Associated with Prevalence of Non-Communicable Diseases Among Adults in Punjab, Pakistan. Annals of Punjab Medical College, 17(3), 275–280. https://doi.org/10.29054/apmc/2023.1500

Ahmad, S., Ansari, M. A., Khalil, S., Khan, N. A., Abedi, A. J., & Eram, U. (2023). Physical Activity Levels and Junk Food Intake Among School Going Adolescents in A North Indian City. Indian Journal of Community Health, 35(2), 182–186. https://doi.org/10.47203/ijch.2023.v35i02.009

Almalki, A., Gokaraju, B., Doss, D. A., & Mehta, N. (2021). Geospatial and Machine Learning Regression Techniques for Analyzing Food Access Impact on Health Issues in Sustainable Communities. ISPRS International Journal of Geo-Information, 10(11), 745. https://doi.org/10.3390/ijgi10110745

Alqadasi, E. T., Chamroonsawasdi, K., Saejeng, K., & Nagi, M. A. (2024). Burden of non-communicable diseases in Health Council of Gulf Cooperation (GCC) countries. Journal of Taibah University Medical Sciences, 19. https://doi.org/10.1016/j.jtumed.2024.07.009

Alzahrani, S. H., Baamer, M. K., Shalabi, A. F., Saeedi, A. A., & Alzahrani, A. M. (2020). Eating Habits Among Medical Students at King Abdulaziz University, Jeddah, Saudi Arabia. International Journal of General Medicine, 13(10), 77–88. https://doi.org/10.2147/ijgm.s246296

Amin Baig, A. (2018). Obesity in Pakistan; Current and Future Perceptions. Current Trends in Biomedical Engineering & Biosciences, 17(2). https://doi.org/10.19080/ctbeb.2018.17.555958.

Amjad, A., Abid, A., Khalid, S., Khan, A. U., & Khattak, S. (2022). Assessment of Eating Behaviors and Nutritional Status of Adolescents: A School-based Cross-Sectional Study Conducted in Lahore, Pakistan. BioScientific Review, 4(4), 101–113. https://doi.org/10.32350/bsr.44.06

Antwi, J., Olawuyi, Y., Opara, I., & Ifafore, M. (2024). Hindrances and Enablers of Healthy Eating Behavior Among College Students in HBCU: A Qualitative Study. Journal of Racial and Ethnic Health Disparities. https://doi.org/10.1007/s40615-024-02108-8

Arslan, A. K., Cicek, I. B., & Colak, C. (2019). Open-Source Web Based Software for Random Assignment/Allocation Methods in Data Processing. Institute of electrical electronics engineers. https://doi.org/10.1109/idap.2019.8875979

Ashraf, T., Nadeem, A., Sultana, R., & Lashari, M. N. (2023). Obesity from Clinical Evaluation to Management Local Perspective. Pakistan Heart Journal, 56(4), 248–249. https://doi.org/10.47144/phj.v56i4.2704

Askari, A., Askari, S., & Jawed, A. (2022). Women Education in Pakistan: Challenges and Opportunities. International Journal of Women Empowerment, 8, 27–32. https://doi.org/10.29052/2413-4252.v8.i1.2022.27-32

Assir, M. K., Khan, Z., Jabeen, A., Chaudhary, A.-E.-G., & Shafiq, M. (2016). High prevalence of preobesity and obesity among medical students of Lahore and its relationship with dietary habits and physical activity. Indian Journal of Endocrinology and Metabolism, 20(2), 206. https://doi.org/10.4103/2230-8210.176357

Banik, S., & Rahman, M. (2018). Prevalence of Overweight and Obesity in Bangladesh: A Systematic Review of the Literature. Current Obesity Reports, 7(4), 247–253. https://doi.org/10.1007/s13679-018-0323-x

Barlett, C. P., Barlett, N. D., & Chalk, H. M. (2018). Transitioning Through Emerging Adulthood and Physical Health Implications. Emerging Adulthood, 8(4), 297–305. https://doi.org/10.1177/2167696818814642

Blum, L. S., Khan, R., Khondker, R., Sultana, M., Tumilowicz, A., Soltana, N., Siddiqua, Y., & Sultana, S. (2019). Using a gender lens to understand eating behaviours of adolescent females living in low-income households in Bangladesh. Maternal & Child Nutrition, 15(4). https://doi.org/10.1111/mcn.12841

Borges, C. A., Kikuta, C., & Jaime, P. C. (2020). Nutritional profile of ultra-processed foods advertised in small food retailers. European Journal of Public Health, 30(Suppl 5). https://doi.org/10.1093/eurpub/ckaa166.248

Caso, D., Miriam, C., Rosa, F., & Mark, C. (2020). Unhealthy eating and academic stress: The moderating effect of eating style and BMI. Health Psychology Open, 7(2), 205510292097527. https://doi.org/10.1177/2055102920975274

Chen, Y., Ma, L., Liu, X., Yan, N., Fan, Y., Jia, W., Yan, H., & Ma, L. (2020). Higher Academic Stress Was Associated with Increased Risk of Overweight and Obesity among College Students in China. International Journal of Environmental Research and Public Health, 17(15), 5559. https://doi.org/10.3390/ijerph17155559

Chui, H., Maskeen, S., Bryant, E., Stewart-Knox, B., & Sarabia, C. (2019). Burnout, eating behaviour traits and dietary patterns. British Food Journal, 122(2), 404–413. https://doi.org/10.1108/bfj-04-2019-0300

D Intiful, F., Mawusi Amos, P., Asante, M., Antwi, T., Steele-Dadzie, R., Ainuson-Quampah, J., Pobee, R., Ammah, C., & Nkum Wilson, K. (2022). The Impact of Interpersonal Relationships on Dietary Habits. intechopen. https://doi.org/10.5772/intechopen.95482

Dakanalis, A., Mentzelou, M., Giaginis, C., Mantzorou, M., Papadopoulou, S. K., Spanoudaki, M., Vasios, G. K., Pavlidou, E., & Papandreou, D. (2023). The Association of Emotional Eating with Overweight/Obesity, Depression, Anxiety/Stress, and Dietary Patterns: A Review of the Current Clinical Evidence. Nutrients, 15(5), 1173. https://doi.org/10.3390/nu15051173

Demirchyan, A. D., & Aslanyan, L. A. (2019). Attitudes, norms and behaviors enhancing unhealthy food choices of high school students in Armenia. European Journal of Public Health, 29(Suppl 4). https://doi.org/10.1093/eurpub/ckz186.268

Dewantara, Y., Gunawijaya, J., & Nurbaeti, N. (2023). Ritual gastronomy and cultural identity formation in Kampung Naga: an ethnographic investigation of the role of culinary in religious rituals and cultural practices. Gema Wiralodra, 14(3), 1447–1459. https://doi.org/10.31943/gw.v14i3.560

Dominguez, V. A. H., & Halili, B. L. B. (2018). Food for Thought: The Socioeconomic Impact of Child Malnutrition and Maternal Health on the Academic Performance of Filipino School Children. European Journal of Sustainable Development, 7(4). https://doi.org/10.14207/ejsd.2018.v7n4p361

