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School of Nursing and Midwifery

PREVALENCE OF TYPE A AND TYPE B PERSONALITY AMONG UNDERGRADUATE NURSING STUDENTS AT PRIVATE SCHOOL OF NURSING KARACHI PAKISTAN: A CROSS-SECTIONAL ANALYTICAL STUDY

By

FARHANA SHAHEEN

Student of Master of Science in Nursing (MScN)

A thesis submitted in partial fulfilment of the requirements for the degree of

Master of Science in Nursing

Karachi, Pakistan

17, November 2023

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Aga Khan University

School of Nursing and Midwifery

Submitted In partial fulfillment of the requirements for the degree of
[Master of Science in Nursing]

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Dedication

This thesis is a heartfelt dedication to my late mother, “Shah Jahan Bano,” whose influence has been pivotal in shaping the person I am today. I extend my sincere appreciation to my father, Muhammad Aslam Shaheen, for his unwavering support in fostering my pursuit of higher education. His mentorship not only ignited my passion for knowledge but also provided invaluable resources.

In addition, I dedicate this thesis to my husband, Muhammad Imran, whose steadfast support has been the foundation of my academic achievements, and to my son, M. Abu Bakar, whose presence always filled my heart with immeasurable delight. I also want to express my gratitude to my siblings and friends for their significant contributions, their love and support have added a remarkable value to my scholarly journey.

Abstract

Background

Academic institutions strive for exceptional graduates. However, personality and learning psychology affect student performance. Type A personality students may develop heart palpitations due to impatience and stress. They are less sociable than Type B personalities but more idealistic, competitive, and deadline oriented. These disparities among personalities may impair their academic and job success, especially in healthcare, where interpersonal skills are vital.

Aims

The primary aim of the study was to find out the prevalence of Type A and Type B personality among undergraduate nursing students and to find the association between personality Types and academic years.

Methodology

In this quantitative study, a cross-sectional analytical research design was employed to analyse research concerns. In Karachi, Pakistan, the two private SONAM of AKUH and MH&HCC were studied. A proportionate sample of 136 nursing students filled out a Google form to respond on BAI scale items; IBM SPSS 22 analysed the data. Chi-square assessed the relationship between personality types (A&B) and academic years; binary logistic regression modeled it. The study ERC authorised by AKUH.

Results

At both institutes, 21.3% were Type A and 78.7% Type B nursing undergraduates. Institutional findings were significant in binary logistic regression. Year-I had 22.9%, Years-II, and III had 23.5% Type A students, while Year-IV had 15.2%. Additionally, Year-I had 77.1%, Years-II and III had 76.5%, and Year-IV had 84.8% Type B students. Among 50.7% female and

49.3% male students, female had 14% Type A compared to male 7.4%. Subsequently, Type Bs were more prevalent in males 41.9% compared to females 36.8%.Though statistically insignificant results were found at 95% CI.

Conclusion

The study showed both personality types are common across academic years. Personality types and academic years correlated significantly for nursing students. Type A personality developed with time but declined in the final year. Type B personalities showed inverse patterns. Undergraduates in the final year nursing program had more Type B than Type A personality. After the assessments of personality types, nursing students can enhance their physical and mental health with emotional rehabilitation program. Hence, Institutes can effectively produce talented and market-ready nursing graduates.

List of Abbreviation /Acronyms

AKHU	Aga Khan University Hospital
AKU SONAM	Aga Khan University School of Nursing and Midwifery
APA	American Psychological Association
BAI	Beck Anxiety Inventory
BScN	Bachelor of Science in Nursing
CAD	Coronary Artery Disease
CAT	College Adjustment Test
CHD	Coronary/Cardiac Heart Disease
COVID-19	Corona Virus Disease 2019
CI	Confidence Interval
CINAHL	Cumulative Index to Nursing & Allied Health Literature
CVD	CardioVascular Disease
EI	Emotional Intelligence
ERC	Ethical Review Committee
GPA	Grade Points Average
IBM	International Business Machines Corporation
IQ	Intelligence Quotient
MBTI	Myers Briggs Type Indicators
MH&HCC	Murshid Hospital and Health Care Centre
M-SONAM	Murshid School of Nursing and Midwifery
NA	Not Applicable
OR	Odds Ratio

Post RN BScN	Post Registered Nurse Bachelor of Science in Nursing
PDHS	Pakistan Demographic Health Survey
PRISMA	Preferred Reporting Items for Systematic Reviews and Meta-Analysis
SCT	Social Cognitive Theory
SPSS	Statistical Package for the Social Sciences
TABP	Type A Behaviour Pattern
TBBP	Type B Behaviour Pattern

Acknowledgement

Primarily, I would like to thank the Almighty ALLAH, Who is the giver of generous blessings. My eternal gratitude to Him for all that I have today.

I extend my sincere gratitude to Dr. Naghma Rizvi, my esteemed supervisor, for her invaluable scholarly guidance and unwavering encouragement, which played a pivotal role in the successful completion of this study. I also wish to express my special thanks to the members of my Dissertation Committee Dr. Saleema Gulzar (co-supervisor), Syeda Aleena (Biostatistician), and Syeda Humera Qutb (Instructor), for their critical insights, and feedback that significantly enriched the quality of this research.

Furthermore, I extend my appreciation to Ms. Ambreen Ishrat, the editor, for her meticulous proofreading and editing services that refined the presentation of my work. Additionally, my gratitude is extended to the management, esteemed faculty members, fellow students, and the resolute library staff for their consistent support and valuable contributions throughout the course of my study.

I want to express gratitude to the study participants whose active participation and contribution were integral to the realization of this research endeavors. Their involvement has been fundamental to the success of this study.

Declaration

I declare that this thesis does not incorporate without acknowledgement any material previously submitted for a degree or diploma in any university and to the best of my knowledge it does not contain any material previously published or written by another person, except where due reference has been made in the text.

The editorial assistance provided to me has in no way added to the substance of my thesis which is the product of my own research endeavors.

Farhana Shaheen

17, Nov. 2023

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Chapter One: Introduction

Chapter one provides an overview of academic achievement, the personality Type A and Type B behaviors and their respective impacts on academic years. This chapter also provides an overview of the study problems and the rationale of the study. Additionally, the chapter outlines the significance of the study, research questions, study objectives, and its aims. Moreover, it explains the operational definition and ends with the summary.

The Background of the Study

Educational institutions compete for academic achievement to generate competent alumni. Consequently, a student's academic achievement features as a common interest of everyone involved in education (Mansoor & Mansoor, 2018). Moreover, students strive for higher grades and academic excellence that ultimately also benefit the community and them at various levels (Komarraju et al., 2010). Furthermore, the academic achievements of students are influenced by several elements, including IQ, instructional strategies, gender, socioeconomic status, study schedule, and methods of evaluation (Hayat et al., 2020). Likewise, it is believed that one's behaviour is influenced by the psychological framework and perceptions of society (Kollmuss & Agyeman, 2002). Similarly, educational success is related to a student's level of self-confidence and psychological constructs (Code et al., 2021). Additionally, academic success depicts the personality of a student (Hakimi et al., 2011). Hence, the identification of factors that impact students' academic achievement constitutes a primary area of focus for educational systems and educational psychologists (Hayat et al., 2020).

Human growth and personality development is the primary goal of education (Curtis, 1979), because education prepares people for acquiring successful living (Dewey, 1986). This developmental phase also comprises school, college, and university education (Talib et al.,

2015). Moreover, moving away from home to attend college is a significant transition that can be stressful and cause a range of feelings, including sadness, loneliness, and worry (Thurber & Walton, 2012). Likewise, life changes may also cause stress (Wintre & Yaffe, 2000). However, these sentiments are natural and constitute a fundamental aspect of the developmental shift from high school to college (Lateef et al., 2019). For instance, when students first enrol in academia, they must adjust to a lot of transitions, such as changes to their housing situations, services as an educational, and socialisation, as well as a rise in reliance and obligation in both their academic and social area (Adeniyi et al., 2014).

In the past, healthcare efficiency in the medical profession has emphasised on psychological characteristics as indicators of academic success, such as cognitive ability and logical reasoning (Sobowale et al., 2018). Moreover, it is evident that feeling depressed lowers academic Grade Points Average (GPA) as well as increases the attrition level, specifically for anxious learners-leads to impair academic success (Eisenberg et al., 2009). More so, Reverté-Villarroya et al. (2021) claimed that students with undiagnosed psychological challenges either depression, anxiety or stress, may struggle academically. Specifically, students pursuing a degree in nursing not only have to meet rigorous academic requirements but also learn to adapt to a variety of challenging work environments. Consequently, their psychological well-being may suffer because of these commitments and settlements (Reverté-Villarroya et al., 2021). Furthermore, Reverté-Villarroya et al. (2021) cited in their study that nursing students may suffer psychologically from academic and employment pressures. Therefore, these psychological variations may hinder their learning period, and the development of distinct personalities, thus leading to stress and anxiety in practical areas (Almlund et al., 2011).

The Academic Achievement

In past years, psychologists linked academic achievements with the students' psychological status (Alfulaij & Alnasir, 2014; Bodla et al., 2020; Aliya Hisam et al., 2014; Ocansey et al., 2022; Shehzad, Waheed, Hussain, et al., 2022). In a previous study, Sadler (2009) asserted that the term "academic achievement" typically pertains to the level of accomplishment demonstrated by nursing students in an assessment or evaluation designed to address the varied needs of patients. Furthermore, this involves the ability of healthcare experts to deliver safe and top-notch care to patients (Lateef et al., 2019). In addition, Sobowale et al. (2018) suggest that integrating perceptual aspects such as personality traits into nursing education may help in predicting and promoting positive outcomes for nursing students in their professional lives. Moreover, nursing students receive essential training from clinical education that equips them with best practices and techniques, thereby ensuring that their patients receive high quality care (Shi et al., 2013).

Furthermore, students' learning excellence is affected by many other factors, including family education, physical conditions, school administration, school environment and instructor (Reda & Mulugeta, 2018). Moreover, except for psychomotor and emotional categories, educational degree affects students' behaviour (Ozcan, 2021). Hence, one of the elements that significantly affects academic achievement is thought to be a personality types. Begum and Alsaqer (2016) elaborated that a positive relationship exists between personality characteristics and educational achievement.

Personality Behaviour and its Types

Personality is seen as the internal process that has been unified to take the form of interpersonal relationships, emotions, and attitudes (Lazarus, 2006). Moreover, this internal process of personality harmonises responses, behaviour, and interaction with others, and as a

result, they have a significant influence on how people behave (Fayez & Labib, 2016). Furthermore, there are several ways to define personality, which include educational, psychological, and social dimensions (Sadler, 2009). Consequently, several theorists have characterised and measured personality traits and types from a variety of perspectives (Petrova et al., 2017). Hence, researchers are looking for personality traits at the teaching and learning levels that have an impact on the type and standard of learning (Al Shalabi & Salmani Nodoushan, 2009).

Type A Behaviour Personality

Two cardiologists named Type A Behavior Personality (TABP) in 1959, describing it as "an action-emotion complex that can be noticed in anyone who is vigorously engaged in a continuous, unrelenting struggle to achieve multiple goals at the same time" (Perry et al., 1990). The TABP is primarily decided by extremes of competitive striving for achievement, lack of patience, hostility, aggressive behaviour, and an inflated sense of time urgency.

Moreover, TABP has been linked to poor academic performance, poor work performance, poor job attitudes, heightened commitment, poor health outcomes, and elevated incidence of traffic accidents (Shi et al., 2013). However, in the past few years, TABP has mostly been investigated as a possible potential cause of coronary heart disease CHD (Molinari et al., 2006). Type A personality traits and the trait of stress induced procrastination investigated in United State exhibited that when workload and stress are increased, the TABP personality types experience procrastination (DiMeglio, 2016). Furthermore, the prevalence of Type A Behaviour personality characteristics in college and university students has been linked to poor satisfaction with their livelihoods (Khodadadi et al., 2016). For instance, since the 1930s, the feeling of hostility has been correlated with coronary disease. Thus, TABP and coronary artery disease are

connected to one another by stress (Aliya Hisam et al., 2014). Similarly, in China, researchers observed a relationship between TABP and heart disease, and claimed that TABP drivers were more prone to drive aggressively due to the element of stress (Shi et al., 2013).

Type B Behaviour Personality

The opposite of TA BP, Type B Behaviour Personality (TBBP) personalities are laid-back, less assertive, and tend to work less assiduously to carry out their goals (Malhotra, 2020). For instance, the studies of Lateef et al. (2019) investigated the impact of Type A and Type B personalities on students' academic year. Consequently, they claimed that students with type A personalities also beat type B personalities in terms of their academic performance. Likewise, a study was conducted in 2010 to evaluate the assertion that Type B people would take more preventative measures than Type A people (Korotkov et al., 2011). Hence, the results revealed that Type Bs are prone towards using more existential, preventive, and socially supportive coping strategies in social situations (Wolpin et al., 1991).

Besides this, elevated levels of emotional intelligence (such as adaptability), a trait believed by many to be a sign of effective coping, have also been networked to type B personality (Day et al., 2005; Saklofske et al., 2007).

The Problem Statement

The influence of personality on students' learning is a significant factor when considering the intersection of education and psychology. Undoubtedly, it is evident that there exists significant variation among students because of individual differences, which consequently leads to variations in their academic achievement.

Moreover, according to empirical research, individuals classified as Type A personality exhibit a heightened susceptibility to stress and demonstrate impatience. Consequently, students possessing a Type A personality may encounter additional health complications, such as

palpitations or cardiovascular disorders. While being classified as a Type A personality is not inherently negative, as it is associated with positive traits such as perfectionism, competitiveness, and a strong adherence to deadlines; however, individuals with this personality type often struggle with successful socialisation compared to those with a Type B personality. Likewise, these differences can have a detrimental impact on their academic pursuits, hindering their ability to achieve high levels of success, as well as their professional lives, particularly in the healthcare field where effective interpersonal skills are crucial.

Several studies have been conducted on medical students in Pakistan; however, there is a notable absence of research pertaining to nursing students. Consequently, it is imperative to investigate the prevalence of nursing students, encompassing both males and females, within the private schools of nursing and midwifery in Karachi, Pakistan. Additionally, it is crucial to explore the potential correlation between Type A and Type B personality and the academic year in which nursing students are enrolled in their undergraduate programme. Thus, by addressing these research gaps, a more comprehensive understanding of the nursing student population and their academic progression can be attained. In addition, there exists a compelling necessity to implement a screening process for identifying students who are at risk of developing anxiety and other associated conditions, with the objective of mitigating the likelihood of cardiovascular disease (CVD) in the future.

The Rationale

The researcher has observed that nursing students, from their first through final years of academia, encounter various issues that affect their personality traits. For instance, some students live in hostels and have distinct adjustment issues than those who come from far away but live with family (Terenzini & Pascarella, 1998). However, a student's environment has the greatest impact on their personality leading to the physiological and psychological changes that play a

pivotal role in educational performance (Chemers et al., 2001). Moreover, nursing students face psychological distress and poor adjustment, and solutions need to be found to help them (Warbah et al., 2007). Hence, there is the utmost need to promote the psychological as well as physical health of the nursing professionals meeting the needs of quality care (Strang et al., 2002).

Furthermore, research into the prevalence of Type A and Type B personalities among undergraduate nursing students has multiple merits. It provides information about mental health and tension levels, given that Type A's competitiveness may exacerbate stress. Moreover, the purpose of this study is to determine whether certain personality types correlate with academic success. This is because stress coping mechanisms vary between Type A and Type B individuals, which influences nursing education adaptation. In a high-stress profession, it is beneficial to determine whether Type A or Type B prevalence predicts nurses' success and satisfaction is beneficial. This kind of research can guide interventions for personalized stress management based on personality characteristics. Additionally, the relationship between personality categories, nursing profession choices, and longevity needs to be investigated. This way nursing education can be improved by incorporating personality traits into instructional methods. Likewise, this study may contribute to personality psychology discussions. Conclusively, understanding the personality traits of nursing students may yield insights that can improve their mental health, academic performance, and career prospects.

It can be argued that the physical health of students keeps them active and engaged in completing their curricular and extra-curricular activities, but mental health cannot be neglected (Cale, 2000). In this respect, early identification and comprehensive assessment of college students with psychological health concerns are imperative to enhance outcomes such as graduation and service provision (Pedrelli et al., 2015). Medical examination of newly inducted

nursing students is important. In addition, faculty and teachers can play an active role in assessing the students during the learning periods and keep them aware of the psychological change among them (Blazar & Kraft, 2017).

In nursing education particularly, students are often burdened with a heavy workload, including both theoretical and practical coursework, in order to meet course and clinical outcomes (Bednarz et al., 2010). At the School of Nursing and Midwifery, students in the semester system face a particularly daunting task of completing many assignments within a limited time 16-17 weeks (about 4 months), which may lead to heightened levels of anxiety and stress. A significant literature is available both nationally and internationally on the assessment of personality traits and personality disorders among undergraduate and graduate students (Colizzi et al., 2020). However, the frequency of Type A and Type B personality amongst undergraduate nursing students, through using BAI (BECK Anxiety Inventory) scale and the association of a personality type with the student's academic year (1^{st}, $2^{nd,}$ 3^{rd}, 4^{th}), has not been studied yet in Pakistan. Therefore, there is an utmost need to investigate/study the frequency of personality types A and B in nursing students and the association between personality types and the respective academic years.