El-Sayed, S. M., & Youssef, A. M. (2019). Potential application of herbs and spices and their effects in functional dairy products. Heliyon, 5(6), e01989. https://doi.org/10.1016/j.heliyon.2019.e01989

Ferreira, S. M. D. S., & Zaia, V. (2023). Burnout, Life Satisfaction, and Work-Related Quality of Life among Psychologists. research square platform llc. https://doi.org/10.21203/rs.3.rs-3329403/v1

G Resimo, J., City, B., B Guazon, C. G., G Tesiorna, J., T Ederio, N., Mierl D Rosa, M. C., City, F., & City, F. (2024). Eating Habits and Academic Performance of College Students in a Private School. International Journal of Current Science Research and Review, 07(05). https://doi.org/10.47191/ijcsrr/v7-i5-86

Ghulam, Yaseen & Khokhar, Shiasta & Khan, Kumar & Jesrani, Irfan & Ali, Gabol & Manzar, Ali & Sethar, & Jesrani, Vinay. (2023). Prevalence of diabetes in young adults between 18 -35 years of the population of Sukkar, Sindh, Pakistan. Rawal Medical Journal. 48. 331 -333.

Gilmour, A., Gill, S., & Loudon, G. (2020). Young adolescents' experiences and views on eating and food. Young Consumers, 21(4), 389–402. https://doi.org/10.1108/yc-06-2020-1161

Global Burden of Disease. (2021). Global Burden of Disease 2021: Findings from the GBD 2021 Study. Retrieved from https://www.healthdata.org/research-analysis/gbd.

Global Nutrition Report. (2022). Global Nutrition Report: Pakistan. Retrieved from https://globalnutritionreport.org/reports/2022-global-nutrition-report/.

Goettler, A., Sonntag, D., & Grosse, A. (2017). Productivity loss due to overweight and obesity: a systematic review of indirect costs. BMJ Open, 7(10), e014632. https://doi.org/10.1136/bmjopen-2016-014632

Google. (2024). Universities in Islamabad [Google Maps screenshot]. Retrieved from https://maps.google.com

Gulati, S., & Misra, A. (2017). Abdominal obesity and type 2 diabetes in Asian Indians: dietary strategies including edible oils, cooking practices and sugar intake. European Journal of Clinical Nutrition, 71(7), 850–857. https://doi.org/10.1038/ejcn.2017.92

Hargreaves, D., Pitchforth, J., Devakumar, D., Lawn, J., Hall, J., & Qureshi, Z. (2018). Adolescent non-communicable diseases (pp. 65–69). oxford university. https://doi.org/10.1093/med/9780198794684.003.0013

Harris, J. A., Rundle-Thiele, S., David, P., & Carins, J. (2022). Can social cognitive theory explain breakfast frequency in workplace institutional feeding populations? In Journal of Social Marketing (Vol. 12, Issue 4, pp. 373–394). emerald. https://doi.org/10.1108/jsocm-09-2021-0214

Hayat, N., Mustafa, G., Alotaibi, B. A., Nayak, R. K., & Naeem, M. (2023). Households' food consumption pattern in Pakistan: Evidence from recent household integrated economic survey. Heliyon, 9(9), e19518. https://doi.org/10.1016/j.heliyon.2023.e19518

HEC. (2021). Annual Report 2021-2022. Islamabad: Higher Education Comission. Retrieved from https://www.hec.gov.pk/english/news/AnnualReports/Annual%20Report%202021-22.pdf#search=annual%20report%202023.

Hoque, M. E., Doi, S. A., Mamun, A. A., Mannan, M., Niessen, L. W., & Long, K. (2014). Prevalence of overweight and obesity among children and adolescents of the Indian subcontinent: a meta-analysis. Nutrition Reviews, 72(8), 541–550. https://doi.org/10.1111/nure.12130

Igbal, K., Bibi, H., Igbal, J., Zafar, T., Igbal, Z., Afreen, M., & Usman, M. (2015). Effect of Iron Deficiency Anemia on Intellectual Performance of Primary School Children in Islamabad, Pakistan. Tropical Journal of Pharmaceutical Research, 14(2), 287. https://doi.org/10.4314/tjpr.v14i2.14

Imrey, P. B., Sobel, E., & Francis, M. E. (1979). Analysis of categorical data obtained by stratified random sampling. Communications in Statistics - Theory and Methods, 8(7), 653–670. https://doi.org/10.1080/03610927908827790

Iqbal, I., & Zaidi, N. P. (2022). Gender Inequality and Societal Oppression of Women in Pakistan (pp. 180–206). igi global. https://doi.org/10.4018/978-1-7998-8025-7.ch009

Iqbal, K., Moeen, M., Ali, A., & Iqbal, A. (2020). Mixture regression cum ratio estimators of population mean under stratified random sampling. Journal of Statistical Computation and Simulation, 90(5), 854–868. https://doi.org/10.1080/00949655.2019.1710149

Islam, K. F., Awal, A., Mazumder, H., Munni, U. R., Majumder, K., Afroz, K., Tabassum, M. N., & Hossain, M. M. (2023). Social cognitive theory-based health promotion in primary care practice: A scoping review. Heliyon, 9(4), e14889. https://doi.org/10.1016/j.heliyon.2023.e14889

Javed, Y., Ahmad, S., & Khahro, S. H. (2020). Evaluating the Research Performance of Islamabad-Based Higher Education Institutes. SAGE Open, 10(1), 215824402090208. https://doi.org/10.1177/2158244020902085

Jiang, W., Zhao, Y., Wu, X., Du, Y., & Zhou, W. (2023). Health inequalities of global protein-energy malnutrition from 1990 to 2019 and forecast prevalence for 2044: data from the Global Burden of Disease Study 2019. Public Health, 225, 102–109. https://doi.org/10.1016/j.puhe.2023.10.003

Joseph, P. L., Gonçalves, C., Fleary, S. A., & Marateb, H. R. (2023). Psychosocial correlates in patterns of adolescent emotional eating and dietary consumption. PLOS ONE, 18(5), e0285446. https://doi.org/10.1371/journal.pone.0285446

Kang, Y., Young, A. M. P., Kim, J., & Park, C. (2021). Socio-economic disparity in food consumption among young children in eight South Asian and Southeast Asian countries. Nutrition Research and Practice, 16(4), 489. https://doi.org/10.4162/nrp.2022.16.4.489

Karunanayake, D., Jayasooriya, M. W. D. S. M., & Vimukthi, N. D. U. (2020). Psychological Impact on the Eating Behaviors of University Students. South Asian Journal of Social Studies and Economics, 132–141. https://doi.org/10.9734/sajsse/2020/v8i430225

Kaur, T., & Agarwal, S. (2022). Correlation between Perceived Stress, Physical Fitness and Health Related Quality of Life in Young Adults. JOURNAL OF CLINICAL AND DIAGNOSTIC RESEARCH. https://doi.org/10.7860/jcdr/2022/56794.16418

Kazmi, T., Razzaq, S., Nagi, M., Shahid, N., Hussnain, S., & Athar, U. (2022). Burden of noncommunicable diseases in Pakistan. Eastern Mediterranean Health Journal = La Revue de Sante de La Mediterranee Orientale = Al-Majallah al-Sihhiyah Li-Sharq al-Mutawassit, 28(11), 798–804. https://doi.org/10.26719/emhj.22.083

Khan, R. S., Khan, S. S., & Siddique, R. (2022). Obesity amongst Medical Students - A Cross-Sectional Comparative Study from Lahore, Pakistan, 2022. Pakistan Journal of Medical and Health Sciences, 16(10), 18–20. https://doi.org/10.53350/pjmhs22161018

Khan, R., Bilal, A., Mustehsan, Z. H., Omar, J., Waqas, A., & Rahman, A. (2020). Association of Maternal depression with diet: A systematic review. Asian Journal of Psychiatry, 52, 102098. https://doi.org/10.1016/j.ajp.2020.102098

Khan, T. Z., & Mobin, T. (2023). Unraveling the Link Between Periodontal Disease and High Cholesterol: A Cross-Sectional Study. Cureus, 15(8). https://doi.org/10.7759/cureus.43463

Kramer, M. S. (2023). High Sugar Consumption and Diabetes Risk: A Sweet Lie (pp. 183–190). springer nature switzerland. https://doi.org/10.1007/978-3-031-46022-7_19

Kumar Paswan, V., Rathaur, A., Rose, H., Yamini, S., & Shekhar Singh, C. (2021). Herbs and Spices Fortified Functional Dairy Products. intechopen. https://doi.org/10.5772/intechopen.98775

Kumar Verma, M., Kumar Singh, B., & Tripathi, M. (2024). Dietary Determinants of Metabolic Syndrome: Focus on the Obesity and Metabolic Dysfunction-Associated Steatotic Liver Disease (MASLD). https://doi.org/10.5772/intechopen.114832

Le, T.-T., Nguyen, M.-H., Sari, N. P. W. P., Vuong, Q.-H., Tristiana, D., Jin, R., & Mazenda, A. (2023). What educational attainment and custom-based food choice affect health considerations in food consumption. center for open science. https://doi.org/10.31219/osf.io/drx76

Lee, S. Y., Agocha, V. B., Hernandez, P. R., Park, C. L., Williams, M., & Carney, L. M. (2021). Coping styles moderate the relationship between perceived discrimination and

eating behaviors during the transition to college. Appetite, 168, 105699. https://doi.org/10.1016/j.appet.2021.105699

Ljubičić, M., Szűcs, V., Korzeniowska, M., Đjekić, I., Nakić, D., Rumbak, I., Bolhuis, D., Bartkienė, E., Ranilović, J., Kļava, D., Tarcea, M., Sarić, A., Παπαγεωργιου, M., Klarin, I., Sarić, M., Barić, I., Vittadini, E., Černelič-Bizjak, M., Dželalija, B., & Guiné, R. (2023). Emotions and Food Consumption: Emotional Eating Behavior in a European Population. Foods (Basel, Switzerland), 12(4), 872. https://doi.org/10.3390/foods12040872

Machado, S., Karsiem, S., Lavergne, M. R., Goldenberg, S., & Wiedmeyer, M.-L. (2023). Respectful community engagement in health research with diverse im/migrant communities. In BMJ open (Vol. 13, Issue 12, p. e077391). https://doi.org/10.1136/bmjopen-2023-077391

Mahmood, L., Gonzalez-Gil, E. M., Manios, Y., Moreno, L. A., & Flores-Barrantes, P. (2021). The Influence of Parental Dietary Behaviors and Practices on Children's Eating Habits. Nutrients, 13(4), 1138. https://doi.org/10.3390/nu13041138

Maji, S., Bumbadiya, M., & Sao, K. (2023). Value Addition of Traditional Indian Dairy Products Using Herbs and Spices- An Overview. International Journal of Bio-Resource and Stress Management, 14(Mar 3), 400–406. https://doi.org/10.23910/1.2023.3363a

Malekzade, N., Janighorban, M., & Dadkhahtehrani, T. (2023). Correlation between Quality of Work-Life and Job Burnout in Midwives. Iranian Journal of Nursing and Midwifery Research, 28(2), 194–199. https://doi.org/10.4103/ijnmr.ijnmr_448_21

Mani, A., Asadollahi, S., Soltani, S., Ahmadzadeh, L., & Khabir, L. (2020). Comparison of Avoidance Coping Strategies Among Female College Students with Binge Eating and Healthy Controls. Hormozgan Medical Journal, 24(3), e102641. https://doi.org/10.5812/hmj.102641

Marques, D. R., Meia-Via, A. M. S., Da Silva, C. F., & Gomes, A. A. (2017). Associations between sleep quality and domains of quality of life in a non-clinical sample: results from higher education students. Sleep Health, 3(5), 348–356. https://doi.org/10.1016/j.sleh.2017.07.004

Martin, J. J., & Guerrero, M. D. (2020). Social cognitive theory (pp. 280–295). routledge. https://doi.org/10.4324/9780429052675-22

Matos, R. A., Sabaté, J., & Adams, M. (2021). Review: The Consumption of Ultra-Processed Foods and Non-communicable Diseases in Latin America. Frontiers in Nutrition, 8. https://doi.org/10.3389/fnut.2021.622714

Matsumoto, M., Ikemoto, S., Hatamoto, Y., Masumoto, A., & Sakamoto, A. (2020). Mothers' Nutrition Knowledge Is Unlikely to Be Related to Adolescents' Habitual Nutrient Intake Inadequacy in Japan: A Cross-Sectional Study of Japanese Junior High School Students. Nutrients, 12(9), 2801. https://doi.org/10.3390/nu12092801

Matvienko, O. (2016). Qualitative Analysis of Dietary Behaviors in Picture Book Fiction for 4- to 8-Year-Olds. Journal of Nutrition Education and Behavior, 48(9), 602-608.e1. https://doi.org/10.1016/j.jneb.2016.06.005

Mazzocchi, S., Visaggi, P., & Baroni, L. (2023). Plant-based diets in gastrointestinal diseases: Which evidence? Baillière's Best Practice and Research in Clinical Gastroenterology, 62–63, 101829. https://doi.org/10.1016/j.bpg.2023.101829

Mcewan, B. (2020). Sampling and validity. In Annals of the International Communication Association (Vol. 44, Issue 3, pp. 235–247). routledge. https://doi.org/10.1080/23808985.2020.1792793

Mehboob, R. (2023). The Impact of Ultra-Processed Foods on Diet Quality and Health Outcomes. DIET FACTOR (Journal of Nutritional and Food Sciences), 01. https://doi.org/10.54393/df.v4i01.70

Mehmood, S., Chong, L., & Hussain, M. (2018). Females Higher Education in Pakistan: An Analysis of Socio-Economic and Cultural Challenges. Advances in Social Sciences Research Journal, 5(6). https://doi.org/10.14738/assrj.56.4658