The Significance of the Study

The findings can assist in developing interventions and strategies to cater to the unique needs of nursing students with different personality traits. Moreover, the findings will also be helpful in finding the risk factors associated with Type A personality traits in nursing students. Next, after a thorough assessment, students in need of psychological support will be discreetly referred to the counselling centre. The centre offers numerous services, such as counselling, stress management, and mindfulness training, to help nursing students overcome academic challenges. Moreover, maintaining anonymity is a top priority. In addition, this study

will help in improving nursing education, training programmes, and customizing them to meet the unique needs of various student populations. Furthermore, this research will add to the current body of literature regarding the correlation among personality traits, academic achievement, and psychological and social well-being of nursing students. Lastly, it will provide a basis for future studies in this field (Abdul Razzak et al., 2022).

The Research Questions

The present study is composed of primary and secondary research questions which are as given below.

The Primary Question

- What is the prevalence of Type A and Type B personalities among first to fourth year undergraduate nursing students at two private Schools of Nursing in Karachi, Pakistan?
- What is the association between the personality types of undergraduate nursing students with their academic years?

The Secondary Question

- What is the gender-wise prevalence of Type A and Type B personality among first to fourth year undergraduate nursing students at two private Schools of Nursing, in Karachi, Pakistan?
- What is the gender-wise association between personality types of undergraduate nursing students with their academic years?

The Study Objectives

The following are the study's objectives:

- To find out the prevalence of Type A and Type B personality among undergraduate nursing students.

- To find the association between personality types of undergraduate nursing students with their academic years.

The Study's Aims

The main objective of the study is to find out the prevalence of Type A and Type B personality among undergraduate nursing students and to find the association between personality types of undergraduate nursing students with their academic years.

The Conceptual Definition

There are following conceptual terms used in this study.

Anxiety

Anxiety is an emotional state characterized by feelings of unease, worry, or fear, often associated with apprehension about future events or circumstances, leading to physiological and psychological reactions. It involves heightened arousal, tension, and distress (Bystritsky & Kronemyer, 2014).

The Prevalence of Type A and B Personality

The term "prevalence" refers to the occurrence rate of anxiety attributes among individuals who possess personality types A and B.

Type A Personality

A Type A personality exhibits traits like excessive competitiveness, intense drive for success, easily triggered hostility, aggression, impatience, and an exaggerated sense of urgency regarding time (Friedman & Rosenman, 1974; Lateef et al., 2019).

Type B Personality

Type B personality is marked by a more relaxed, patient, and less aggressive nature, demonstrating lower levels of competitiveness and time urgency compared to Type A individuals (Matthews et al., 2003).

Undergraduate Nursing Students

Undergraduate nursing students are individuals pursuing their initial academic degree in nursing, preparing to become registered nurses, and undergoing foundational education in nursing practice.(Abbasinia et al., 2020).

Academic Year

An academic year typically refers to the period of time within an educational institution's schedule, covering a full cycle of academic activities, including classes, exams, breaks, and other related events, usually spanning nine to twelve months (Alrashidi et al., 2016).

The Operational Definition

There are following are the operational terms used in this study.

Anxiety

Anxious students scored between 0 to 63 on the BAI scale and reported physical changes over the past month. Based on score ranges, it is classified as minimum (0–7), mild (8–15), moderate (16–25), and severe (26–63).

The Prevalence of Type A and B Personality

"Prevalence is operationalized as the percentage of participants classified as Type A or Type B based on their respective scores on the Beck Anxiety Inventory (BAI) scale. Participants scoring above a certain threshold are categorised as Type A, while those scoring below that threshold are categorised as Type B (Hisam et al, 2014).

Type A Personality

The Type A personality is measured by a high score on the Beck Anxiety Inventory (BAI) scale, which indicates a higher level of qualities connected to anxiety. A score above 25 on the Type A personality test is indicative of a severe level of anxiety.

Type B Personality

Type B personalities are characterised by low levels of anxiety, as measured by the Beck Anxiety Inventory (BAI). Minimum, mild, and moderate levels of anxiety are defined within a 0–25 score range.

Undergraduate Nursing Students

Students pursuing a four-year Bachelor of Nursing degree are undergraduate nursing students. They provide care, advocacy, education, collaboration with other healthcare professionals, analysing and strategizing, exhibit critical-thinking skills, provide emotional support, and promote healthcare. Thus, nursing improves patient, family, and community health (Abbasinia et al., 2020).

Academic Year

In this study, academic years are classified into distinct levels, such as 'Year-I, Year-II, Year-III, and Year-IV', to indicate the advancement of students in their nursing programmes. The level of a student is decided by the duration of their enrollment, with 'First-Year' students being in their first year of study and 'Fourth Year' students being close to completing their programme.

The Summary

Education is the right of everyone to excel in their academic and professional career. Moreover, human growth and personality development is the primary goal of education. However, nursing students face psychological distress and poor adjustment in their academic and professional careers, and hence, there is a need to find solutions to help them. Consequently, the study seeks to identify the personality Types A and B that can help nursing students succeed and

manage those impediments that hinder them from achieving academic excellence. Moreover, the influence of personality on students' learning is a significant factor when considering the intersection of education and psychology. Furthermore, the academic achievement of students is influenced by several factors, including intelligence Quotient (IQ), instructional strategies, gender, socioeconomic status, daily study time commitments, and study methodologies. In addition, there is the utmost need to promote the psychological as well as physical health of the nursing professionals in meeting the needs of quality care. Subsequently, it is envisaged that this study will also help the stakeholders in the development of nursing education and training programmes that are better tailored to the needs of distinct types of students.

Chapter Two: Literature Review

This chapter discusses the literature on Type A and B personality. This chapter included a search strategy and a Prisma diagram. It also includes the historical foundation of personality, the theoretical perspective of personality types, the impact of two personality Types (A and B) on academic success, and the social cognitive theory of personality. The chapter concludes with a gap analysis and a brief summary.

The Search Strategy

The pertinent literature on the subject was explored through electronic databases including Google Scholar, PubMed, CINAHL, Science Direct, Cochrane library, and Ovid database (Figure 1). A search was conducted using Boolean operators (AND, OR, NOT) to explore the keywords ("Personality Types" OR "Type A personality" OR "Type B personality") AND ("nursing students" OR "undergraduate nursing") AND ("prevalence" OR "association" OR "gender differences"), ("gender differences" OR "male" OR "female") AND ("personality Types" OR "Type A personality" OR "Type B personality") AND ("nursing students" OR "undergraduate nursing"). ("frequency of Type A and Type B personality" OR "prevalence rates of Type A and Type B personality") AND ("medical students" OR "medical undergraduates"), ("prevalence of Type A and Type B personality" OR "incidence of Type A and Type B personality") AND ("undergraduate students" OR "undergraduates").

Similarly, relevant literature about the research issue was searched on databases such as "undergraduate nursing students," "academic success," and "academic achievement" in the context of medical and nursing and among students.

The Eligibility Criteria

The selection criteria for the articles reviewed were as follows:

The relevant studies were published between 2018 and 2023, but some older significant studies were also included. Data was extracted from selected studies, including article titles, publication dates, journal names, sample and strategy details, significant results, and outcomes. However, all multilingual editorials and articles were excluded. Moreover, English language articles with full text were included.

The Findings

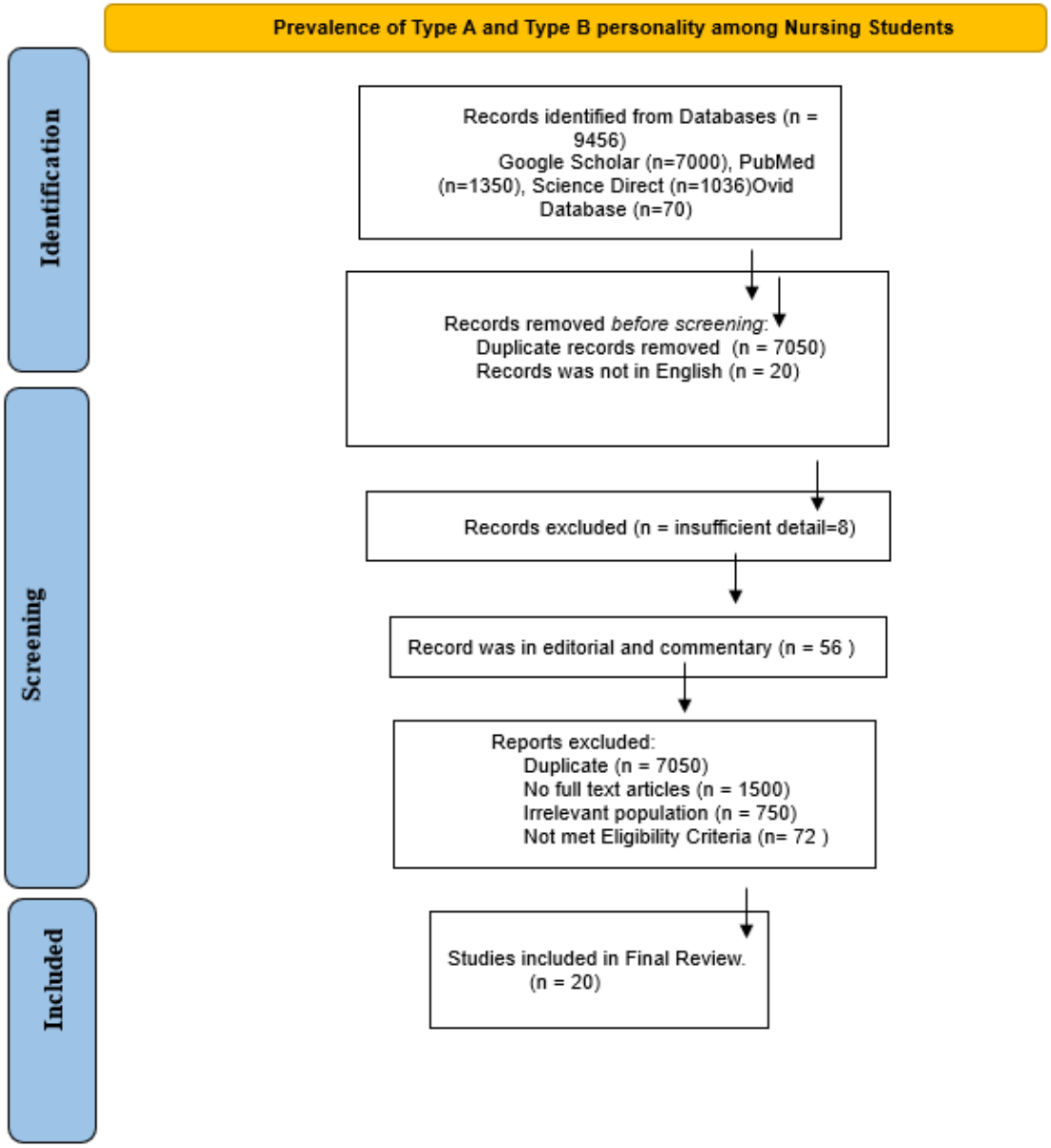
Academics exclusively studied student nurses' psychological, physical, and mental health, based on personality types (A &B).

The Results

The total number of retrieved articles was 9,456, in which Google Scholar had 7000, PubMed had 1350 articles, ScienceDirect had 1,036, and CINAHL had 70 articles. Among the total retrieved articles, 7050 were duplicates and were excluded. The articles that did not have the full text were 1500. Moreover, in the remaining 906 studies, 750 studies were not about the healthcare workers and were excluded, and among the 156 articles that remained, 72 articles did not match the eligibility criteria. On the other hand, out of 86 articles, 20 articles were not in English and were thus excluded. Furthermore, among the remaining 56 articles, 8 studies had insufficient details and 36 studies were editorials and commentaries; hence, they were excluded too. Next, the remaining articles were checked for eligibility. After a comprehensive search of all the articles and viewing their abstracts, towards the end, only 20 articles (from 42 articles) having theoretical and empirical knowledge related to the study, were finally selected. Furthermore, all were descriptive cross-sectional research and analytical correlational approach

was utilised in the studies. In addition to China, the research was carried out in Indonesia, Turkey, Poland, Nigeria, Bahrain, Pakistan, and India.

Figure 1.1 PRISMA Flow Diagram of Literature Search



Note. Figure 1.1 shows the electronic database and flow diagram of the literature search.

The Historical Foundations of Personality

As per the American Psychological Association (APA), personality is defined as emotional experiences and behavioural tendencies exhibited by humans (APA, 2022). Also, the Latin term "persona" (meaning "mask") is the root of the English word "personality" (Barbour, 2020; Clay, 1998). Moreover, psychologists argue that personality determines how well one can predict others' actions and reactions (Gross, 2023; Hayes, 2023). Likewise, Thomas et al. (2011) stated that as individuals grow and develop, their character is influenced by various factors such as religion, family dynamics, academic hurdles, professional experiences and personal relationships. Moreover, the previous studies have almost exclusively focused on the observation that not all psychologists and experts agree on one globally accepted definition of personality, but they do agree that it is a combination of traits relatively stable through time (Costa Jr et al., 2019; Sharma & Jain, 2015).

The concept of personality is broad, and its definition varies across different psychological perspectives (Almlund et al., 2011; Cantor & Mischel, 1979), Although theorists have explained personality from various perspectives throughout history, Sigmund Freud's topographical personality theory places the ego in nature. According to Freud's psychoanalytic theory, personality is conceptualised as a hierarchical structure comprising three components: id, ego, and super ego (Nass, 1966). Additionally, a significant Austrian psychologist Sigmund Freud promoted individual psychology. The theory of personality explains inferiority and supremacy. After Freud's theory, Adler (1927) considerably investigated how childhood affects adulthood. Furthermore, Adler was of the view everyone tries to fix their mistakes. Hence, Adler's human psychology concept holds the premise that self-creativity and truth organisation shape personality (Hartshorne, 1997). Moreover, another theorist (Bradway, 1964; Jung, 1916, 2014) explained that Carl Jung's analytical psychology views personality as a dynamic

construct, which must be developed and matured to become a complete and unified self. Additionally, the behaviourism theory supports that behaviorism emphasises consistent behaviour as the main predictor of personality (Fontana & Fontana, 2000; Kitchener, 1977; LeVine, 1973). Furthermore, Abraham Maslow's humanistic psychology views personality as a complex mix of physical and spiritual realms that explain an individual's past and behaviour (Smith, 1990; Watson & Greenberg, 1998).

The Theoretical Perspective of Personality Types

Personality encompasses a myriad of traits and qualities that shape an individual's unique character, affecting their thoughts, emotions, and actions (Albert Bandura, 1999). There exists a multitude of personality classifications derived from diverse theories and frameworks (Ashmore & Del Boca, 1979). Additional personality Types contributions are evaluated here. A classification system that can be utilised is the Typology of Hippocrates - Galenus, which categorises personality across a total of four distinct groups of people: yellow bile (choleris), black bile (Melancholy), mucus (Flegmatis), and blood (Sanguinis) (Robins et al., 1998), (Firmanda & Fitriati, 2018). However, there is a characterisation framework that has identified three personality types that can be replicated: resilient, overcontrolled, and under-controlled personalities (Robins et al., 1996). Furthermore, the Myers-Briggs Type Indicator (MBTI) is a commonly employed categorisation structure that groups humans according to all four behaviour features: Introversion-Extroversion (I-E), Intuitions-Sensing (N-S), Feeling-Thinking (F-T), and Judging-Perceiving (J-P) (Boyle, 1995) (Zumma et al., 2022). Moreover, these personality categories help understand and predict behaviour and are useful in psychology and artificial intelligence research (Dane & Pratt, 2009) (Shopon et al., 2022). Various classifications of temperament, characters, personality types, and ways of behaviour have been developed over time, with some enduring review and others falling short (John et al., 1988; Raza, 2007; Shaw &

Dimsdale, 2010). Hence, the references to Hippocrates' and Claudius Galenus' classifications hold great importance, as they are rooted in humoralism and have greatly impacted the evolution of types (Dyussenbayev, 2013; Kirschner et al., 1989). Finally, the thorough examination conducted on 'Personality Types A and B', as defined by Friedman and Rosenman (H. S. Friedman & S. Booth-Kewley, 1987), has been widely analysed in several academic disciplines in the past (Howard S Friedman & Stephanie Booth-Kewley, 1987; Rhodewalt & Agustsdottir, 1984; Van Dijl, 1978).

Moreover, Personality Types A and B have a rich and extensive historical background, tracing their origins back to ancient philosophical and medical traditions in various cultures around the world (Dyussenbayev, 2013; Myers & Myers, 2010). Furthermore, in 1959, Friedman and Rosenman proposed a theory regarding personality types, known as Type A and Type B. According to their theory, one of these types is strongly associated with the development of coronary heart disease and other heart-related problems (Samaras & Galanakis, 2022). However, the main argument was that Type A personalities' high stress levels damage cardiac function, causing cardiovascular issues and heart attacks (H. S. Friedman & S. Booth-Kewley, 1987). In fact, clinical observations led to the concept of Type A personality, which is characterised by high levels of ambition, a strong feeling of urgency, and anger; this concept has been studied in relation to coronary heart disease (Chida & Steptoe, 2009; Hagihara et al., 1997). Meanwhile, Type A, and Type B personalities both have been studied to see how they react to stress in service area (Janjhua, 2012). Consequently, psychosocial obligations have been reported to be major stressors for those with Type A personalities, whereas job expectations can place great strain on those with Type B personalities (Kaur et al., 2013). In comparison, the concept depends on the understanding of anxiety, which is the major difference between Type A and Type B

personalities. For instance, globally, academics, psychologists, and business executives have strong viewpoints about anxiety (Samaras & Galanakis, 2022).

Tye A and Type B Personality

Student's anxiety over emotional well-being is common (Bischofsberger et al., 2021). Medical students, and experts, advise prospective patients on ways to improve their health and quality of life. However, numerous studies have shown that medical professionals disregard sound advice when it concerns their own lives (Carmelli & Swan, 1996; Levine & Sandine, 2005). Additionally, personality traits increase universal resilience, improving overseas job outcomes regardless of training (Lisnyj et al., 2023). Moreover, according to Yavuz and Kayhan's study of Turkish professionals, Type A and Type B personalities impact workplace presenteeism. In addition, the study observed higher presenteeism rates for women, managers, youth, and the less educated ones (Yavuz & Kayhan, 2020). Furthermore, a study identified that in technology, Type B personalities are happier and less worried and less burned out than Type A. Therefore, stress management, work styles, and performance expectations should be prioritized (Goyal et al., 2023).

In addition, supporting the perspective of students' progress, a Kerman University of Medical Sciences study discovered a strong correlation between occupational inclinations and personality types, thus showing that personality-matched employment improves job satisfaction and organisational success (Emadi et al., 2016). Although the ambitions and A-B personalities of Filipino women and careers are influenced by stress, the findings suggested that Type A women entrepreneurs feel uncomfortable about relaxing. On the other hand, Type A and Type B women executives have average stress(Perez et al., 2023). Likewise, a study in India described that stress and job satisfaction differed significantly between Type A and Type B employees. Moreover,

men with both personality types had higher job satisfaction, underscoring the importance of stress management (Khanna et al., 2018).

Besides this, some authors have driven the further development of the research on personality. Correspondingly, in Peshawar, undergraduate medical students were tested for Type A and Type B personalities. Type A personalities conformed more and were less subjected to group pressure (Waheed et al., 2022). Similarly, another study also evaluated how personality types A and B affected COVID-19-related psychological suffering. Male and female college students took a comprehensive mental health test. Although there are no gender or sex differences, Type-A students were found to be happier than Type-B students. However, no correlation was found among personality, sex, and mental health (Shinde, 2022). Alternative, study at two Turkish private universities found personality Type A and prejudice bias among nursing students, although perception was unaffected (Jafarov et al., 2023). Moreover, a notion was successfully established by Polish researchers that Type A primary care nurses, who practice healthy eating, stress management, mental and physical wellness, and alcohol reduction, are more likely to engage in 'coronary prone behaviour pattern' techniques (Gieniusz-Wojczyk et al., 2022).

Furthermore, based on the preceding studies, schools must develop students' personalities and teach them how to care for patients and adapt to the workplace (Ab Ghani et al., 2022). In the meantime, job adjustment was investigated in terms of nursing profession. Accordingly, a study investigated nursing students' Type A/B personality and career ambitions. Subsequently, A-B personality traits, measurement outcomes, self-assurance, creativity, and successful motivation were substantially correlated. Moreover, Type-A nursing students are more innovative (Çakıroğlu et al., 2021). In subject of the personality, concluded time an extensive literature has developed

on the characteristics of Type A and Type B personality among students (Aliya et al., 2014; Bodla et al., 2020; Calderón-Asenjo et al., 2022; Shinde, 2022). Furthermore, Ghasemian and Kumar (2017) investigated Bangalore and Mysore nurses' stress and personality. Type A personalities were more stressful than Type B. However, neither gender nor personality correlated with stress. The study suggested that Type A nurses may be more stressed than Type B nurses. Additionally, another study concluded that personality factors strongly correlated with mental illness views. It was discovered that personality behaviour A increases mild unfavorable perceptions, while B decreases them. Thus, the study recommends nursing awareness training to improve mental disease attitudes (Eski et al., 2023). In the meanwhile, an additional study explored in China that work-related stress affects Chinese senior nurses. Furthermore, Type A and neuroticism affect professional stress, and create low work satisfaction and burnout. Thus, hospitals can take measures to reduce occupational stress, boost job satisfaction, and avoid burnout, especially for type A senior nurses (Lu et al., 2022).

The Relationship of Personality Type A and B with Academic Success

A recent study in Indonesia indicated that Type A personality qualities affect academic achievement more than stress. Thus, educational institutions should promote personal growth and healthy competition to reduce stress. Type A persons excel academically despite stress (Sakitri, 2020). Furthermore, in a study, Adeniyi et al. (2014) asserted that Types of personality can affect the academic performance of university students. The research further indicates that personality Types A and Type B play a crucial role in determining academic success. Moreover, the study suggested that educators, administrators, curriculum developers and policymakers should take into account personality deficiencies in order to enhance academic achievement (Lateef et al., 2019). Conversely, a study done by Sakitri (2020) posits that the effects of stress

on students' academic performance were found to be negative. Moreover, those with Type A personalities tend to do better in school.

In addition, the studies of personality Type A and Type B are well-documented in recent age, as it acknowledges the importance of psychological health along with students' academic achievement. Furthermore, a broader perspective adopted by Shehzad, Waheed, Hussain, et al. (2022) investigated the correlation between different personality types (Type A and Type B) and academic performance in Peshawar medical students. Moreover, certain studies suggest a positive correlation among reduced levels of depression, anxiety, and stress among medical students with their academic performance. The results indicate a connection among certain personality types and the academic achievement of medical students (Shehzad, Waheed, Hussain, et al., 2022). In comparison with the medical students, another study was carried out in Peshawar by Shehzad, Waheed, Khan, et al. (2022)to find out the Type A and Type B personality among dental undergraduates. Success was higher among students who reported low stress and anxiety but high depression. However, students with a type A personality scored higher on standardized tests than students with a type B personality (Shehzad, Waheed, khan Kabir, et al., 2022).

Relatedly, a promising literature research was done by Bodla et al. (2020), on anxiety and Type A and Type B students' performance. Numerous public medical schools examined the prevalence of different personality types among MBBS students. The analysis explored the association between students' personality types and study years. It was discovered that the students of different academic years have variable levels of type A personality. Moreover, type A personalities increased as students progressed academically. The study also found that type A personality and academic year increased steadily from the first to the last year of public medical school (Bodla et al., 2020).

Lastly, another study found a connection between Type A and Type B personalities and academic achievement. Thus, Bodla et al. (2020) have investigated and reported similar and consistent findings. Moreover, a descriptive research in Rawalpindi, Pakistan, distinguished Type A and Type B personalities and their relationship to the MBBS academic year. The BECK Anxiety Inventory (BAI) Questionnaire identified students as Type A and Type B personalities. In each academic year, Type A personalities are present, although their numbers increase from the first to the last year of study in Rawalpindi's undergraduate medical institution (Hisam, Rahman, Mashhadi, & Raza, 2014).

The Gap analysis

In nursing education, students are often burdened with a heavy workload, including both theoretical and practical coursework, in order to meet course and clinical outcomes (Bednarz et al., 2010). At the School of Nursing and Midwifery, students in the semester system face a particularly daunting task of completing many assignments within a limited time 16-17 weeks (about 4 months), which may lead to heightened levels of anxiety and stress. A significant literature is available, both nationally and internationally, on the assessment of personality trait and personality disorder among undergraduate and graduate students (Ahuja, 2021; Alfulaij & Alnasir, 2014; Colizzi et al., 2020; Gieniusz-Wojczyk et al., 2022). However, the frequency of Type A and Type B personality amongst undergraduate nursing students, using BAI (BECK Anxiety Inventory) scale and the association of personality type with the student's academic year (1^{st}, $2^{nd,}$ 3^{rd}, 4^{th}), has not been studied in Pakistan. Therefore, there is an utmost need to investigate/study the frequency of personality types A and B in nursing students and the association between personality type and academic years.

The Theoretical Framework of Social Cognitive Theory

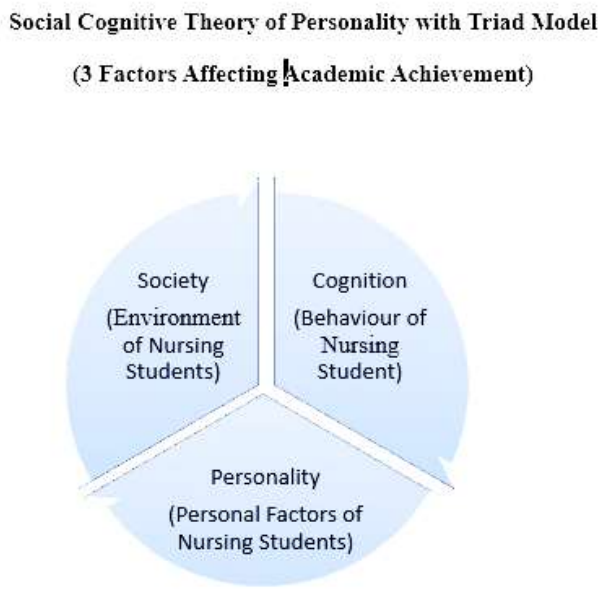
According to Albert Bandura's Social Cognitive Theory (SCT), human learning occurs through observation and imitation of others. Reciprocal determinism is emphasised as a link among the social, cognitive, and personality domains. The conviction that one has the capability to accomplish a given task is referred to as self-efficacy. Moreover, behaviour is influenced by cognitive processes such as memory, attention, and vicarious reinforcement and punishment. Furthermore, people imitate competent and comparable people while learning by modelling. In addition, self-regulation, behavioural norms, and the dynamic interplay of cognitive, behavioural, and environmental factors that impact human behaviour are all focal points of SCT.

The research is guided by the Social Cognitive Theory of Personality, developed by Albert Bandura (1927), which was used in my study to explain the Type A and Type B personalities among nursing students and their relationship with the academic year. Moreover, Bandura's theory provides a comprehensive viewpoint on the intricate interaction among individual characteristics, actions, and surroundings. The self-efficacy of nursing students helps them to learn by modeling behavior from their environment, which affects the cognitive process that impacts their personality. Thus, the Reciprocal Triad Model establishes a strong basis for investigating the connection between different personality types and academic achievement within the specific domain of nursing education (Bandura, 1986).

Moreover, observational learning, a key component of the Social Cognitive Theory (A. Bandura, 1999), plays a crucial role in understanding how nursing students, who have distinct Type A and Type B personalities, observe and adopt behaviours and attitudes demonstrated by their peers and instructors in the academic environment (Bandura, 1977). In addition, the primary emphasis is on Bandura's theory of self-efficacy, which allows for a thorough analysis of how

students' self-perceived skills, impacted by their individual personality traits, impacted their motivation and overall academic achievement (Ferla et al., 2010). Additionally, The 'Triadic Reciprocal Causation Model' , which highlights the continuing, reciprocal relationships among personality traits, academic behaviours, and nursing school assistance or requirements, is also useful (Bandura, 1986). This thorough approach examines the complicated relationships among personality types and academic performance, revealing private nursing school experiences and concerns (Figure 2).

Figure 1.2 The Social Cognitive Theory of Personality with Triad Model



Note. The Social Cognitive Theory of Personality examined through the Triad Model includes dimensions like the society, cognition, and personality. (3 components have impacts on students' academic achievement in figure 1.2)

The Summary

Personality is a crucial factor in human development, with diverse types of personalities influencing behaviour traits. Different professions demand individuals with specific types of personalities. Therefore, academic motivation is influenced by the impact of personality types A and B, as stress and anxiety have a positive correlation with the outcomes. Thus, social Cognitive Theory encourages observational learning to enable Type A and Type B nursing students to see and adopt academic peers' and instructors' behaviors and attitudes. Moreover, Bandura's self-efficacy theory is used to study how personality-influenced self-perceptions affect student motivation and performance. Therefore, prioritizing psychological well-being is crucial to achieve positive outcomes. In addition, implementing counselling and supportive strategies among students can help to mitigate the risk of cardiovascular disease associated with anxiety and stress later in life.

Chapter Three: Methodology

This chapter focuses on the methodological approach applied to the research, including the study's design, study setting, study period and population. Moreover, it includes the participants' eligibility criteria, the sample size, and the method used for sampling. Next, the chapter explains the data collection tools employed, their validity and reliability, and develops upon the process of data collection. The last section outlines the procedure for the data entry plan, the data analysis, the study rigour, the ethical considerations, and the summary.

The Study Design

The study used a quantitative approach and an analytical cross-sectional study design to address the study's concerns & questions. Literature supports the view that the cross-sectional study has been one of the most commonly used types of observational research design that involved using a singular poll as well as an assessment with any number of sets of participants at a particular time point (Thompson & Panacek, 2007).

Furthermore, the cross-sectional studies are considered suitable for the computation of basic prevalence rates (Knottnerus & Muris, 2003). The cross-sectional analytical study design has been used for the determination of frequency and means at a specific point in time (Thompson et al., 1998). Frequently, they serve to assess the rate of health-related consequences, delineate characteristics within a populace, and comprehend the factors that influence good health (Wang & Cheng, 2020).

Situated in this context, this study was designed to measure the prevalence of Type A and Type B personalities by using the Beck Anxiety Inventory (BAI) scale among undergraduate nursing students in two private schools of Nursing and Midwifery, Karachi, Pakistan. Moreover, it sought to explore the association of personality types with students' respective academic years.

Furthermore, this cross-sectional study design is cost-effective (Ebert et al., 2018) and has been selected due to financial and time constraints.

The Study Setting

The research was recently carried out at two private institutes in Karachi, Pakistan. One was the Aga Khan University Hospital (AKUH), Karachi, School of Nursing and Midwifery (SONAM) and the other was the Murshid Hospital and Health Care Centre (MH&HCC), School of Nursing and Midwifery, Karachi, Pakistan. The rationale behind the selection of two research sites was that since findings from a single institute among undergraduate nursing students could probably not provide a diverse data set; hence, the prevalence of Type A and Type B personality could be better gauged by conducting a multi- centred study. Simultaneously, generalisability would not be impacted. Furthermore, as no previous study has been carried out among nursing cohorts, thus, the inclusion of the second institute was necessary to ascertain the credibility and dependability of the findings.

The Aga Khan University, School of Nursing and Midwifery

The Aga Khan University, School of Nursing and Midwifery (AKU SONAM) was established in 1980, AKU SONAM is a privately owned academic institution. The organisation provides healthcare education with the aim to elevate the professional standing of nurses in Pakistan. Moreover, the Bachelor of Science in Nursing programme at AKU SONAM is the first of its kind in Pakistan. This educational institution provides undergraduate and postgraduate programmes to students of diverse socioeconomic and educational backgrounds, nationally and internationally. Furthermore, the AKU SONAM curriculum has served as a precedent for the development of the nursing curriculum at the national level (Rattani et al., 2011).

The Murshid School of Nursing and Midwifery

The Murshid School of Nursing and Midwifery (M-SONAM) was established in Karachi in July 1985, with the primary objective of providing nursing education exclusively to female students. In October of 1986, the M-SONAM received recognition from the Pakistan Nursing and Midwifery Council, Islamabad, Pakistan. Moreover, the M-SONAM has implemented degree programmes that adhere to the requisite standards of nursing practices. Furthermore, these programmes aim to produce skilled nursing professionals, specifically in the categories of four years of Generic Bachelor of Science in Nursing (BScN) and two years of Post Registered Nurse Bachelor of Science in Nursing (Post RN BScN). Since 2017, these programmes have been affiliated with the Dow University of Health Sciences.

Therefore, both these institutes were selected for the study as they both cater to students from similar socioeconomic and educational demographics.

The Study Population

The research study comprised male and female undergraduate nursing students enrolled in a four-year Generic BScN programme at the Aga Khan University School of Nursing and Midwifery, and the Murshid School of Nursing and Midwifery, both located in Karachi, Pakistan **(Annex-I).** The sample population consisted of individuals in their initial to fourth years of academic enrollment.

The Study Period

The research was done between June 2023 to December 2023.

The Eligibility Criteria

A set criteria was followed to include, as well as exclude, participants in the study:

The Inclusion Criteria

- All the students studying in AKU SONAM Karachi, enrolled in the four-year Bachelor of Science in Nursing programme studying in Year-I, II, III and IV, were included.
- All the students studying in the M-SONAM, Karachi, enrolled in the four-year Bachelor of Science in Nursing programme studying in Year-I, II, III and IV, were included.
- All nursing students consented voluntarily to be part of the study.
- All the students' ages ranged from 18 to 35 years.
- All the students had no physical disability.