Mezzich, J. E. (2020). NEW DELHI DECLARATION 2018 ON PERSON-CENTERED CARE FOR NONCOMMUNICABLE DISEASES. International Journal of Person-Centered Medicine, 8(3). https://doi.org/10.5750/ijpcm.v8i3.887

Middleton, L., Raeside, R., & Hall, H. (2018). Applications and applicability of Social Cognitive Theory in information science research. Journal of Librarianship and Information Science, 51(4), 927–937. https://doi.org/10.1177/0961000618769985

Minallah, M. (2023). URBAN GROWTH AND SOCIO-ECONOMIC DEVELOPMENT IN GUJRANWALA, PAKISTAN: A GEOGRAPHICAL ANALYSIS. Pakistan Journal of Science, 68(2). https://doi.org/10.57041/pjs.v68i2.441

Mohamed Ahmed Ayed, M., Hamdy Abd El-Monem, H., & Abd Elaziem Mohamed, A. (2021). Effect of Iron Deficiency Anemia on Academic Performance among Primary School Children. Egyptian Journal of Health Care, 12(1), 418–432. https://doi.org/10.21608/ejhc.2021.141885

Mohamed, B. M. (2017). Systemic Challenges Facing Public Procurement Policy Development in Tanzania: An Institutional Analysis. Journal of Public Administration and Governance, 7(1). https://doi.org/10.5296/jpag.v7i1.10939

Mohammadi Hosseinabadi, S., & Nasrollahzadeh, J. (2021). Effects of diets rich in ghee or olive oil on cardiometabolic risk factors in healthy adults: a two-period, crossover, randomised trial. British Journal of Nutrition, 128(9), 1720–1729. https://doi.org/10.1017/s0007114521004645

Musingo, M. N., & Wang, L. (2009). Analysis of Eating Habits According to Socio-Demographic Characteristics of College Students. Pakistan Journal of Nutrition, 8(10), 1575–1580. https://doi.org/10.3923/pjn.2009.1575.1580

Naeem, M., Mahmood, Z., & Saleem, S. (2022). Development and Validation of Eating Problems Scale on Pakistani Youth Sample. Pakistan Journal of Psychological Research, 37(1), 1–20. https://doi.org/10.33824/pjpr.2022.37.1.01

Nascimento Santos, B. M., Almeida-Santos, M. A., Sobral Sousa, A. C., De Santana Pereira, J., Santos Rocha, R. M., Aidar, F. J., Dos Santos Vieira, D. A., Batista Oliveira, V., Cândido De Souza, M. F., & Rocha De Almeida, R. (2022). Influence of eating behaviors on dietary intake and quality of life among low-income bariatric surgery candidates: A preliminary study. Obesity Medicine, 33, 100428. https://doi.org/10.1016/j.obmed.2022.100428

National Institute of Population Studies (NIPS) [Pakistan] and ICF. 2019. *Pakistan Demographic and Health Survey 2017-18*. Islamabad, Pakistan, and Rockville, Maryland, USA: NIPS and ICF

Obregon, M., Luo, J., Shelton, J., Macdowell, M., & Blevins, T. (2020). Assessment of Burnout in Medical Students Using the Maslach Burnout Inventory-Student Survey: A Cross-Sectional Data Analysis. research square platform llc. https://doi.org/10.21203/rs.3.rs-30445/v1

Omair, A. (2014). Sample size estimation and sampling techniques for selecting a representative sample. Journal of Health Specialties, 2(4), 142. https://doi.org/10.4103/1658-600x.142783

Orihuela, C. A., Mrug, S., & Boggiano, M. M. (2017). Reciprocal relationships between emotion regulation and motives for eating palatable foods in African American adolescents. Appetite, 117, 303–309. https://doi.org/10.1016/j.appet.2017.07.008

Pakistan Bureau of Statistics. (2018). Pakistan Labour Force Survey 2017-18. Islamabad, Pakistan: Pakistan Bureau of Statistics. Retrieved from http://www.pbs.gov.pk World

Bank. (2023). Global Economic Prospects: Slow growth, high inflation, and the impact of the COVID-19 pandemic. Washington, DC: World Bank. Retrieved from Global Economic Prospects

Pakistan Institute of Development Economics (PIDE). (2021). Health and Economic Consequences of Overweight and Obesity Among Adults in Pakistan. PIDE Working Papers. Retrieved from PIDE Research

Papier, K., Ahmed, F., Lee, P., & Wiseman, J. (2014). Stress and dietary behaviour among first-year university students in Australia: Sex differences. Nutrition, 31(2), 324–330. https://doi.org/10.1016/j.nut.2014.08.004

Parmar, M., Chaudhary, M., Goyal, G. K., & Gupta, K. (2021). An Epidemiological Study to Assess Prevalence and Risk factors Associated with Diabetes Among Adolescents in Urban Areas of Udaipur. Healthline, 12(1), 22–28. https://doi.org/10.51957/healthline_170_2020

Pérez-Mármol, J. M., & Brown, T. (2018). An Examination of the Structural Validity of the Maslach Burnout Inventory-Student Survey (MBI-SS) Using the Rasch Measurement Model. Health Professions Education, 5(3), 259–274. https://doi.org/10.1016/j.hpe.2018.05.004

Qureshi, A., Fatima, D., Sandhu, K., Kamran, H., & Aslam, M. (2022). Comparison of Dietary Habits and Psychological Outcomes in Hostelites and Day Scholars. DIET FACTOR (Journal of Nutritional & Food Sciences), 22–27. https://doi.org/10.54393/df.v3i02.60

Rachas, A., Barthélémy, P., Mette, C., Lastier, D., Gissot, C., Drouin, J., Constantinou, P., Gastaldi-Ménager, C., Denis, P., Lesuffleur, T., Tajahmady, A., Fagot-Campagna, A., Pestel, L., Nicolas, M., & Rivière, S. (2022). The Economic Burden of Disease in France from the National Health Insurance Perspective: The Healthcare Expenditures and Conditions Mapping Used to Prepare the French Social Security Funding Act and the Public Health Act. Medical Care, 60(9), 655–664. https://doi.org/10.1097/mlr.0000000000001745

Rajput, C. (2024). Impact of Stress on Eating Behavior among College Students. International Journal for Multidisciplinary Research, 6(1). https://doi.org/10.36948/ijfmr.2024.v06i01.12819

Raza, I., & Awang, Z. (2020). Knowledge-sharing practices in higher educational institutes of Islamabad, Pakistan: an empirical study based on theory of planned behavior. Journal of

Applied Research in Higher Education, 13(2), 466–484. https://doi.org/10.1108/jarhe-03-2020-0068

Reuter, P. R., Forster, B. L., & Brister, S. R. (2020). The influence of eating habits on the academic performance of university students. Journal of American College Health: J of ACH, 69(8), 921–927. https://doi.org/10.1080/07448481.2020.1715986