The Exclusion Criteria

- Students studying Post RN BScN in Year-I and II were excluded.

The Sampling Size

The sample size was calculated via Open Epi online software by taking a confidence interval of 95% and a margin of error of 5%. Moreover, the prevalence of the population was taken from a study done in Rawalpindi and Lahore. Furthermore, in both types of studies, the Type A prevalence was 10.8% and Type B was 89.2%, thus, considering this, a separate formula was applied to both populations. Later on, the sample size was taken 124 , which was higher in number, and with the addition of a 10% attrition rate, the final sample size calculated was 136.

The final calculation, which considers the prevalence of both personality types from the previous study, is described as follows:

Population size(for finite population correction factor or fpc) (N): 751

Hypothesized % frequency of outcome factor in the population (p): 89.2%+/-5

Confidence limits as % of 100 (absolute +/- %)(d):5%

Design effect (for cluster surveys-DEFF):1

Sample Size(n) for Various Confidence Levels

Confidence Level (%)= 95% and Sample Size

=124

Equation: Sample size n = [DEFF*Np(1-p)]/ [(d2/Z21-α/2*(N-1)+p*(1-p)] Population size(for finite population correction factor or fpc)(N):751

Hypothesized % frequency of outcome factor in the population (p): 10.8%+/-5,

Confidence limits as % of 100(absolute +/- %)(d):5%

Design effect (for cluster surveys-DEFF): 1

Sample Size(n) for Various Confidence Levels

Confidence Level (%)= 95% and Sample Size =124

Equation: Sample size n = [DEFF*Np(1-p)]/ [(d2/Z21-α/2*(N-1)+p*(1-p)]

Statistical Power: After careful consideration, we have decided not to conduct a power analysis for the following reasons:

Exploratory Nature of the Study: Our research is exploratory in nature, aiming to investigate novel aspects within the chosen domain. As such, determining a specific effect size a priori might be challenging, and we believe that the study's findings will contribute valuable insights even without a formal power analysis.

Resource Constraints: Given the limitations in resources, time, or available data, conducting a comprehensive power analysis may not be feasible at this stage of the research. However, we are committed to providing a detailed discussion on the limitations associated with not conducting a power analysis in the revised manuscript.

We understand the importance of statistical power in strengthening the validity of study conclusions. However, in this particular context, we believe that the aforementioned reasons support our decision not to perform a power analysis.

The Sampling Technique

In this study, 136 participants were selected from two private nursing schools using the quota sampling method (non-probability sampling). The initial step involved allocating 50% of the sample to each institute, thus ensuring proportional representation based on their size. In addition, to further refine the sample within each institute, a technique called proportionate sampling was employed. Moreover, this involved dividing the sample size (68 participants) evenly across the different academic years within each School of Nursing and Midwifery. This approach aimed to capture the perspectives and experiences of students from various stages of their academic journey.

Moreover, within each academic year, the researcher implemented another layer of proportionate sampling, this time it was done by considering the gender factor. By employing this method, the goal was to ensure a balanced representation of both male and female participants in each academic year within each nursing institute. Likewise, the utilisation of proportionate sampling techniques at multiple levels helped to ensure that the final sample consisted of 68 participants from each institute, distributed proportionally across academic years and genders.

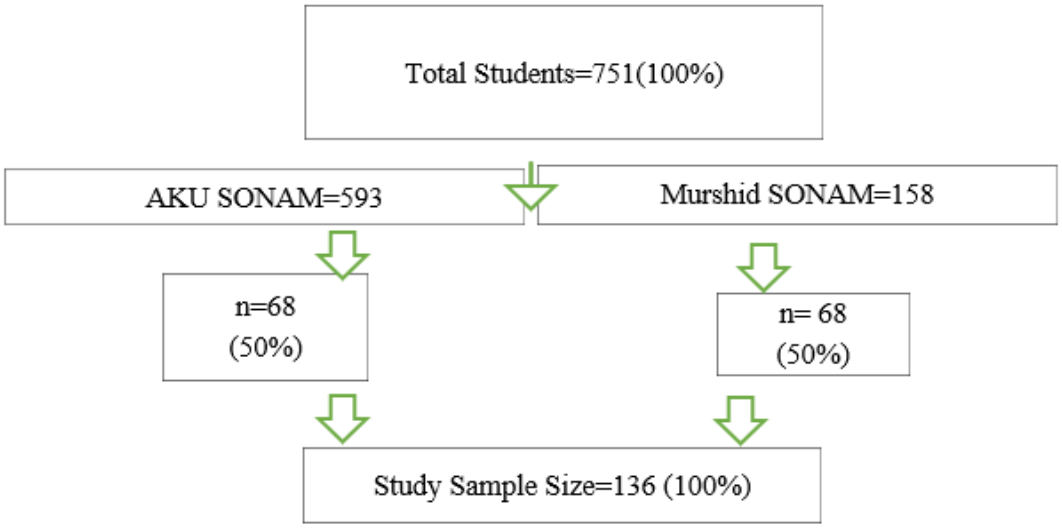
"Additionally, this approach was employed to select participants at two different layers, aiming to improve the sample's representativeness and enable a comprehensive analysis of the research variables within each nursing institute and its corresponding academic cohorts. By utilizing a well-structured sampling strategy that combined quota sampling with proportionate sampling across various levels, the study aimed to offer valuable insights into the perspectives

and experiences of students from both nursing institutes, diverse academic years, and gender groups. Other non-probability sampling methods were not utilized as they didn't allow us the opportunity to select participants at different layers within both institutes. This method provides researchers with control over the representation of specific subgroups, such as gender and academic years, ensuring a more tailored and targeted sample. Through incorporating proportionate allocation within the quota framework, researchers could ensure a balanced representation of each subgroup, mitigating the risks of underrepresentation or overrepresentation. The structured nature of quota sampling elevates the study's reliability by minimizing the likelihood of selection bias and ensuring a systematic representation of different strata.

Regarding the selection of two layers, gender, and year of study, this method afforded us the opportunity to sample participants across two different layers, each with varying sample sizes. Unlike other methods, this approach granted us the advantage of sampling participants at two distinct layers."

Moreover, this distribution is mentioned below (figure 1.3):

Figure 1.3



The Participants' Recruitment among Two Institutes

Note: Participants selected from two private nursing institutes.

The participant's recruitment was done through two modalities: face-to-face and online. For recruiting participants from AKU-SONAM currently enrolled in the BScN programme for the academic years 2020-2023, the online modality was used, as the students were not available on campus and were on summer break. Since almost 70 % of the student population resides outside Karachi; thus, it was not possible to approach them face-to-face. However, the participants were recruited face-to-face from Murshid Hospital, as they all were in campus.

The Recruitment of Participants at AKU-SONAM

The list of students enrolled in the BScN programme for the academic years 2020-2023 was procured from the office of the Academic Lead. Firstly, an email **(Annex-III)** was sent by the academic lead for each class, inviting an entire cohort of AKU-SONAM undergraduate nursing students to participate in a Zoom meeting. Moreover, the principal investigator was also present during the allotted time slot for each class on the same date. Further, to preserve the anonymity of the participants, each class was separately invited on Zoom. The meeting's purpose was to introduce the researcher, research intent, study introduction the rationale behind completing the questionnaire. Consequently, the students who agreed to be part of the study remained engaged as well as Zoomed in. A Google link that contained informed permission was then provided to the participants in exchange for their willingness to fill out a demographic and research study questionnaire that was also made available to them online. To elaborate, the informed consent document provided a thorough exposition of the investigation, elucidating all the pertinent details related to the research. It was noteworthy that the subjects' participation was entirely voluntary. Subsequently, upon the receipt of an affirmative response on the consent

form, the participants were duly bestowed with access to the Google link leading to the questionnaire.

The total number of participants recruited in the study was 593 from AKU SONAM, with representation of the total size of each class, i.e., 156 students from the Year-I; 145 students from the Year-II; 146 students from the Year-III; and 146 students from the Year-IV. Thus, the allocation of the overall sample size of 136 individuals across two institutions resulted in the inclusion of a total of 68 participants (50%) in the study. This selection was conducted using a quota sampling approach, wherein 25% of the participants were chosen from each academic year within the population of AKU SONAM. Moreover, the students were recruited for the study using a method known as proportionate sampling, whereby a proportion of 25% was selected from the total population of students. The ratio can be delineated as 18 for Year-I, 16 for Year-II, and 17 for both Year-III and Year-IV. Furthermore, according to the findings of the Pakistan Demographic Health Survey (PDHS) conducted in the years 2017-2018, the distribution of gender in Pakistan was observed to be 49% female and 51% male. Moreover, in every academic discipline, the quota sampling methodology determines the sample's ultimate size in each class. Thus, based on the gender-based criterion, a total of three male students from Year-I, Year-II, and Year-III, along with two male students from Year-IV, were chosen through the method of convenient sampling. Additionally, a group of 15 female students from Year-I, 13 from Year-II, 14 from Year-III, and 15 from Year-IV were also selected by using the same sampling approach.

The Recruitment of Participants at the Murshid SONAM

The study involved a face-to-face approach for participants' recruitment from the Murshid School of Nursing and Midwifery, Karachi, Pakistan. Moreover, the researcher interacted with the participants from each year separately. Furthermore, the study enrolled 158

participants at the institute, with each class represented by the respective number of participants from the following: the Year-I (40); the Year-II (40); the Year-III (39); and the Year-IV (39).

Also, the study employed the quota sampling technique to select 68 participants, which constituted 50% of the total sample size. Specifically, 25% of the participants were selected from each year. According to the Pakistan Demographic Health Survey (PDHS) 2017-2018, the gender distribution in Pakistan was reported as 49% female and 51% male. Moreover, in each academic discipline, the methodology of quota sampling is employed to determine the ultimate magnitude of the sample size. Hence, based on a gender-based analysis, a total of 13 male students were selected from Year-I, while 15 male students were selected from years-II and III. Additionally, 13 male students were chosen from Year-IV. Furthermore, 4 female students were selected from Year-I, 3 from Year-II, 2 females from Year-III, and 3 from Year-IV respectively. Moreover, these selections were made using a convenient sampling method. Alongside, in each class, proportionate quota sampling was utilised to determine the final sample size. The students were gathered in an auditorium based on availability year-wise. The class coordinator also accompanied and helped in interacting with the students. Next, after explaining the reason of the study purpose, a link was shared for taking informed consent from the participants, and then access was given to them to fill out the demographic and research questionnaire.

After indicating their agreement on the consent form, the participants were provided with authorisation to access the questionnaire. Subsequently, those selected students completed the form. Moreover, the researcher checked the forms for completeness to minimise errors or missing data. Face-to-face data collecting went smoothly. Since AKU nursing students were not on campus, an online approach was used. Therefore, setting the Zoom conference time and day and emailing it to their specified email account solves this problem. This method had drawbacks,

such as some students missing Zoom meetings owing to internet troubles. Thus, Karachi residents provided many responses. Consequently, many hostel students are from northern places; therefore, this connectivity difficulty may prevent them from enrolling at home. Not attending the meeting may be justified.

However, it is imperative to recognize that this approach may limit the generalizability of the findings to a broader context. The uniqueness of each nursing school, influenced by factors such as geographic location, institutional culture, and curriculum differences, could potentially restrict the transferability of the study's conclusions to a more diverse range of nursing institutes. To mitigate this limitation, several strategies have been implemented. Firstly, efforts were made to carefully select nursing schools that represent a spectrum of characteristics commonly found in diverse educational settings. By choosing institutions with varying profiles, the study aims to capture a more nuanced understanding of the experiences and perspectives of nursing student's socio-demographic, provision of physical and psychological health services. Generalizing findings beyond these specific institutions should be approached cautiously, and future research in different settings would be valuable for a more comprehensive understanding of the broader population.

The Data Collection Plan

After the ERC approval, before approaching students, formal written permission was taken from the Programme Office of the Aga Khan University, School of Nursing and Midwifery, Karachi (appended email), and the Principal of Murshid Hospital & Health Care Centre, School of Nursing and Midwifery, Karachi, Pakistan (appended email). Next, formal written permission was also taken from the selected students using online and face-to-face modality for reasons already mentioned earlier. At Murshid SONAM, Karachi, however, the students were invited to gather in one place with appropriate seating already made. Next, the

researcher explained the questionnaire in detail to the participants before the data collection. Moreover, data was collected online, as the questionnaire was generated on Google Forms and a link was shared. Furthermore, it took almost 30 minutes to complete the questionnaire.

The Data Collection Instrument

The full version of the questionnaire comprised 39 questions, categorised into three distinct sections. Section-A consisted of the informed consent form, where after consenting, the students accessed the demographic and research questionnaire. Meanwhile, Section-B comprised a series of 18 questions designed to elicit demographic information. Moreover, Section-C used 21 the BAI research instrument questions to measure the Undergraduate Nursing students' anxiety levels. Furthermore, 30 minutes were allotted for consent and questionnaire completion.

Section-A Informed Consent

The study involved obtaining informed consent from the participants who expressed the willingness to participate, including their names. The documentation of informed consent typically included the signatures of all participants, the name of the principal investigator, and the individual's name responsible for obtaining the consent, along with the corresponding date.

Section-B Socio-demographic Data

This section pertained to the collection of socio-demographic data. The form was utilised to gather socio-demographic data from the study participants. The questionnaire comprised various demographic variables such as the participants' gender, age, marital status, year of study, as well as place of residence, and their upbringing. Additionally, it also includes inquiries regarding any personal or observed experiences of anxiety, along with the coping strategies employed to manage such situations. Thus, several inquiries regarding self-behaviour in specific situations were also included.

Section C Research Tool

This section consisted of the Beck Anxiety Inventory (BAI) based questions related to stress or anxiety-related symptoms students experienced in their academic Year-I, II, III and IV of the BScN programme in the two Schools of Nursing & Midwifery in Karachi, Pakistan. Moreover, the adopted questionnaire of the "BECK Anxiety Inventory" (BAI) tool was employed for data collection. This questionnaire had been designed by Beck (Beck et al., 1997). Consequently, it is a reliable and validated questionnaire used in many studies and research internationally (Magán et al., 2008). Here are factors related to it:

Reliability

"Internal consistency for the BAI = (Cronbach's a=0.92) Test-retest reliability (1 week) for the BAI = 0.75" (Beck et al., 1988).

Validity

The BAI was moderately correlated with the revised Hamilton Anxiety Rating Scale (.51) and mildly correlated with the Hamilton Depression Rating Scale (.25)" (Beck et al., 1988). In this respect, anxiety levels in adults and teenagers are measured using the widely used BAI; hence, this scale is a self-report measure of anxiety questionnaire with 21 items (Beck et al., 1997). The Beck Anxiety Inventory (BAI) effectively distinguishes between individuals with anxiety disorders and those without, making it a valuable tool for screening anxiety. Moreover, several types of research have made use of it, including treatment-outcome studies for traumatised people (Beck et al., 1993). Research studies involving healthcare professionals have implemented the Beck Anxiety Inventory (BAI). The Beck Anxiety Inventory (BAI) has been utilized in various research studies involving healthcare practitioners. In a study assessing anxiety levels during the COVID-19 pandemic, nurses exhibited heightened anxiety compared to physicians (Canpolat & Dolanbay, 2022). Another investigation focused on veterans, confirming

the BAI's reliability and validity in evaluating anxiety symptoms within this group (Oehlert et al., 2020). A cross-cultural exploration affirmed the BAI's suitability in assessing anxiety among undergraduates from Spain, Portugal, and Brazil, revealing favorable fit indices for its two-factor structure (do Nascimento et al., 2023). Furthermore, a study examining high-risk pregnant women utilized the BAI to identify anxiety levels and risk factors in this demographic (Paz et al., 2023). Lastly, a study involving U.S. university students explored diverse anxiety symptoms and their impact on treatment-seeking behavior, indicating the potential of the BAI as a tool for categorizing symptoms (Chapa, 2022). The BAI was utilized by Stanley et al. (2009) in a clinical trial that compared cognitive behavior therapy to enhanced standard care.

Furthermore, the Beck Anxiety Inventory (BAI) is appropriate for observing the prevalence of Type A & Type B personality among nursing students, as the same scale was used in various context, i.e. to find out the prevalence of Type A and Type B among undergraduate medical students by (Aliya Hisam et al., 2014) and (Bodla et al., 2020). Since nursing students are concurrently pursuing careers in healthcare, it was necessary to utilize this instrument to assess the various personality types in order to predict their future outcomes. Additionally, "the total score is calculated by finding the sum of the 21 items" ("Beck Anxiety Inventory (BAI) - Joliet Center") Consequently, the scoring will be given as Not at all =0, Mildly, but it did not bother me much=1, Moderately – it was not pleasant at times=2, Severely – it bothered me a lot=3 (Beck et al., 1993).

Likewise, the range of scores was categorised by the level of anxiety, 0 -7 score for Minimal level of anxiety; 8-15 score for Mild level of anxiety; 16-25 score for Moderate level of anxiety; & 26-63 score for Severe level of anxiety (Beck et al., 1993). Similarly, the present study examined the prevalence of various symptoms associated with anxiety throughout the past

month and today. The questionnaire included the following 21 items related to anxiety, such as Numbness, or tingling; feeling hot, Wobbliness in legs; Unable to relax; Fear of worst happening; Dizzy or lightheaded; Heart pounding / racing; Unsteady, Terrified; or Afraid; Nervous; Feeling of choking; Hands trembling; Shaky/unsteady; Fear of losing control; Difficulty in breathing; Fear of dying, Scared, Indigestion; Faint/lightheaded; Face flushed; Hot/cold sweats (Beck et al., 1988).

As the BAI questionnaire's creator is no longer alive and the tool is readily accessible via Google, permission to use this questionnaire in this study could not be obtained.

The Data Analysis Plan

The statistical software IBM SPSS version 22 was used to analyze the data. The frequency and proportions will be calculated for qualitative and categorical variables like age, gender, marital status, residence, and personality Types (A & B). Moreover, the chi-square test (χ^2) was used to examine the relationship between personality Type (A & B) and two variables - BScN students' academic year and gender. Furthermore, binary logistic regression was utilised to assess the strength of the association between personality types and independent variables with a confidence level of 95%.

Next, logistic regression is a statistical method used to predict categorical outcomes based on a combination of continuous and categorical factors. It is selected when variables do not possess optimal distributions. It is commonly preferred over multivariate analysis in medical research, particularly for detecting diseases, because it allows greater flexibility in handling several types of predictors and does not assume specific distributions of variables. Further, the binary logistic regression is a statistical method that is used to analyze categorical outcomes. Unlike linear regression, which is used for continuous outcomes, binary logistic regression

predicts probabilities between two categories, such as yes/no or 1/0. Hence, this method was appropriate for assessing the dichotomous data (Harrell & Harrell, 2015).

The data collection process involved the use of the BAI Scale (Figure 1.4). Furthermore, the students completed the BAI questionnaire (Annex-iv), and their responses were interpreted according to the criteria established by the Beck's interpretation scale. Moreover, the students were grouped into two personality types, as per their score: Type A and Type B. The students who acquired a score of 26 or higher were identified as exhibiting severe anxiety and showed as having the Type A personality. Conversely, those who attained a score of 25 or lower were labeled as possessing the Type B personality.

Figure 1.4 Beck Anxiety Inventory Interpretation Scale

Beck Anxiety Inventory Interpretation Scale

BAI Scale	
Range of Score	**Anxiety Level**
0-7*	Minimal Level of Anxiety
8-15*	Mild Anxiety
16-25*	Moderate Anxiety
26-63**	Severe Anxiety

Note.**Type A Personality: > 25 scores (severe Anxiety), *Type B Personality: ≤ 25 scores (Minimal, Mild and Moderate Anxiety)

The Study Variables

This study has various variables listed below:

Independent Variables

The independent variables are age, gender, marital status, residence, year of study, family structure, any family history of anxiety & coping approach.

Dependent Variables

The dependent variable is Type A & Type B personality and academic year.

The Study Rigour

A well-validated and reliable questionnaire was used to collect the data. The BAI scale was devised by Beck (Beck et al., 1997). The BAI scale held 21 self-report items (Beck et al., 1996).

This study's purpose was to determine the prevalence of Type A and Type B personality traits among undergraduate nursing students and examine the potential relationship between personality types and the academic year of these students. Moreover, a sample of 136 participants was used to assess statistical significance. Additionally, since this was a multi-centered study, both institutes catered to students from the same sociodemographic and educational background. Furthermore, this is important as differences in sociodemographic and educational background could be possible due to confounding factors. Moreover, the differences in Pakistan's nursing Schools in terms of nursing resources and socioeconomic/socio-demographic background may influence the relationship between the personality type and the academic year. However, due to time and resource constraints, it was logical to exclude this layer of complexity.

Furthermore, BAI measures anxiety, by categorising the symptoms on a 4-point Likert scale. Next, Personality Types A and B are identified based on anxiety levels as minimal, mild, moderate, and severe. However, the level of anxiety categorises Type A and Type B personality. This tool is used for multiple purposes for assessing the anxiety level in people in multiple situations and the idea is used to categorise Type A and Type B personality. However, in our study, other socio-demographic variables were correlated with BAI to acquire rich information for determining the personality type.

Furthermore, a study conducted by Hisam et al. (2014) and Bodla et al. (2020) supported the idea that the BECK Anxiety Inventory was a valid questionnaire for the assessment of type A

& type B personality (Bodla et al., 2020; Aliya Hisam et al., 2014). Moreover, the objective of both studies was to identify the differences between individuals with Type A and Type B personalities by examining their respective levels of anxiety. Furthermore, the identification of Type A and Type B was conducted using operational terms. Consequently, individuals with a score of 26 or higher were classified as exhibiting Type A personality traits, whereas those with a score of 25 or below were identified as having Type B personality characteristics. Hence, both the studies were able to validate this questionnaire for the personality type assessment.

Ethical Consideration

This research had been approved by the ERC of the Aga Khan University Hospital in Karachi, Pakistan **(Annex-II)**. In this respect, prior to the commencement of data collection, formal and written authorisation was obtained from the relevant dean of the chosen institution of Nursing and Midwifery. Moreover, the process of obtaining informed consent from participants (both online and face-to-face) was done before collecting data. Furthermore, the involvement of individuals was of voluntary nature and devoid of coercion. Additionally, the study ensured the provision of confidentiality and anonymity to all participants. Likewise, the research participants, teachers, as well as principals, were informed about the study's objectives. Similarly, the study implemented procedures that maintained the confidentiality of participants by employing questionnaire encoding techniques. Also, confidentiality was maintained by securing the data with password protection. The research team was the only group with access to the data. Participants may provide responses that they perceive as socially desirable or acceptable, leading to response bias. This could particularly affect sensitive topics or questions related to personal experiences. Ensuring confidentiality and anonymity can help mitigate this bias.

The Summary

This chapter describes the methodology of this quantitative study. The study used a cross-sectional analytical research design. The study setting was two private nursing schools in Karachi, Pakistan. One institute was the Aga Khan University, School of Nursing and Midwifery, Karachi, and other was the Murshid Hospital and Health Care Center, School of Nursing and Midwifery, Karachi, Pakistan. Moreover, the population was undergraduate nursing students enrolled in a four-year BScN Programme, studying in Year-I, II, III and Year-IV in both nursing schools. Furthermore, the study period was June 2023 – December 2023. Next, the researcher utilised quota sampling for the selection of the final sample for the study. This chapter also included the instrument, procedure for collecting data, entry, and analysis of the collected data, along with ethical considerations.

Chapter Four: Results

This chapter presents a comprehensive overview of the personality Type A and Type B among nursing undergraduates. The content is two-fold: first, the socio-demographic data of the nursing students. Additionally, it also shows personality Types A and B descriptive data when analyzing institutes separately and then in a combined form. In the last section, the quantitative analysis, the chi-square test (χ^2) and binary logistic regression models are identified. Then, a summary of the chapter follows.

The Socio-demographic Characteristics of the Nursing Students

Table 1 presents an in-depth sociodemographic profile of the population (N=136). Equal frequency 68 (50%) of AKU and 68 (50%) of Murshid SONAM students were investigated. Moreover, to ensure gender diversity, the students from 25% of an institution's enrollment were selected from each academic year. Specifically, 67 (49.3%) participants were males and 69 (50.7%) females.

Moreover, Year I comprised 35 (25.7%) students of the sample, whereas Year II and III comprised 34 (25%) students each. The Year-IV group had 33 (24.3%) students. With 131 (96.3%) participants, aged 18-25 and 4 (2.9%) aged 26-30, this poll had a substantial age skew. One response went to the left group. Most participants, 129 (94.9%) were single, while a few i.e., 7 (5.1%) were married.

Furthermore, many participants 80 (58.8%) lived in Karachi, Pakistan. Alternatively, 56 (41.2%) lived outside Karachi. The study found that 70 (51.5%) of the participants were brought up in the joint family system. Then there were participants living in nuclear families, which comprised 49 (36%) participants.

Moreover, the participants included 17 (12.5%) single-parent families. However, 50% of participants 68 reported living with their families. Many participants, 58 (42.6%) of them lived in hostels, while others (8) lived with their families (5.9%) and 2 (1.5%) lived alone.

Table 1 *The Socio-demographic Characteristics of Nursing Students (N=136*)

Variables		Frequency	Percentage (%)
Study Institute	AKU SONAM	68	50%
	Murshid SONAM	68	50%
Gender	Male	67	49.3%
	Female	69	50.7%
Year of Study	Year-I	35	25.7
	Year-II	34	25
	Year-III	34	25
	Year-IV	33	24.3
Age in Years	18-25	131	96.3
	26-30	4	2.9
	31-35	1	0.7
	36& above	0	0%
Marital Status	Single	129	94.9
	Married	7	5.1
	Divorced	0	0%
	Separate	0	0%
Area of Residence	Karachi	80	58.8
	Outside Karachi	56	41.2
	Outside Pakistan	0	0%
Family structure	Nuclear	49	36%
	Joint	70	51.5%
	Single Parent	17	12.5%
	Stepfamilies	0	0%
Living Status	Family	68	50%
	Hostel	58	42.6%
	Family Members	8	5.9%
	Live Alone	2	1.5%

Note. The table gives an overview of the details of the participants such as their gender, age, educational year, family status, structure, and residence, etc.

Similarly, two institutions' research participants' Type A and Type B personality percentages corresponded (Table 2). The study of 136 nursing students showed 29 (21.3%) Type A and 107 (78.7%) Type B personalities. Moreover, 8 (22.9%) Type A and 27 (77.1%) Type B students were in Year I. In Year II, 8 (23.5%) Type A and 26 (76.5%) Type B students were found. Likewise, the Year III had 8 (23.5%) Type A and 26 (76.5%) Type B personality students. In addition, Year IV had 5 (15.2%) Type A and 28 (84.8%) Type B personality students.

Table 2 *Frequency of Type A and B Personality among Nursing Students(N=136)*

Student's Year	**Type A**	**Type B**	**Total**
	n (%)	n (%)	n (%)
Year-I	8(22.9)	27(77.1)	35(25.7)
Year-II	8(23.5)	26(76.5)	34 (25)
Year-III	8(23.5)	26(76.5)	34 (25)
Year-IV	5(15.2)	28(84.8)	33 (24.2)
Total	**29(21.3)**	**107(78.7)**	**136(100)**

Moreover, beyond institutional analysis, the respective academic year and personality types were compared between the two institutes' students (Table 3). Furthermore, the study found that the proportion of Type A and Type B personality in AKU SONAM nursing students by academic year. The sample contained 68 students: 20 (29.4%) Type A and 48 (70.6%) Type B. Moreover, the Type A were 6 (33.3%) and Type B were 12 (66.7%), completing Year I with 18 (26.5%). Furthermore, Year-II comprised 16 (23.5%), 5 (31.3%) Type A and 11 (68.8%) Type B

students. Years III had 17 (25%) students with 4 (23.5%) Type A and 13 (76.5%) Type Bs. Finally, 5 students ss(29.4%) were Type A, 12 (70.6%) Type B, out of 17 (25%) in Year-IV.

Furthermore, the percentage of Type A students declined from 6 (33.3%) in Year I, 5 (31.3%) in Year II and, 4 (23.5%) in Year III respectively. Year IV had more 5(29.4%) Type A students than Year III. Similarly, Year I and II included 12 (66.7%) and 11 (68.8%) Type B students. Likewise, Year III had more Type B 13 (76.5%). However, contrary to Year I and II, Year IV students, more i.e., 12 (70.6%) were Type B.

Table 3 *Frequency of Type A and Type B Personality among AKU SONAM Nursing Students (n=68)*

Student's Year	Type A	Type B	Total Students
	n (%)	n (%)	n (%)
Year-I	6(33.3)	12(66.7)	18(26.5)
Year-II	5(31.3)	11(68.8)	16(23.5)
Year-III	4(23.5)	13(76.5)	17(25)
Year-IV	5(29.4)	12(70.6)	17(25)
Total	20 (29.4)	48(70.6)	68(100)

Table 4 illustrates that the Type A student ratio increased from Year I to III. Year-I had 2 (11.8%), Year-II had 3 (16.7%), and Year-III had 4 (23.5%) Type A personality students. However, Year IV had no Type A personality student. Moreover, Year I–III had decreased Type B personality students: 15 (88.2%), 15 (83.3%), and 13 (76.5%) respectively. Similarly, Year IV had 16 (100%) Type B personality students. Moreover, Murshid SONAM had less Type A students i.e., 9 (13.2%) and more Type B personality students i.e., 59 (86.8%).

Table 4 *Frequency of Type A and Type B Personality among Murshid SONAM Nursing Students (n=68)*

Student's Year	Type A	Type B	Total
	n (%)	n (%)	n (%)
Year-I	2 (11.8)	15 (88.2)	17 (25)
Year-II	3 (16.7)	15 (83.3)	18 (26.5)
Year-III	4 (23.5)	13 (76.5)	17 (25)
Year-IV	0 (0)	16 (100)	16 (23.5)
Total	9 (13.2)	59 (86.8)	68 (100)

Moreover, gender distribution in a sample of 136 students (Table 5) meant that there were 19 (14%) females and 10 (7.4%) males having Type A personality. 50 (36.8%) female students had less Type B personality than male students 57 (41.9%). Moreover, Type A personality female students in Year-I were 6 (31.6%), 4 (25%) in Year-II, 5 (31.3%) in Year-III, and 4 (22.2%) in Year-IV. Moreover, Type A personality male students were 2 (12.5%) in Year-I, 4 (22.2%) in Year-II, 3 (16.7%) in Year-III, and 1 (6.7%) in Year-IV.

Furthermore, Type B personality female students in Year-I were 13 (68.4%), 12 (75%) in Year-II, 11 (68.8%) in Year-III, and 14 (77.8%) in Year-IV. Moreover, Type B personality male students were 14 (87.5%) in Year-I, 14 (77.8%) in Year-II, 15 (83.3%) in Year-III, and 14 (93.3%) in Year-IV.

Table 5 *Gender Distribution of Type A and Type B Personality Nursing Students (N=136*)

Students' Year		Type A	Type B	Total
		n (%)	n (%)	n (%)
Year-I	Female	6 (31.6)	13 (68.4)	19 (54.3)
	Male	2 (12.5)	14 (87.5)	16 (45.7)
Year-II	Female	4 (25)	12 (75)	16 (47.1)
	Male	4 (22.2)	14 (77.8)	18 (52.9)
Year-III	Female	5 (31.3)	11 (68.8)	16 (47.1)
	Male	3 (16.7)	15 (83.3)	18 (52.9)
Year-IV	Female	4 (22.2)	14 (77.8)	18 (54.4)
	Male	1 (6.7)	14 (93.3)	15 (45.5)
Total	Female	19 (14)	50 (36.8)	69 (50.7)
	Male	10 (7.4)	57 (41.9)	67 (49.3)
Total		29 (21.3)	107 (78.7)	136 (100)

In Table 6, AKU had 68 nursing students: 57 (83.8%) females and 11 (16.2%) males. Females were 17 (29.8%) Type A and males 3 (27.3%). Moreover, AKU had 8 (72.7%) male and 40 (70.2%) female Type B personalities. In terms of academic years, Type A personality female students in Year-I were 5 (33.3%), 4 (30.8%) in Year-II, 4 (28.6%) in Year-III, and 4 (26.7%) in Year-IV. Moreover, male students were 1 (33.3%) in Year-I, 1 (33.3%) in Year-II, 0 (0%) in Year-III, and 1 (50%) in Year-IV. Type B personality female students in Year-I were 10 (66.7%), 9 (69.2%) in Year-II, 10 (71.4%) in Year-III, and 11 (73.3%) in Year-IV=. Moreover, Type B personality male students were 2 (66.7%%) in Year-I, 2 (66.7%) in Year-II, 3 (100%) in Year-III, and 1 (50%) in Year-IV.