Risti, K. N., Pamungkasari, E. P., & Suminah, S. (2021). RELATIONSHIP OF PEER INFLUENCE AND FAMILY EATING HABITS ON HEALTHY FOOD CHOICES IN OVERWEIGHT ADOLESCENTS IN SURAKARTA. Media Gizi Indonesia, 16(2), 124. https://doi.org/10.20473/mgi.v16i2.124-129

Saghir, A., Gulab, S. A., Akhtar, M., Kausar, S., Khan, Z., Akbar, Z., Iftikhar, M., & Khan, R. (2023). Energy Drink Consumption and Eating Habits among Students of a Public Sector University in Islamabad, Pakistan. Pakistan Journal of Public Health, 13(3), 94–97. https://doi.org/10.32413/pjph.v13i3.1178

Saqib, M. A. N., Ansar, M., Rafique, I., & Rahat, T. (2022). HIGH SALT INTAKE IMPLICATIONS AS RISK FACTOR FOR HYPERTENSION AND COMPARISON OF THREE SALT ESTIMATION METHODS- FINDINGS FROM ISLAMABAD, PAKISTAN. Pakistan Heart Journal, 54(4), 309–314. https://doi.org/10.47144/phj.v54i4.2156

Schaufeli, W. B., Bakker, A. B., González-Romá, V., & Salanova, M. (2002). The Measurement of Engagement and Burnout: A Two Sample Confirmatory Factor Analytic Approach. Journal of Happiness Studies, 3(1), 71–92. https://doi.org/10.1023/a:1015630930326

Schepens Niemiec, S. L., Carlson, M., Martínez, J., Blanchard, J., & Vigen, C. L. P. (2021). Long-Term Follow-Up of a Lifestyle Intervention for Late-Midlife, Rural-Dwelling Latinos in Primary Care. American Journal of Occupational Therapy, 75(2). https://doi.org/10.5014/ajot.2021.042861

Schlundt, D. G., Hargreaves, M. K., & Buchowski, M. S. (2003). The Eating Behavior Patterns Questionnaire predicts dietary fat intake in African American women. Journal of the American Dietetic Association, 103(3), 338–345. https://doi.org/10.1053/jada.2003.50049

Schnettler, B., Sanchez, M., Miranda, H., Miranda-Zapata, E., Sepúlveda, J., Denegri, M., Grunert, K. G., Höger, Y., Lobos, G., Orellana, L., & Salinas-Oñate, N. (2017). Food neophobia, life satisfaction and family eating habits in university students. Cadernos de Saúde Pública, 33(3). https://doi.org/10.1590/0102-311x00165615

Sheikh, S., Barolia, R., Habib, A., Azam, I., Qureshi, R., & Iqbal, R. (2024). “If the food is finished after my brother eats then we (girls) sleep hungry.” Food insecurity and dietary diversity among slum-dwelling adolescent girls and boys in Pakistan: A mixed methods study. Appetite, 195, 107212. https://doi.org/10.1016/j.appet.2024.107212

Sheikh, S., Iqbal, R., Barolia, R., Azam, I., & Qureshi, R. (2020). Adolescent food insecurity in rural Sindh, Pakistan: a cross-sectional survey. BMC Nutrition, 6(1). https://doi.org/10.1186/s40795-020-00343-w

Shrestha, A., Mattei, J., Spiegelman, D., Tamrakar, D., Pyakurel, P., Karmacharya, B. M., Shrestha, A., Rhodes, E., Manandhar, N., Gautam, R., & Malik, V. (2017). Facilitators and barriers to healthy eating in a worksite cafeteria: a qualitative study from Nepal. Heart Asia, 9(2), e010956. https://doi.org/10.1136/heartasia-2017-010956

Shuja, S., Ategbo, E. A., Sheraz, S. Y., Khan, W., Mahmood, H., & Kiani, H. (2022). Enablers and Barriers to Adequate Complementary Feeding (CF) Practices in Pakistan; Secondary Analysis of Formative Research on National CF Assessment (NCFA). research square platform llc. https://doi.org/10.21203/rs.3.rs-1641541/v2

Skevington, S. M., Lotfy, M., & O’Connell, K. A. (2004). The World Health Organization’s WHOQOL-BREF quality of life assessment: psychometric properties and results of the international field trial. A report from the WHOQOL group. Quality of Life Research, 13(2), 299–310. https://doi.org/10.1023/b:qure.0000018486.91360.00

Smith, J. M., Serier, K. N., Belon, K. E., Sebastian, R. M., & Smith, J. E. (2020). Evaluation of the relationships between dietary restraint, emotional eating, and intuitive eating moderated by sex. Appetite, 155, 104817. https://doi.org/10.1016/j.appet.2020.104817

Stein, M. D., & Galea, S. (2020). Zero Tolerance for Preventable Deaths (pp. 233–236). oxford university pressnew york. https://doi.org/10.1093/oso/9780197510384.003.0067

Sugara, G. S., Ilfiandra, I., Nurihsan, J., & Rakhmat, C. (2020). Quality of Life and Burnout among University Students. Universal Journal of Educational Research, 8(8), 3742–3750. https://doi.org/10.13189/ujer.2020.080855

Tanveer, M., Hohmann, A., Tanveer, U., Roy, N., Siener, M., & Zeba, A. (2022). The Current Prevalence of Underweight, Overweight, and Obesity Associated with Demographic Factors among Pakistan School-Aged Children and Adolescents-An Empirical Cross-Sectional Study. International Journal of Environmental Research and Public Health, 19(18), 11619. https://doi.org/10.3390/ijerph191811619

Tariq, M. N. M., Stojanovska, L., Cheikh Ismail, L., Apostolopoulos, V., Ali, H. I., & Dhaheri, A. S. A. (2022). Lifestyle Interventions for Prevention and Management of Diet-

Linked Non-Communicable Diseases among Adults in Arab Countries. Healthcare, 11(1), 45. https://doi.org/10.3390/healthcare11010045

Tehrani, M., & Pourabbasi, A. (2020). Eating Behaviors vs. BMI: which is more related with Health-Related Quality of Life? A Cross-Sectional Study on Iranian Female Adolescents. International Journal of School Health, 7(1), 1–5. https://doi.org/10.30476/intjsh.2020.83598.1019

Torkan, N., Paknahad, Z., Kazemi, A., & Bahadoran, P. (2018). Relationship of Social Cognitive Theory Concepts to Dietary Habits of Pregnant Women. Iranian Journal of Nursing and Midwifery Research, 23(2), 125. https://doi.org/10.4103/ijnmr.ijnmr_157_16

Tran, T. X., Ho, C., & Vo, T. T. T. (2023). From Academic Resilience to Academic Burnout among International University Students during the Post-COVID-19 New Normal: An Empirical Study in Taiwan. Behavioral Sciences, 13(3), 206. https://doi.org/10.3390/bs13030206

UNICEF. (2019). National Nutrition Survey 2018. Key findings report: A summary of the key insights and statistics. UNICEF Pakistan. https://www.unicef.org/pakistan/reports/national-nutrition-survey-2018-key-findings-report