Table 6 *Frequency of Type A and Type B Personality among AKU SONAM Nursing Students n=68 (gender wise)*

Students' Year		Type A n (%)	Type B n (%)	Total n (%)
Year-I	Female	5 (33.3)	10 (66.7)	15 (83.3)
	Male	1 (33.3)	2 (66.7)	3 (16.7)
Year-II	Female	4 (30.8)	9 (69.2)	13 (81.3)
	Male	1 (33.3)	2 (66.7)	3 (18.8)
Year-III	Female	4 (28.6)	10 (71.4)	14 (82.4)
	Male	0 (0)	3 (100)	3 (17.6)
Year-IV	Female	4 (26.7)	11 (73.3)	15 (88.2)
	Male	1 (50)	1(50)	2 (11.8)
Total	Female	17 (29.8)	40 (70.2)	57 (83.8)
	Male	3 (27.3)	8(72.7)	11 (16.2)

Furthermore, among 68 Murshid nursing students, Table 7 listed 12 (17.6%) female and 56 (82.3%) male Murshid nursing students. Moreover, male students had 7 (10.3%) Type A personalities and female Type A personalities were 2 (2.9%). Then 49 (72.1%) Murshid males were more Type B personality holders than females i.e., 10 (14.7%). In terms of academic years, Type A personality female students in Year-I were 1 (25%), 0 (0) in Year-II, 1 (50%) in Year-III, and 0 (0%) in Year-IV. Moreover, male students were 1 (7.7%) in Year-I, 3 (20%) in Year-II, 3 (20%) in Year-III, and 0 (0%) in Year-IV. Moreover, Type B personality females in Year-I were 3 (75%), 3 (100%) in Year-II, Year-III 1 (50%), and Year-IV 3 (18.8%) students. Furthermore,

males were 12 (92.3%) in Year-I, 12 (80%) in Year-II, 12 (70.6%) in Year-III, and 13 (81.3%) in Year-IV.

Table 7 *Frequency of Type A and Type B Personality among Murshid SONAM Nursing Students n=68 (gender wise)*

Year	Gender	Type A	Type B	Total
		n (%)	n (%)	n (%)
Year-I	Female	1 (25)	3 (75)	4 (23.5)
	Male	1 (7.7)	12 (92.3)	13 (76.5)
Year-II	Female	0 (0)	3 (100)	3 (16.7)
	Male	3 (20)	12 (80)	15 (83.3)
Year-III	Female	1 (50)	1 (50)	2 (11.8)
	Male	3 (20)	12 (70.6)	15 (88.2)
Year-IV	Female	0 (0)	3 (18.8)	3 (18.8)
	Male	0 (0)	13 (81.3)	13 (81.3)
Total	Female	2 (2.9)	10 (14.7)	12 (17.6)
	Male	7(10.3)	49 (72.1)	56 (82.4)

Table 8 (A) describe nursing students' socio-demographic distribution and Type A and Type B personalities. Moreover, Chi-square gender analysis identified no significant correlation ($p=0.073$, $\chi=3.22$, d. f=1) between male and female personalities. Accordingly, Type B personalities were found in all age groups, but age ($p=0.667$, $\chi=1.407$, d. f=2), marital status ($p=1.000$, $\chi=0.218$, d. f=1), and academic year ($p=0.804$, $\chi=0.996$, d. f=3) failed to correlate. Additionally, demographics, student area of residence ($p=0.958$, $\chi=0.203$, d. f=1), family structure ($p=0.967$, $\chi=0.074$, d. f=2), living status ($p=-0.969$, $\chi=0.642$, d. f=3), and nursing student personalities were not correlated.

Table 8 *Association of Socio-demographic Variables with Type A and Type B Personality among Nursing Students*

Socio-demographic Variables		Type A	Type B	F	χ^2tests	d.f.	p-value
		n (%)	n (%)	n (%)			
Gender	Male	10 (7.4)	57 (41.9)	67 (49.3)	3.22	1	0.073
	Female	19 (14)	50 (36.8)	69 (50.7)			
Age in Years	18-25	29 (22.1)	102 (77.9)	131(96.3)	1.407	2	0.667
	26-30	0 (0)	4 (3.7)	4 (2.9)			
	31-35	0 (0)	1 (0.9)	1 (0.7)			
	36& above	0 (0)	0 (0)	0 (0)			
Marital Status	Single	28 (20.6)	101 (74.3)	129(94.9)	0.218	1	1.00
	Married	1 (0.7)	6 (4.4)	7 (5.1)			
	Divorced	0 (0)	0 (0)	0 (0)			
	Separate	0 (0)	0 (0)	0 (0)			
Year of Study	Year-I	8 (5.9)	27 (19.9)	35 (25.7)	0.996	3	0.804
	Year-II	8 (5.9)	26 (19.1)	34 (25.0)			
	Year-III	8 (5.9)	26 (19.1)	34 (25.0)			
	Year-IV	5 (3.7)	28 (20.6)	33 (24.3)			
Area of Residence	Karachi	16 (11.8)	64 (47.1)	80 (58.8)	0.203	1	0.652
	Outside Karachi	13 (9.6)	43 (31.6)	56 (41.2)			
	Outside Pakistan	0 (0)	0 (0)	0 (0)			
Family structure	Nuclear	10 (7.4)	39 (28.7)	49 (36.0)	0.074	2	0.957

	Joint	15 (11)	55 (40.4)	70 (51.5)			
	Single Parent	4 (2.9)	13 (9.6)	17 (12.5)			
	Stepfamily	0 (0)	0 (0)	0 (0)			
Living Status	Family	15 (11)	53 (39)	68 (50)	0.642	3	0.969
	Hostel	12 (8.8)	46 (33.8)	58 (42.6)			
	Family Members	2 (1.5)	6 (4.4)	8 (5.9)			
	Live Alone	0 (0)	2 (1.5)	2 (1.5)			

Note. *p-values ≤ 0.05 is considered significant ** χ^2tests: Chi square test of significance

Furthermore, Table 8 (B) demonstrates that students who had seen a family member with anxiety were not substantially different (p=0.286, χ^2=1.137, d.f =1) from those who had not. Hampered domain of life differences were also minor (p = 0.216, χ^2=5.708, d.f =4). In contrast, students with anxiety family had significant difference (p= 0.009, χ^2= 11.614, d.f =3). Moreover, seeking professional help did not correlate (p=0.106, χ^2= 4.488, d.f =2) with student personality Types A and B. Consistently, the preferred way of handling anxiety (p=0.138, χ^2= 5.866, d.f =3) had insignificant association. Conversely, emotion-focused, or problem-focused coping strategy predicted significant association (p=0.040, χ^2= 4.227, d.f =1) with Type A or Type B personality. In addition, no significant relationship (p=0.677, χ^2= 0.174, d.f =1) was identified in evaluating the situation first. Contrary, impulsive students and personality types were significantly related (p=0.015, χ^2= 5.970, d.f =1). Similarly, impulsive attitude was also significantly associated (0.05, χ^2= 5.988, d.f =2) with the outcome. Additionally, the perception of academic periods as competitive and stressful was insignificant (p=0.601, χ^2= 0.273, d.f =1). Moreover, tolerance of others was also insignificant association (p= 0.841, χ^2= 0.040, d.f =1), with the personality type distribution

Table 9 *Association of Personality Traits and Type A and Type B Personality among nursing Students*

S.#	Personality Traits		Type A n (%)	Type B n (%)	F n (%)	χ^2tests	d.f	p-value
1	Seen family member with Anxiety	Yes	22 (16.2)	70 (51.5)	92 (67.6)	1.137	1	0.286
		No	7 (5.1)	37 (27.2)	44 (32.4)			
2	If yes, domain of life hampered	Personal	4 (2.9)	28 (20.6)	32 (23.5)	5.708	4	0.216
		Professional	2 (1.5)	7 (5.1)	9 (6.6)			
		Academic	3 (2.2)	9 (6.6)	12 (8.8)			
		All	13 9.6)	26 (19.1)	39 (28.7)			
		Not effected	7 (5.1)	37 (27.2)	44 (32.4)			
3	Mention that Family member	Parents	6 (4.4)	28 (20.6)	34 (25)	11.614	3	0.009*
		Sibling	9 (6.6)	8(5.9)	17 (12.5)			
		Any other	7 (5.1)	34 (25)	41 (30.1)			
		NA[a]	7 (5.1)	37 (27.2)	44 (32.4)			
4	If Yes, Seek professional help	Yes	6 (4.4)	34 (25.0)	40 (29.4)	4.488	2	0.106
		No	16 (11.8)	36 (26.5)	52 (38.2)			
		NA[a]	7 (5.1)	37 (27.2)	44 (32.4)			
5	Preferred way of handling anxiety	Talk to Friend	11(8.1)	52 (38.2)	63 (46.3)	5.866	3	0.138
		Take Professional Help	13 (9.6)	25 (18.4)	38 (27.9)			
		Drug Consumption/ Smoking	0 (0)	0 (0)	0 (0)			
		Exercise	2 (1.5)	18 (13.2)	20 (14.7)			
		Others	3 (2.2)	12 (8.8)	15 (11)			

6	Coping strategy	Emotion Focused	17 (12.5)	40 (29.4)	57 (41.9)	4.227	1	0.040*
		Problem Focused	12 (8.8)	67 (49.3)	79 (58.1)			
7	Evaluate the situation first	Yes	22 (16.2)	85 (62.5)	107 (78.7)	0.174	1	0.677
		No	7 (5.1)	22 (16.2)	29 (21.3)			
8	Always react impulsively	Yes	23 (16.9)	58 (42.6)	81 (59.6)	5.970	1	0.015*
		No	6 (4.4)	49 (36)	55 (40.4)			
9	If Yes, This Attitude for	All domain of Life	8 (5.9)	21 (15.4)	29 (21.3)	5.988	2	0.05*
		Specific ways of life	15 (11)	37 (27.2)	52 (38.2)			
		NA[a]	6 (4.4)	49 (36)	55 (40.4)			
10	Academic periods remain competitive and causes stress	Always like that	9 (6.6)	28 (20.0	37 (27.2)	0.273	1	0.601
		Sometimes like that	20 (14.7)	79 (58.1)	99 (72.8)			
11	In your social Circle you are tolerant of other?	Yes	23 (16.9)	83 (61)	106 (77.9)	0.040	1	0.841
		No	6 (4.4)	24 (17.6)	0 (22.1)			

*Note. a) NA=Not Applicable, *p-values ≤ 0.05 is considered significant ** χ^2tests: Chi square test of significance*

A univariate binary logistic regression analysis of socio-demographic variables and student personality Types A and B is presented in Table 9. The data showed that AKU students were 2.731 times more inclined towards personality Type A, than Murshid students. A significant difference was indicated by the 95% confidence interval (p=0.024; CI=1.140-6.547). Thus, AKU nursing students were more 'Type A personality' than the Murshid students. Similarly, in both institutes, the female students had 2.166 times higher odds ratio of Type A personality than males, although the difference was not significant (p=0.076; CI=0.921-5.092, 95% CI). Correspondingly, the analysis included age group 18-25 and 26-35 (since 26-30 and 31-35were

combined). Moreover, the relationship between Type A personality and age group18-25 was 1.248 times higher (p=0.233; CI=0.867-1.795) than with 26-35 students. In terms of marital status, single students had 1.663 times the odds ratio of married students. However, this indicated no significant connection (p=0.644; CI= 0.192-14.394) with Type A personality. Moreover, Year-I, II, & III students at both institutes had odds ratios of 1.659, 1.723, and 1.723 times greater than Year I-IV students. In addition, Year-I (p=0.422; CI=0.482-5.711) and Year-II and III (p=0.389; CI=0.499) had insignificant relationship with year of study and Type A personality. Furthermore, Karachiites had 0.827 times the odds of outside Karachi students. However, the area of residence did not predict Type A personality (p=0.653; CI= 0.361-1.892).

Additionally, for the family described, nuclear (OR= 0.833, CI: 0.223-3.115, p=0.786) and joint (OR=0.886, CI: 0.252-3.118, p=0.851) family students were at a higher risk than single parent students. There existed no association between family structure and Type A personality in students. Consistently, students' living status, family (OR=1.247; CI 1.247; p=0.452), hostel (OR= 1.230; CI=0.691; p=0.481), and family members (OR= 1.284; CI=0.682-2.419; p=0.439) had P-values above (p=0.05) for all categories. Consequently, Type A personality was unaffected by the living status as a student.

Likewise, the odds ratio seen in persons with anxiety was 1.661 times higher for 'Yes' than 'No' responses. Further, results with a 95% confidence interval were insignificant (p=0.290; 0.649-4.249) demonstrated that Type A personality was uninfluenced. Moreover, among the students' responses to the 'Hampered Life of anxious people' equation, 'Yes' were 0.755, 1.510, 1.762, and 2.643 times higher respectively than counter-responses. Next, 'Personal' (p=o.677; CI= 0.201-2.835), 'Professional' (p=0.647; CI=0.258-8.839), 'Academic' (p=0470; CI=0.379-8.187), and 'All' (p=0.069; CI= 0.928-7.528) hampered life responses showed insignificant

association with Type A personality. Furthermore, in the 'Affected Family Member' analysis, parents (OR=1.133), siblings (OR=5.946), and other family members (OR=1.088) had higher odds ratios compared to the no-response group. In addition, the variable siblings showed a significant association (p=0.005; CI=1.706-20.731), while the other two categories had minor differences (p=0.838; CI=0.343-3.745 and p=0.885; CI=0.346-3.425) as compared to 'Parents & Any other' factor.

In addition to analysis, professional help increased Type A personality risk by 2.349 times and not by 0.933 times. Moreover, there was no observed the correlation between the variables 'Yes' (p=0.908; CI=0.285-3.053) and 'No' (p=0.094; CI=0.864-6.384) because of insignificant associations. According to statistical analysis, Handle anxiety predicted Type A personality to be 0.846, 2.080, and 0.444 times higher. On the other hand, the statistics showed no significant connection in any of the following categories: 'Talk to Friend' (p=0.818; CI= 0.204-3.510), 'Take Professional Help' (p=0.316; CI=0.497-8.706), or 'Exercise' (p=0.411; CI=0.64-3.070). Conversely, the OR for emotion-focused coping approach was 2.373 times higher than problem-focused approach. Moreover, a significant difference existed at P=0.043 (CI 1.028-5.476). However, 'Evaluate the Situation' (OR =0.813) exceeded 'no response' (CI: 0.308-2.148, p=0.677) with insignificant outcomes. Furthermore, impulsive participants and Type A were significantly associated with an OR of 3.239 and a p-value of 0.018 (CI= 1.221-8.591). Moreover, attitudes towards All domains of life (p= 0.058: CI=0.960-10.079) and specific ways affected Type A personalities (3.311 times higher than NA outcome). The relationship was significant with a P-value of 0.024. Competitive stress was insignificant with a P-value of 0.602. Tolerance was not significantly different from non-tolerance (P=0.841; CI=0.405-3.034).

Table 10 Results of Univariate Binary Logistic Regression Analysis of Independent Variable and Type A and Type B Personality

Socio-demographic Data		OR	95%CI L-U	P – Value
Institution	AKU Murshid®	2.731	1.140-6.547	0.024*
Gender	Female Male®	2.166	0.921- 5.092	0.076
Age in Years	18-25 26-35®	1.248	0.867- 1.795	0.233
Marital Status	Single Married® Divorced Separate	1.663	0.192-14.394	0.644
Year of Study	Year-I Year-II Year-III Year-IV®	1.659 1.723 1.723	0.482- 5.711 0.499- 5.944 0.499-5.944	0.422 0.389 0.389
Area of Residence	Karachi Outside Karachi® Outside Pakistan	0.827	0.361-0.892	0.653
Family structure	Nuclear Joint Single Parent® Stepfamilies	0.833 0.886	0.223- 3.115 0.252- 3.118	0.786 0.851
Living Status	Family Hostel Family Members Live Alone®	1.247 1.230 1.284	0.702-2.215 0.691-2.188- 0.682- 2.419	0.452 0.481 0.439
Seen person with Anxiety	Yes No®	1.661	0.649-4.249	0.290
Hampered Life	Personal Professional Academic All No®	0.755 1.510 1.762 2.643	0.20-2.835 0.258-8.839 0.379-8.187 0.928-7.528	0.677 0.647 0.470 0.069

Affected Family Member	Parents	1.133	0.343-3.745	0.838
	Sibling	5.946	1.706-20.731	0.005*
	Any other	1.088	0.346-3.425	0.885
	No®			
Take Professional Help	Yes	0.933	0.285-3.053	0.908
	No	2.349	0.864-6.384	0.094
	NA[a]®			
Handle Anxiety	Talk to Friend	0.846	0.204-3.510	0.818
	Take a Professional Help	2.080	0.497-8.706	0.316
	Drug consumption/Smoking	0.444	0.641-3.070	0.411
	Exercise			
	Others®			
Cope Situation	Emotion Focused	2.373	1.028-5.476	0.043*
	Problem focused®			
Evaluate the situation	Yes	0.813	0.308-2.148	0.677
	No®			
Always React Impulsive	Yes	3.239	1.221-8.591	0.018*
	No®			
Yes, this attitude	All domains of Life	3.111	0.960-10.079	0.058
	Specific ways of Life	3.311	1.172-9.353	0.024*
	NA[a]®			
Competitive Stress	Always been like that.	1.270	0.518-3.114	0.602
	Sometimes been like that®			
Tolerant of others	Yes	1.108	0.4053.034	0.841
	No®			

*Note. a) NA=Not Applicable, ®= Reference Category *p-values ≤ 0.05 is considered significant*

Further, a multivariate binary logistic regression was employed on personality types and significant predictors.

Lastly, in our study, all those variables that came significant in the univariate model, were analysed in MLR to see which factor remain significant in our final model that predicts students inclined toward Type A personality.

Findings revealed that impulsive nursing students are 3.398 times more likely that they will have Type A personality than non-impulsive students, among the five significant variables examined after univariate analysis

Moreover, Multivariate logistic regression was used to identify personality Types A and B with independent variables (Table 10). The OR of 2.082 (CI: 0.786-5.514) between AKU and Murshid institutions indicated a relationship, but the association was not statistically significant (p = 0.140). Similarly, 'Affected Member' (Siblings) predicted an association with 3.431 odds (CI: 0.866-13.159), although p=0.079 was insignificant. Notably, life-domain coping conditions and attitudes did not significantly affect the outcome. Contrary, an OR of 3.398 suggested a significant association between impulsive reactions and the outcome. Consequently, correlation was significant (p=0.028). The study indicated that impulsivity affected personality Types A and B of nursing students.

Table 11 *Multi-variate Binary Logistic Regression Model*

Independent Variables	OR	95%CI		p-value
		Lower CI	Upper CI	
Institutes, AKU	2.082	0.786	5.514	0.140
Murshid®				
Affected Member,	1.066	0.304	3.732	0.920
Parents	3.431	0.866	13.159	0.079
Siblings	1.109	0.322	3.816	0.870
Any other				
NA[a] ®				
Cope Situation, Yes	2.129	0.847	5.354	0.108
No®				
React Impulsive, Yes	3.398	1.139	10.138	0.028*
No®				
Yes, Attitude in All	0.801	0.262	2.448	0.697
domains				
of life				
Specific ways of life®				
NA[a] ®				

*Note. a) NA=Not Applicable, ®= Reference Category *p-values ≤ 0.05 is considered significant*

The Summary

This study examined Type A personality and Type B personality in undergraduate nursing students from two private nursing schools in Karachi, Pakistan, based on numerous factors like academic year, gender, and sociodemographic factors. Several tables indicated the predominance of personality Types A and B among AKU and Murshid SONAM nursing students of various academic years. Both institutions and academic years contributed equally to the data set. Most students were single, aged 18-25, Karachiites, nuclear family members, and lived with their families. Two institutes had less (21.3%) Type A and more (78.7%) Type B nursing students. Type A's association with academic year increased (22.9%-23.5%) from Year-I to Year-III, while Type B's decreased (77.1%-76.5%). In Year-IV, Type A showed a decreased level (15.2%) and Type B (84.8%) increased. As a result, from Year I to Year III, Type A personalities rose while Type B decreased. With different institute perspectives, AKU had more Type A and less Type B than Murshid. AKU students' Type A personalities fell from Year-I to Year-III, but Murshid students' Type A and B personalities increased. At AKU, Year-IV has fewer Type A and more Type B students, while Murshid has no Type A and all Type B.

The gender-based study revealed a higher prevalence of Type A females compared to males and a lower prevalence of Type B females compared to males. The relationship between gender and academic year shows clear patterns of increase and decrease in alternate years for personality Types A and B in both institutions. In addition, there is a higher proportion of Type A females compared to males at AKU, but Type B females are less prevalent. In contrast, the Murshid group exhibits a higher prevalence of Type A and Type B males than females.

Furthermore, critical conclusions emerged from the brief analysis provided above. The personality Types A and B were analyzed utilizing univariate binary logistic regression and multivariate logistic regression. Although some demographic characteristics might be correlated

with Type A personality, no statistically significant results were obtained through binary logistic regression. Additionally, no correlation was discovered between personality types and familial, coping, or attitude traits. Significantly, it was found that impulsive reactions were excellent predictors of Type A personality. Certain variables in the multivariate logistic regression study exhibited a correlation with personality types; however, the degree of statistical significance in this relationship was inconsistent.

Chapter Five: Discussion

This chapter discusses current study findings and compares them with the previous research. First, the chapter reviews the findings of nursing undergraduates related to socio-demographics, prevalence of personality Types A and B and explore personality traits findings. Additionally, a comprehensive evaluation examines the study's strengths, limitations, and recommendations. Finally, the chapter provides a conclusion of the study.

The study aimed to respond to the following research questions:

- What is the prevalence of Type A and Type B personalities among first to fourth year undergraduates nursing students at two private Schools of Nursing in Karachi, Pakistan?
- What is the association between the personality types of undergraduate nursing students with their academic years?

A total of 136 nursing scholars from two institutions were recruited in this study. Data was collected face-to-face and online. Based on the BAI scale anxiety symptom, this study was able to categorize four-year nursing undergraduates into Type A and Type B personalities. Students' socio-demographics, personality Types A and B prevalence across the institutions, and gender were analyzed regarding student's academic years. Sociodemographic variables i.e., age, gender, marital status, year of study, family structure, and current living status and personality traits were assessed in two private nursing schools in Karachi, Pakistan.

In this study, in both the institutions, the prevalence Type B personality nursing students were more than Type A. Consequently, the higher prevalence of Type B personalities among undergraduate nursing students in Karachi, particularly at Aga Khan University and Murshid Nursing School. The present study's results are similar to the study conducted by Lateef et al. (2019), and Bodla et al. (2020) who reported the high prevalence of Type B (89.2%) and less

Type A . This may be due to selection bias and the perceived requirements and attributes we look for in a future nurse in the nursing field. The other reason could be that we often favor candidates that have traits, such as patience, empathy, adaptability, and a relaxed demeanor that is evaluated during the selection interview. The prevalence of type B in our study can also be attributed to the collaborative educational environment, better coping mechanisms, cultural influences, self-selection, and the influence of faculty and role models that the institutional context provide.

The association of personality Type A and B, in both the institution, with students' academic year is insignificant. This study indicated that Type A personality was more prevalent as the students successfully progressed from Year I, Year II, and Year III, although Year IV had fewer Type A nursing students. Similar association between personality Types (A & B) and with academic success with progressing years was found by Aliya et al. (2014). However, Bodla et al. (2020) and A. Hisam et al. (2014) found that Type A personality students in medical college increased from year one to the year V. The researcher believes that the prevalence of Type A in AKU Year I, II and III nursing students is presumably due to exam anxiety, as year II is considered the make-or-break year of the four years. The other reason is the adjustment factors as most of the students are hostilities and belong to the northern areas of Pakistan and have left their hometown for the first time. In addition, there is a huge cultural difference that exists in the south and north of Pakistan.

The prevalence of type A was less in Murshid institution as compared to AKU. As evident in the results that Murshid institution has more type B probably due to better self-coping, and better anxiety management, as indicated by the significant coping strategies mentioned in the personality traits. Some of the reasons could be the academic expectations from the students in both the institutions, course requirements, and year-long theoretical, skills, and clinical goals. A.

Hisam et al. (2014) and Bodla et al. (2020) showed a strong association between Type A and Type B personality in medical students' academic years; this is aligned with Alfulaij & Alnasir, (2014).

In terms of gender, the female nursing students of Year-I and Year-III exhibited a higher ratio of Type A personality than Year-II and Year-IV students in both the institutes. The reasons could be that in Murshid institution the male students were living with their families as they did not have hostel facility; a small proportion of them were married. Whereas, female students were accommodated in Murshid hostel, that restricts social live and were living away from family adding to their stress. The other reason is that AKUSONAM had approximately 150 students in a year with the highest female ratio, whereas Murshid SONAM admits 40 students each with a lower female ratio. Additionally, in our study, gender wise association with the personality is insignificant in both institutions. This is aligned with Bodla et al. (2020) and Aliya Hisam et al. (2014). Moreover, a comparative study was done at Mysore and Bangalore determined that nurse's anxiety have a positive association with Type A and a negative with Type B. Type A nurses are more anxious than type B, regardless of gender (Ghasemian & Kumar, 2017). Furthermore, another study by Alfulaij and Alnasir (2014) confirmed statistical significance of women are more Type A. Contrary to our study findings, a study recruited AKUH medical, nursing, and dental hygiene students for six months to evaluate anxiety, depression, and tension using the "Student-Life Stress Inventory" and "The Aga Khan University Anxiety and Depression Scale" (AKUADS). The study reported more anxiety among dental hygiene graduates compared to MBBS and SONAM students due to exam pressure, family academic expectations, and home desire were pressures (Rehmani et al., 2018).

Present study found high prevalence of Type A personality among male nursing students in Year-II and Year-III, while Year-I and Year-IV have less Type A prevalence. Similarly, the overall frequency of Type B personality is higher among male nursing undergraduates than female in this study. Whereas the prevalence of Type B personality in males nursing students are high in Year-I and Year-IV, and less in Year II and Year-III as compared to females. This may be because of high expectation of performance in Year-II and III as compared to their year I. This may have impact on the student's anxiety level and helps to shape personality. Correspondingly, Prosen (2022) exhibited the findings that gender roles differ between male and female nursing students. He claimed that female students enjoyed "nursing" and helping others whereas, the technology, leadership, and administration were imagined to men. Thus, addressing gender imbalance needed dispelling beliefs, raising awareness, using inclusive language and recruitment strategies, creating a balanced nursing staff, and changing nursing education. Consistently, a Turkish study proved that the prevalence of Type A personality is two third of all (172) the nursing students increased among females (66.98% female and 66.67% male) in the study with gender (Jafarov et al., 2023). Contrary, a study done on medical students in Peshawar by Shehzad, Waheed, Hussain, et al. (2022) explored the academic success with Type A and Type B personality with factors of stress anxiety and depression. In their study, the gender correlation was statistically significant (p-value of 0.05). Moreover, a similar study conducted on dental undergraduates in Peshawar, the academic performance was examined in relation of Types of personality (A & B) and associated factors of stress, anxiety, and depression (Shehzad, Waheed, khan Kabir, et al., 2022). Shehzad, Waheed, khan Kabir, et al. (2022) proclaimed the statistically insignificant gender relationship with academic success of Type A and Type B students. Their

study established the findings, the lower the anxiety the higher the success compared to those students having higher stress and lower success rate.

Socio-demographic Characteristics and Types of Personality

In this study, no association was found between demographics and personality types. Sociodemographic characteristics such as institutions, age in years, gender, year of study, marital status, area of residence, family structure, and current living status are all proven statistically insignificant. Furthermore, chi-square analysis revealed that among undergraduate nursing students, there was no significant correlation between Type A and Type B personality traits and sociodemographic data. However, univariate analysis revealed the significant findings between institutions and personality Types. This may be due to the university environment, quality of teaching and learning and expectations from students. However, both the institutions provided psychiatric counselling to their student.

The other reason could be the diversity in the student's population. Murshid has students with Sindh domicile only, whereas AKU have diversity of students outside Karachi, Sindh, and even Pakistan. There may be challenges with Karachiites living in a joint family system. They must cope with other challenges related to transport and other domestic liabilities. As, more students in our data were living with family (68%) less (58%) were hostilities whereas less were living among their relative's family.

Further, it was evident in present study that the female students with 18-25 years of age, and those who are single and living with joint family in Karachi, studying Year-I -III had more risk of developing Type A personality. Conversely, Jafarov et al. (2023) claimed in his study at Turkey, the findings revealed the ratio of Type A personality decreases as age advances. Contrary, other results showed the older (26-35 years age) students were at risk of developing Type A personality compared to younger students in army medical education. Additionally, the

results drew attention to the adverse health effects associated with students possessing Type A personalities (Aliya et al., 2014). Additionally, our study found no effect of marital status on personality development, most Type A students were single than Type B. None of the students divorced in our study. Conversely, Gieniusz-Wojczyk et al. (2022) study showed insignificant results with the personality Type A and B in terms of marital status, while, divorced nurses had more Type A as compared to married nurses, single and widowed.

To be familiar of about students' perception of term "anxiety" researcher inquired some item in the questionnaire, related to the students experienced with anxiety "or have ever seen person struggling with anxiety in their family". To know about their anxiety management, further queries were also investigated if they seek counselling or professional help that hampered their life domains. This revealed that either they have family history of anxiety or have other reasons that have influenced their personality types towards A or B. Questions regarding affected family members helped to familiarized with, parents and sibling have significant association in our analyses. Anxious personality traits come in learnt behaviour, may impact the psychology of students. Preferred way of handling anxiety may incline the students towards Type behavior characteristics of anxiety. While talking to a friend have less risk compared to exercising. Drug consumption remained responded in our study, nonetheless there is evident literature impacting personality. There may be possibility that student showed subjective response not using this anxiety handling strategy, that why who cope with emotions may also develop risk of anxiety, that is the significant finding of our study.

Moreover, student who saw an anxious family member showed no significant personality type correlation in this study. Not seeing the anxious family member is less likely to lead to Type A personality than seeing them. Besides, family members with impaired life domains had no

correlation with personality types. However, if all domains are affected of family member with anxiety, may lead to inclination of Type A personality compared to personal, professional, or academic domains. Though an affected family member with anxiety has strong positive correlation, with personality Types. Additionally, affected sibling had the increased probability than affected parents or any other family member with anxiety, to develop Type A personality. Conversely, a study conducted by Lawrence and Lawrence (2014) in India, to assess the personality Types and academic success among high school students. The study exposed the findings that the personality types of secondary school students vary depending on gender, location, language of instruction, and management style. Additionally, that family composition had no impact on secondary school students' personalities. The results of a different study indicated that Type-A students who use avoidance coping mechanisms feel more stressed than their peers, therefore it's imperative that college teachers remain mindful of the needs of varied students (Saadu & Adesokan, 2013).

In addition, the present study found a statistically insignificant connection between family members with anxiety who did not seek professional help and Type A personality development. Additionally, preferred anxiety management was not statistically significant. Those who seek professional help may develop Type A traits, unlike those who talk to friends, exercise, use drugs, or smoke. However, according to a study by Gieniusz-Wojczyk et al. (2022) affirmed that there is positive association of Type A personality nurses and alcohol related problems compared to Type B personality.

Moreover, recent study found that emotion-focused coping strategies were more likely than problem-focused coping strategies to cause type A. The results were statistically significant. In this study, evaluating first was inconsequential, whereas not evaluating reduced Type A

affinity. Conversely a study was done by Chinaveh (2014) found that Type-A personality students' avoidance coping methods increased anxiety. However, Type A and B students were assessed for approach and avoidance stress. Comparing Types, A and B stress changes, coping mechanisms were applied. Additionally, Type A and Type B behavior, interaction, and coping influenced much. The study found that type-A personalities avoid stress more than type-B.

Moreover, our study findings showed that Impulsive reaction was positively correlated with types of personality. Furthermore, it also found that nursing students with impulsive reactions had higher anxiety and impulsive personalities (Type A). Moreover, this attitude is statistically significant with personality types, while impulsive reactions in all domains have less, and specific ways of life have more influence. Another statistically insignificant indicator in our study was that academic periods remained competitive and stressful. Always competitive and stressed students have a lower risk of acquiring Type A personalities than sometimes competitive and stressed students. Furthermore, In 2022, Polish nurses' health and Type A behavior patterns were studied. According to Gieniusz-Wojczyk et al. (2022) most nurses aged 50 and older and 31 to 40 demonstrated Type A behavior. Hence, nursing stress increased type A behaviors. There was slight difference in discrimination perceptions based on personality types.

Additionally, according to our research, Type A tendencies were more prevalent among tolerant students. However, the statistical association is insignificant with personality types. Moreover, Korean researchers examined the relationship between personality factors, major satisfaction, and nursing student resilience (Lee & Kim, 2021). Accordingly, study findings sustained that major satisfaction was college life and interpersonal relationships. This was thought to stem from competitive and ambitious personality type of Type A. In adding up, A

large impact on grades and interpersonal connections was shown to be Type B's main satisfaction, likely due to its easygoing and non-urgent disposition (Lee & Kim, 2021).

Remarkably, the univariate regression analysis identified significant results regarding AKU students in comparison to murshid students. Furthermore, emotion-focused coping was more prevalent than problem-focused coping, suggested a positive correlation between personality types and coping strategies. In addition, consistent impulsive behaviour exhibited a robust correlation with a p-value of 0.018, and this impulsive behaviour is positively correlated with decisions regarding one's life. Lastly, in our study, a multivariate logistic regression analysis revealed a strong correlation between personality types and impulsive reaction ($p = 0.028$ and OR = 3.398 times larger than non-impulsive students) among the five variables examined. Conversely, in 2020, Malhotra conducted a study among high school students in India revealed a correlation between distinct personality types and pronounced emotional behaviour. Adding up, research indicated that emotional response is inversely correlated with personality type B and positively correlated with personality type A. The study found that socioeconomic status moderates Type A hostility. There was no such correlation between aggression and type B personality (Malhotra, 2020). Moreover, another study found that personality type drives juvenile aggression, which was significant. Several research suggested Type A personalities are more violent (Howard S Friedman & Stephanie Booth-Kewley, 1987; H. S. Friedman & S. Booth-Kewley, 1987; Aliya Hisam et al., 2014; Lisnyj et al., 2023; Rehmani et al., 2018; Shehzad, Waheed, Hussain, et al., 2022). Additionally, Type A persons were restless, aggressive, and quick to snap when upset. Peaceful Type Bs rarely get frustrated (Malhotra, 2020; Rehmani et al., 2018). According to Gecaite et al. (2019) cognitive tests, anxiety was significantly correlated with decreased cardiovascular reactivity. Other pressures did not influence anxiety or

negative effects (Brotman et al., 2007; Chida & Hamer, 2008). Although type-A people might feel more stress, they can reduce it by approaching tough situations. In addition to personality, other influential factors included coping skills, life control, friend and family support, and coping mechanisms, as demonstrated in the research of (Ho, 1995) and (Maltby et al., 2004). Moreover, according to Maltby et al. (2004) psychosocial elements affected cognitive evaluation and mediated the interactions between life demands and reactions. In contrast, another Nigerian study examined male Primary Education Department early childhood education students. Researchers discovered type A personalities outperformed type B academically (Chinaveh, 2014). Consequently, students who used problem-solving strategies rather than emotions did better academically. Based on these findings, the researcher requested schools to foster learning as well as problem-solving skills among students (Saadu & Adesokan, 2013).