Vidgen, H. A., & Gallegos, D. (2023). Nutrition and food literacy: Framing the challenges to health communication. Nutrients, 15(22), 4708. https://doi.org/10.3390/nu15224708

Vilugrón Aravena, F., Font-Mayolas, S., Gras Pérez, M. E., & Molina G, T. (2020). Association between eating habits and health related quality of life among school age adolescents. Revista Medica de Chile, 148(7), 921–929. https://doi.org/10.4067/s0034-98872020000700921

Voloshchenko, Y. (2023). QUALITY OF LIFE OF YOUNG PEOPLE. VERIFICATION OF THE ADAPTATION OF THE UKRAINIAN VERSION OF THE BRIEF QUALITY OF LIFE QUESTIONNAIRE (WHOQOL-BREF) AMONG FIRST-YEAR STUDENTS OF BORYS GRINCHENKO KYIV UNIVERSITY. Sport Science and Human Health, 10(2). https://doi.org/10.28925/2664-2069.2023.24

Wagner, E., Davis, J. P., & Spadola, C. (2020). Addictive behaviors during emerging adulthood (pp. 232–246). routledge. https://doi.org/10.4324/9780429203121-16

Walker, A. N., Wei, T., Feng, Y., Zhang, Y., Zhong, Y., Zaitoun, M., Li, B., Chen, Q., Feng, Q., Yakubu, S., Priddy, C. B., Bafei, S. E. C., & Weeto, M. M. (2023). Healthy eating habits and a prudent dietary pattern improve Nanjing international students' health-related quality of life. Frontiers in Public Health, 11. https://doi.org/10.3389/fpubh.2023.1211218

Wang, N. X., Mclean, R. M., Cameron, C., & Skeaff, S. A. (2023). The quantification of sodium intake from discretionary salt intake in New Zealand using the lithium-tagged salt method. Frontiers in Nutrition, 9. https://doi.org/10.3389/fnut.2022.1065710

Wattick, R. A., Hagedorn, R. L., & Olfert, M. D. (2018). Relationship between Diet and Mental Health in a Young Adult Appalachian College Population. Nutrients, 10(8), 957. https://doi.org/10.3390/nu10080957

Wei, H., Hutto, H., Larson, K., Dorn, A., Haberstroh, A., & Webb Corbett, R. (2021). Impacts of Nursing Student Burnout on Psychological Well-Being and Academic Achievement. Journal of Nursing Education, 60(7), 369–376. https://doi.org/10.3928/01484834-20210616-02

Williams, S. G., Hall, H., Fruh, S., Mcdermott, R., Wright, T., Carter, C., Graves, R., & Swanzy, D. (2018). Nursing Student Satisfaction with Daily Life: A Holistic Approach. The Journal of Nursing Education, 57(12), 751–755. https://doi.org/10.3928/01484834-20181119-09

Woo, T., Lee, K.-H., Contento, I., Gray, H. L., & Kwak, S. (2017). Examining Associations Among Psychosocial Determinants of Vegetable Consumption in Korean Adolescents, Using Social Cognitive Theory (SCT). Journal of Nutrition Education and Behavior, 49(7), S28. https://doi.org/10.1016/j.jneb.2017.05.301

World Health Organization. (1998). World Health Organization. The WHOQOL Group. The development of the World Health Organization WHOQOL-BREF quality of life assessment. Psychol. Med 1998; 28(3):551-558. Global Obesity Observatory: Pakistan. (2024).

World Health Organization. (2020). Global action plan for the prevention and control of noncommunicable diseases 2013-2020. Retrieved from https://www.who.int/publications/i/item/9789241506236.

World Health Organization: WHO. (2020, April 29). Healthy diet. https://www.who.int/news-room/fact-sheets/detail/healthy-diet

World Health Organization. *Noncommunicable Diseases (NCD)*. (2019). Available online at: https://www.who.int/gho/ncd/mortality_morbidity/en/ (accessed January 03, 2024).

World Health Organization. (2013). Global action plan for the prevention and control of noncommunicable diseases 2013-2020. https://www.who.int/publications/i/item/9789241506236

World Obesity Federation Global Obesity Observatory. https://data.worldobesity.org/country/pakistan-167/

Ebrahim, Z. T. (2019, September 24). THE FAULT IN OUR LIFESTYLES. DAWN.COM. https://www.dawn.com/news/1506311

World Obesity Federation. (2023). World Obesity Atlas 2023. Retrieved from https://www.worldobesity.org/news/economic-impact-of-overweight-and-obesity-to-surpass-4-trillion-by-2035.

Bandura, A. (1986). Social foundations of thought and action: A social cognitive theory. Englewood Cliffs, NJ: Prentice-Hall. FIELD A. (2009): Discovering statistics using SPSS. 3 ed. SAGE publications Ltd., London

Wu, X. Y., Guo, H. W., Li, W., Zhao, Y. K., Luo, S., Zhuang, L. H., Gao, Q. Q., Hu, J. W., Ohinmaa, A., Veugelers, P. J., & Zhang, J. H. (2019). The influence of diet quality and dietary behavior on health-related quality of life in the general population of children and adolescents: a systematic review and meta-analysis. Quality of Life Research, 28(8), 1989–2015. https://doi.org/10.1007/s11136-019-02162-4

Wüst, M., & Ruttke Dillenburg Osório, D. (2022). Influence of stress and anxiety on students' eating habits during the pandemic. O Mundo da Saúde, 46, 607–619. https://doi.org/10.15343/0104-7809.202246607619i

Zamhari, M. (2023). CULINARY IN ISLAMIC-JAVANESE CULTURAL HERITAGE FROM A CHEMISTRY PERSPECTIVE. Journal of Tropical Chemistry Research and Education, 5(2), 43–59. https://doi.org/10.14421/jtcre.2023.52-05

Zhang, J., Hua, T., Jia, J.-M., Erchen, Q., Ning, T., Song, Z., & Liu, J. (2017). Effects of job burnout and work satisfaction on the quality of life for army recruits. Chinese Journal of Behavioral Medicine and Brain Science, 26(1), 64–69. https://doi.org/10.3760/cma.j.issn.1674-6554.2017.01.014

Zielińska, M., Dereń, K., & Łuszczki, E. (2023). Dietary Nutrient Deficiencies and Risk of Depression (Review Article 2018-2023). Nutrients, 15(11), 2433. https://doi.org/10.3390/nu15112433

Zuleika, P., & Legiran, L. (2022). Cross-Sectional Study as Research Design in Medicine. Archives of The Medicine and Case Reports, 3(2), 256–259. https://doi.org/10.37275/amcr.v3i2.193

# APPENDIX

Please read each question, assess your feelings, and circle the number on the scale for each question.

| DEMOGRAPHIC SHEET | |
|---|---|
| Sex | ☐**Female** ☐ **Male** |
| Age | ☐ **16-18** ☐ **19-21** ☐ **22-25** |
| Education | ☐ **BS** ☐ **MS** |
| Year Level | **1st year** **2nd year** **3rd year** **4th year** |
| Marital Status | ☐ **Single** ☐**Married** |
| Residence | ☐ **Day scholar** (LIVE WITH PARENTS/GUARDIAN) ☐**Hostelite** |

| | | never | A few times a year or less | Once a month or less | A few times a month | Once a week | A few times a week | Every -day |
|---|---|---|---|---|---|---|---|---|
| 1 | I feel emotionally drained by my studies. | 0 | 1 | 2 | 3 | 4 | 5 | 6 |
| 2 | I have become less interested in my studies since my enrolment at the university. | 0 | 1 | 2 | 3 | 4 | 5 | 6 |
| 3 | I can effectively solve the problems that arise in my studies. | 0 | 1 | 2 | 3 | 4 | 5 | 6 |
| 4 | I feel used up at the end of a day at university | 0 | 1 | 2 | 3 | 4 | 5 | 6 |
| 5 | I have become less enthusiastic about my studies. | 0 | 1 | 2 | 3 | 4 | 5 | 6 |
| 6 | I believe that I make an effective contribution to the classes that I attend | 0 | 1 | 2 | 3 | 4 | 5 | 6 |
| 7 | I feel burned out from my studies. | 0 | 1 | 2 | 3 | 4 | 5 | 6 |
| 8 | In my opinion, I am a good student. | 0 | 1 | 2 | 3 | 4 | 5 | 6 |
| 9 | I have learned many interesting things during the course of my studies. | 0 | 1 | 2 | 3 | 4 | 5 | 6 |
| 10 | I feel fatigued when I get up in the morning and I have to face another day of academic responsibilities | 0 | 1 | 2 | 3 | 4 | 5 | 6 |
| 11 | I have become more cynical about the potential usefulness of my studies. | 0 | 1 | 2 | 3 | 4 | 5 | 6 |
| 12 | I feel stimulated when I achieve my study goals. | 0 | 1 | 2 | 3 | 4 | 5 | 6 |
| 13 | Studying or attending a class is really a strain for me. | 0 | 1 | 2 | 3 | 4 | 5 | 6 |
| 14 | I doubt the significance of my studies. | 0 | 1 | 2 | 3 | 4 | 5 | 6 |
| 15 | During class I feel confident that I am effective in getting things done | 0 | 1 | 2 | 3 | 4 | 5 | 6 |

| | | Not at all | A little | A moderate amount | Very much/ mostly | An extreme amount/ completely |
|---|---|---|---|---|---|---|
| 1 | To what extent do you feel that physical pain prevents you from doing what you need to do? | 1 | 2 | 3 | 4 | 5 |
| 2 | How much do you need any medical treatment to function in your daily life? | 1 | 2 | 3 | 4 | 5 |
| 3 | How much do you enjoy your life? | 1 | 2 | 3 | 4 | 5 |
| 4 | To what extent do you feel your life to be meaningful? | 1 | 2 | 3 | 4 | 5 |
| 5 | How well are you able to concentrate? | 1 | 2 | 3 | 4 | 5 |
| 6 | How safe do you feel in your daily life? | 1 | 2 | 3 | 4 | 5 |
| 7 | How healthy is your physical environment? | 1 | 2 | 3 | 4 | 5 |
| 8 | Do you have enough energy for everyday life? | 1 | 2 | 3 | 4 | 5 |
| 9 | Are you able to accept your bodily appearance? | 1 | 2 | 3 | 4 | 5 |
| 10 | Have you enough money to meet your needs? | 1 | 2 | 3 | 4 | 5 |
| 11 | How available to you is the information that you need in your day-to-day life? | 1 | 2 | 3 | 4 | 5 |
| 12 | To what extent do you have the opportunity for leisure activities? | 1 | 2 | 3 | 4 | 5 |
| 13 | How well are you able to get around? | Very poor | poor | Neither poor nor good | good | Very good |
| 14 | How satisfied are you with your sleep? | Very dissatisfied | dissatisfied | neither | satisfies | Very satisfied |
| 15 | How satisfied are you with your ability to perform your daily living activities? | 1 | 2 | 3 | 4 | 5 |
| 16 | How satisfied are you with your capacity for work? | 1 | 2 | 3 | 4 | 5 |
| 17 | How satisfied are you with yourself? | 1 | 2 | 3 | 4 | 5 |
| 18 | How satisfied are you with your personal relationships? | 1 | 2 | 3 | 4 | 5 |
| 19 | How satisfied are you with the support you get from your friends? | 1 | 2 | 3 | 4 | |
| 20 | How satisfied are you with the conditions of your living place? | 1 | 2 | 3 | 4 | 5 |
| 21 | How satisfied are you with your access to health services? | 1 | 2 | 3 | 4 | 5 |
| 22 | How satisfied are you with your transport? | 1 | 2 | 3 | 4 | 5 |
| 23 | How often do you have negative feelings? Such as blue mood, despair, anxiety, depression? | never | seldom | Quite often | very often | always |

| | | Strongly Disagree | Disagree | Neutral | Agree | Strongly Agree |
|---|---|---|---|---|---|---|
| 1 | I reduce fat in recipes by substituting ingredients and cutting portions. | 1 | 2 | 3 | 4 | 5 |
| 2 | I am very conscious of how much fat is in the food I eat | 1 | 2 | 3 | 4 | 5 |
| 3 | I use low-fat food products. | 1 | 2 | 3 | 4 | 5 |
| 4 | I choose healthy foods to prevent heart disease. | 1 | 2 | 3 | 4 | 5 |
| 5 | I count fat grams. | 1 | 2 | 3 | 4 | 5 |
| 6 | I carefully watch the portion sizes of my foods. | 1 | 2 | 3 | 4 | 5 |
| 7 | When choosing fast food, I pick a place that offers healthy foods. | 1 | 2 | 3 | 4 | 5 |
| 8 | Fish and poultry are the only meats I eat. | 1 | 2 | 3 | 4 | |
| 9 | I like to eat vegetables seasoned with fatty meat. | 1 | 2 | 3 | 4 | 5 |
| 10 | I eat meatless meals from time to time because I think that is healthier for me. | 1 | 2 | 3 | 4 | 5 |
| 11 | I buy snacks from vending machines. | 1 | 2 | 3 | 4 | 5 |
| 12 | I take a shopping list to the store. | 1 | 2 | 3 | 4 | 5 |
| 13 | Instead of planning meals, I choose what is available and what I feel like eating. | 1 | 2 | 3 | 4 | 5 |
| 14 | I try to limit my intake of red meat. | 1 | 2 | 3 | 4 | 5 |
| 15 | I eat when I'm upset. | 1 | 2 | 3 | 4 | 5 |
| 16 | When I am in a bad mood, I eat whatever I feel like eating. | 1 | 2 | 3 | 4 | 5 |
| 17 | I eat for comfort. | 1 | 2 | 3 | 4 | 5 |
| 18 | My emotions affect what and how much I eat. | 1 | 2 | 3 | 4 | 5 |
| 19 | If I am bored, I will snack more. | 1 | 2 | 3 | 4 | 5 |
| 20 | I sometimes snack even when I am not hungry. | 1 | 2 | 3 | 4 | 5 |
| 21 | I am a snacker. | 1 | 2 | 3 | 4 | 5 |
| 22 | I snack more at night. | 1 | 2 | 3 | 4 | 5 |
| 23 | When I buy snack foods, I eat until I have finished the whole package. | 1 | 2 | 3 | 4 | 5 |
| 24 | When I am upset, I tend to stop eating. | 1 | 2 | 3 | 4 | 5 |
| 25 | Sometimes I eat dessert more than once a day. | 1 | 2 | 3 | 4 | 5 |
| 26 | I usually keep cookies in the house. | 1 | 2 | 3 | 4 | 5 |
| 27 | I have a sweet tooth. | 1 | 2 | 3 | 4 | 5 |
| 28 | I eat cookies, candy bars, or ice cream in place of dinner. | 1 | 2 | 3 | 4 | 5 |
| 39 | I snack two to three times every day. | 1 | 2 | 3 | 4 | 5 |
| 30 | To me, cookies are an ideal snack food. | 1 | 2 | 3 | 4 | 5 |
| 31 | On Sunday, I eat a large meal with my family. | 1 | 2 | 3 | 4 | 5 |
| 32 | I buy meat every time I go to the grocery store. | 1 | 2 | 3 | 4 | 5 |

| | | | | | | |
|---|---|---|---|---|---|---|
| 33 | I associate success with food. | 1 | 2 | 3 | 4 | 5 |
| 34 | I have a serving of meat at every meal. | 1 | 2 | 3 | 4 | 5 |
| 35 | I take time to plan meals for the coming week. | 1 | 2 | 3 | 4 | 5 |
| 36 | A complete meal includes a meat, a starch, a vegetable, and bread. | 1 | 2 | 3 | 4 | 5 |
| 37 | I eat at social gatherings. | 1 | 2 | 3 | 4 | 5 |
| 38 | I would rather buy take-out food and bring it home than cook. | 1 | 2 | 3 | 4 | 5 |
| 39 | I eat out because it is more convenient than eating at home. | 1 | 2 | 3 | 4 | 5 |
| 40 | I stop for a fast-food breakfast on the way to work. | 1 | 2 | 3 | 4 | 5 |
| 41 | When I don't plan meals, I eat fast food. | 1 | 2 | 3 | 4 | 5 |
| 42 | I have at least three to four servings of vegetables per day. | 1 | 2 | 3 | 4 | 5 |
| 43 | My eating habits are very routine. | 1 | 2 | 3 | 4 | 5 |
| 44 | I eat at a fast-food restaurant at least three times a week. | 1 | 2 | 3 | 4 | 5 |
| 45 | I hate to cook. | 1 | 2 | 3 | 4 | 5 |
| 46 | I never know what I am going to eat for supper when I get up in the morning. | 1 | 2 | 3 | 4 | 5 |
| 47 | If I do not feel hungry, I will skip a meal even if it is time to eat. | 1 | 2 | 3 | 4 | 5 |
| 48 | If I eat a larger-than-usual lunch, I will skip supper. | 1 | 2 | 3 | 4 | 5 |
| 49 | If I eat a larger-than-usual lunch, I will replace supper with a snack. | 1 | 2 | 3 | 4 | 5 |
| 50 | I rarely eat breakfast. | 1 | 2 | 3 | 4 | 5 |
| 51 | If I am busy, I will eat a snack instead of lunch. | 1 | 2 | 3 | 4 | 5 |

Muhammad Ahmad Khan (PhD)
Assistant Professor
Department of Development Studies
School of Social Science & Humanities
NUST Sector H-12 Islamabad

Anaya Manahil

ORIGINALITY REPORT

| 12% | 8% | 6% | 4% |
|---|---|---|---|
| SIMILARITY INDEX | INTERNET SOURCES | PUBLICATIONS | STUDENT PAPERS |

PRIMARY SOURCES

| | | |
|---|---|---|
| 1 | www.nsf.gov.lk<br>Internet Source | 1% |
| 2 | www.mdpi.com<br>Internet Source | 1% |
| 3 | Submitted to Higher Education Commission Pakistan<br>Student Paper | <1% |
| 4 | www.ncbi.nlm.nih.gov<br>Internet Source | <1% |
| 5 | ejournal.almaata.ac.id<br>Internet Source | <1% |
| 6 | www.researchsquare.com<br>Internet Source | <1% |
| 7 | www.researchgate.net<br>Internet Source | <1% |
| 8 | fastercapital.com<br>Internet Source | <1% |
| 9 | Nathan, T.M.. "The Relationship Between Weight-Related Attitudes and Behaviors in African American Males Attending College", Journal of the American Dietetic Association, 200608<br>Publication | <1% |
| 10 | educationaltechnologyjournal.springeropen.com<br>Internet Source | <1% |
| 11 | rua.ua.es<br>Internet Source | <1% |
| 12 | uis.brage.unit.no<br>Internet Source | <1% |
| 13 | Sims, R.. "Perceived stress and eating behaviors in a community-based sample of | <1% |

S³H

**SCHOOL OF SOCIAL SCIENCES & HUMANITIES (S3H)**
NATIONAL UNIVERSITY OF SCIENCES AND TECHNOLOGY (NUST)

Ethical approval Letter Ref: 0839/Ethic/07/S3H/20/DDS

## Ethics Clearance Certificate

**Project Title:** Feeding Future: Examining Youth Eating Behavior Patterns Through Social and Psychological Lens

**Investigators:** Anaya Manahil

**Co-Investigator(s):**

**Contact Details of Investigators:** 0334-9285351

**Discipline:** Dept of Development Studies

**Project Location:** NUST, H-12 Campus, Islamabad

**Project Duration:** 08 Months

It meets the requirements and ethical guidelines set out by School of Social Sciences and Humanities (S3H) Ethics Committee. There is no need to take separate informed human participation consent. This project is **Approved** subject to the following conditions:

It is the Investigator's responsibility to ensure that all researchers associated with this project are aware of the conditions of approval and which documents have been approved.

The investigator is required to notify the Research Ethics Committee, via amendment or progress report, of:

- Any significant change to the project and the reason for that change, including an indication of ethical implications (if any);
- Serious adverse effects on participants and the action taken to address those effects;
- Any other unforeseen events or unexpected developments that merit notification;
- The inability of the investigator to continue in that role, or any other change in research personnel involved in the project;
- A delay of more than 6 months in the commencement of the project; and,
- Termination or closure of the project.

Additionally, the Principal Researcher is required to submit

- A Progress Report on the anniversary of approval and on completion of the project.

The Ethics Committee may conduct an audit at any time.

Chairperson
Research Ethics Committee S³H
NUST, H-12, Islamabad

Dr. Ume Laila
Chair of School Ethics Committee
Associate Professor
School of Social Sciences and Humanities (S3H)
National University of Sciences and Technology
Date: May 24, 2024

Sector H-12, Islamabad, Pakistan. Tele: +92-51-90853503, +92-51-90853501,E-mail: s3h@nust.edu.pk