Strengths of the Study

The study employed proportional sampling to ascertain gender prevalence, both institutions. The study examined overall and gender-specific prevalence of personality Type A and Type B. Furthermore, association of personality types were analyzed with academic year. Consequently, this study will help to guide future research in nursing on Type A personality and CAD by exploring Type A's other traits in the development of hypertension, as well anxiety, and coronary artery disease. Moreover, study locations were private nursing schools that provide physical and mental health services to the students. Additionally, this study showed nursing undergraduates anxiety levels, as Year IV students reported lower anxiety. Subsequently, they need less supportive assistance to succeed academically compared to other years of study. Finally, Accepting their personality type and teaching them coping skills can prevent type A personality development and cardiovascular disease.

Limitations of the Study

The long-term effects of the cross-sectional study could not be determined. It was challenging to determine outcome changes during the four-year educational program due to the small sample size, cross-sectional study design, and data from only two institutes. It is important to evaluate students' grade point averages (GPA) and determine the association of personality types (A and B) with academic success. To ensure the provision of confidential support and counselling services to all nursing students, the study may involve public institutions too. However, the comparison of public and private data and the assessment of whether psychological support is required for nursing undergraduates must be done by including public institutions. Furthermore, The study primarily examines BScN undergraduates, but it could also include post-RN BScN and MScN students. A self-reporting BAI anxiety measure may have been biased in the study. Self-perceptions in questionnaire responses could undermine study consistency. The cross-sectional design limits cause-and-effect relationships. Type A personalities may imitate Type B behavior, while the reverse is unlikely.

The BAI scale was used to determine Personality Types A and B, although the ABBP scale and Jenkins Survey may better separate these personalities due to their nuanced traits. Limiting classifications to anxiety types may ignore Type C, D, or T (mix of features of two types of personality) correspondingly. Consideration of background, location, and socioeconomics, could diversify personality exploration, while excluding individuals with familial psychological tendencies or psychiatric medications during data collection could enhance reliability The study's varied data collection settings between online and in-person meetings, with a majority from Karachi, might overlook personality challenges from hostel life or adjustment stress.

Recommendations of the study

Research Recommendation

Nursing students' academic performance and well-being should be studied longitudinally to see how personality types affect them. More intellectual, cultural, and higher education participants should be investigated. Furthermore, qualitative, and mixed method study should be done to identify the anxiety related physical and psychological issues.

Policymakers and educators: Interdisciplinary research with education and psychology professionals should improve understanding of academic achievement's psychological aspects. Policymakers and educators should research university students' personalities and learner differences. They should address the primary concerns and stressors. Cohort studies should last at least ten years to explore the relationship between CAD incidence and Type A nursing students.

Institutional Recommendation:

Personality testing should be required for any employment or admission that values interpersonal skills, notably in healthcare and other service fields. Maintain "College Adjustment Tests (CAT)" frequency. Encourage healthy competition, identify pressures, and teach stress management to help pupils cope. Peer mentorship programs and counseling services must be available to all students, particularly reluctant ones, to ensure the psychological and intellectual health of nursing students. Emotional intelligence (EI) programs in nursing curricula can increase students' emotional well-being, interpersonal skills, and professional development. Facilitate, for seminar and workshops on stress management, communication, and study skills to improve student well-being. Knowing oneself enables university students to avoid anxiety and thrive academically and mentally. Exercise relieves anxiety and helps learners understand themselves. Encourage students to participate in extracurricular activities to alleviate semester stress. To thrive

academically, students should use self-awareness programs and psychological help to understand their personality type and stress management.

Conclusion

The study examined the ratio of Type A to Type B students at two private nursing and midwifery institutions in Karachi, Pakistan. The gender-specific prevalence was also examined by academic year. This study examined anxiety with the Beck Anxiety Inventory. Students with excessive anxiety were Type A, whereas those with minimal anxiety where Type B. Type B personalities outnumber Type A personalities among nursing undergraduates at both schools. Besides socio-demographic data, this study examined personality predictors of anxiety. Impulsivity and the institution are significant in this analysis. The study will help the researcher recommend anxiety-reduction strategies. Discussing the study's benefits and faults may help duplicate it. Further research was suggested by the findings.

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Appendices

Appendix 1 Permission Letter From AKU SONAM

آغا خان یونیورسٹی
THE AGA KHAN UNIVERSITY

Faculty of Health Sciences
School of Nursing & Midwifery

Date: May 22, 2023

To,
Dr. Tazeen Saeed Ali,
Interim Dean,
Professor and Associate Dean,
Aga Khan University School of Nursing and Midwifery,
Karachi, Pakistan

Subject: Permission for Data Collection

Dear Madam,

I am Farhana Shaheen student of Master of Science in Nursing at the Aga Khan University School of Nursing and Midwifery, Karachi Pakistan. I am conducting a research study which is an integral part of my master's program, under the supervision of Dr. S. Naghma Rizvi, Assistant Professor, Aga Khan University School of Nursing and Midwifery, Karachi, and Co-Supervisor Dr. Saleema Gulzar, Associate Professor & Head of Public Health Stream, Aga Khan University School of Nursing and Midwifery, Karachi. The committee members are Ms. Syeda Aleena Fazal, Manager Research, Department of Pediatrics, Aga Khan University Hospital Karachi, and Ms. Syeda Humera Qutb, Instructor, Aga Khan University School of Nursing and Midwifery, Karachi.

The title of the study is "Prevalence of Type A and Type B Personality among Undergraduate Nursing Students at Private School of Nursing, Karachi, Pakistan: A Cross-sectional Analytical Study."

Study Purpose: The purpose of the study is to see the frequency of Type A & Type B personality among nursing students enrolled in 4-years BScN program and the association of personality type with student's academic year at the Aga Khan University School of Nursing and Midwifery, Karachi and Murshid Hospital & Health Care Centre, School of Nursing and Midwifery, Karachi, Pakistan.

Stadium Road, P.O. Box 3500, Karachi 74800, Pakistan
Tel: +92 21 3493 0051 Ext. 5460; Direct: +92 21 3414 6880; Fax: +92 21 3493 4294, 3493 2095 sonam.pk@aku.edu; www.aku.edu

The Procedure of data collection: A quantitative, cross-sectional analytical design will be used for conducting this study. The sample size will be calculated via Open Epi online software. by taking a confidence interval of 95% and a margin of error of 5%. The final sample size will be calculated with a 10% attrition rate. A Quota sampling method will be used in selecting students for study in two private nursing schools. The ordinal logistic regression test will be used to analyze the data. The questionnaire will be generated on Google form & link will be shared with students to collect the data (online).

Risk factor and benefit: This study is only for academic purposes and no potential harm is expected for students, for their participation. Moreover, there will be no monetary compensation in response to the participation of students.

Ethical Consideration: Data collection will start after approval from the Ethical Review Committee of the Aga Khan University School of Nursing and Midwifery, Karachi. The proposed study will consider all possible ethical considerations including anonymity, confidentiality, informed consent, and the institution's permission. Findings of the study will be issued without showing information about the participants to whom data was collected.

The study will be conducted on Undergraduate nursing students. The targeted population will be students who are enrolled in a 4-years BScN program at the Aga Khan University School of Nursing and Midwifery, Karachi, and at Murshid Hospital & Health Care Centre, School of Nursing & Midwifery, Karachi Pakistan. The data will be collected after ERC approval.

I seek your permission and request your approval to contact the participants of Aga Khan University, School of Nursing and Midwifery for data collection. Participation in the study will be on a volunteer basis. Your permission as an entity head will be necessary to process the Ethical Review Committee application and approval. After the ERC (Ethical Review Committee) approval, I will collect the data one time in June 2023.

I request you to please sign the enclosed form. Looking forward to a positive response.

Sincerely,

Farhana Shaheen
MSN Student,
AKU SONAM
farhana.shaheen@scholar.aku.edu

Dr Naghma Rizvi
Assistant Professor,
AKU SONAM
naghma.rizvi@aku.edu

Title of the Research Study

"Prevalence of Type A and Type B Personality among Undergraduate Nursing Students at Private School of Nursing, Karachi, Pakistan: A Cross-sectional Analytical Study"

Primary Investigator:
Farhana Shaheen
MScN Student,
Aga Khan University School of Nursing and Midwifery,
Karachi, Pakistan

Thesis Supervisor:
Dr S. Naghma Rizvi,
Assistant Professor
Aga Khan University School of Nursing and Midwifery,
Karachi, Pakistan

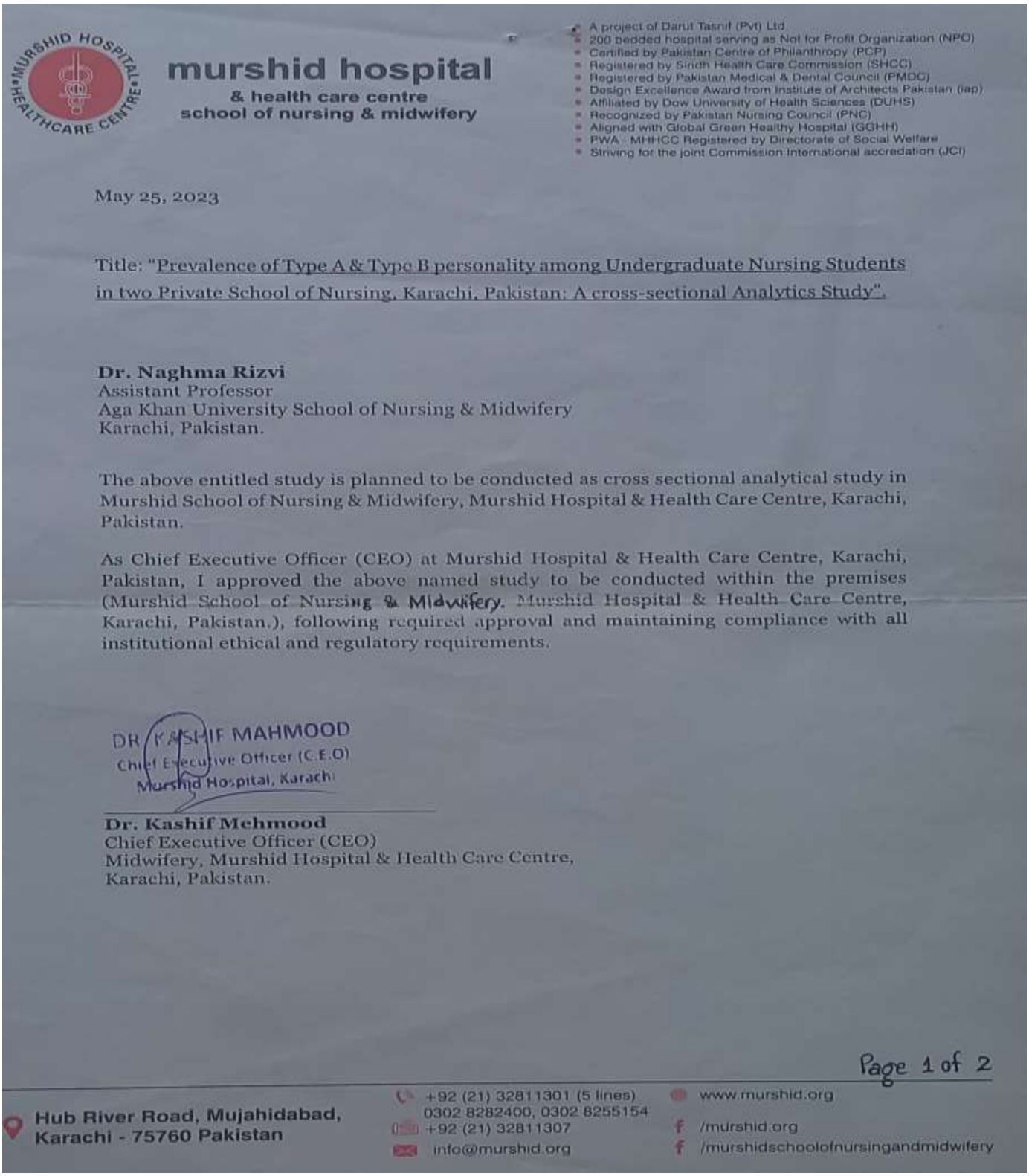
I, Dr. Tazeen Saeed Ali, Interim Dean, Professor and Associate Dean, Research & Innovation, The Aga Khan University School of Nursing and Midwifery, Karachi, Pakistan accept to access participants' data and collect the required information after seeking their informed consent in the above study.

Signature

23, May 2023

Date

Appendix 2 **Permission Letter from MH& HCC SONAM**



murshid hospital
& health care centre
school of nursing & midwifery

- A project of Darut Tasnif (Pvt) Ltd
- 200 bedded hospital serving as Not for Profit Organization (NPO)
- Certified by Pakistan Centre of Philanthropy (PCP)
- Registered by Sindh Health Care Commission (SHCC)
- Registered by Pakistan Medical & Dental Council (PMDC)
- Design Excellence Award from Institute of Architects Pakistan (iap)
- Affiliated by Dow University of Health Sciences (DUHS)
- Recognized by Pakistan Nursing Council (PNC)
- Aligned with Global Green Healthy Hospital (GGHH)
- PWA - MHHCC Registered by Directorate of Social Welfare
- Striving for the joint Commission International accredation (JCI)

May 25, 2023

Title: "Prevalence of Type A & Type B personality among Undergraduate Nursing Students in two Private School of Nursing, Karachi, Pakistan: A cross-sectional Analytics Study".

Dr. Naghma Rizvi
Assistant Professor
Aga Khan University School of Nursing & Midwifery
Karachi, Pakistan.

The above entitled study is planned to be conducted as cross sectional analytical study in Murshid School of Nursing & Midwifery, Murshid Hospital & Health Care Centre, Karachi, Pakistan.

As Chief Executive Officer (CEO) at Murshid Hospital & Health Care Centre, Karachi, Pakistan, I approved the above named study to be conducted within the premises (Murshid School of Nursing & Midwifery, Murshid Hospital & Health Care Centre, Karachi, Pakistan.), following required approval and maintaining compliance with all institutional ethical and regulatory requirements.

DR KASHIF MAHMOOD
Chief Executive Officer (C.E.O)
Murshid Hospital, Karachi

Dr. Kashif Mehmood
Chief Executive Officer (CEO)
Midwifery, Murshid Hospital & Health Care Centre,
Karachi, Pakistan.

Page 1 of 2

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Karachi - 75760 Pakistan

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www.murshid.org
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/murshidschoolofnursingandmidwifery

Title of the Research Study

"Prevalence of Type A & Type B Personality among Undergraduate Nursing Students in Two Private School of Nursing, Karachi, Pakistan: A Cross-sectional Analytical Study"

Primary Investigator:
Farhana Shaheen
MScN Student,
AKUSONAM Pakistan

Thesis Supervisor:
Dr. Naghma Rizvi
Assistant Professor,
AKUSONAM Pakistan

I, Dr Kashif Mahmood, Chief Executive Officer, Murshid Hospital & Health Care Centre, Karachi Pakistan, accept to access participants' data and collect required information after seeking their informed consent in the above study.

DR. KASHIF MAHMOOD
Chief Executive Officer (C.E.O)
Murshid Hospital & Health Centre

Signature

20/05/2023
Date

Page 2 of 2

Appendix 3 Approval Letter from the Ethical Review Committee

آغا خان یونیورسٹی
THE AGA KHAN UNIVERSITY

01-Jun-2023

Dr. Naghma Rizvi
Department of School of Nursing and Midwifery
Aga Khan University
Karachi

Dear Dr. Naghma Rizvi,

2023-8654-25170, Naghma Rizvi: Prevalence of Type A and Type B Personality among Undergraduate Nursing Students at Private School of Nursing Karachi, Pakistan: A Cross-sectional Analytical Study

Thank you for submitting your application for ethical approval regarding the above-mentioned study.

Your study was reviewed and discussed in ERC meeting. There were no major ethical issues. The study was given an approval for a period of one year with effect from 01-Jun-2023. For further extension a request must be submitted along with the annual report.

List of document(s) approved with this submission.

Submission Document Name	Submission Document Date	Submission Document Version
Syeda Naghma Rizvi	07-Apr-2023	1.6
Saleema Gulzar	07-Apr-2023	PDF version: 1.4
Syeda Aleena Fazal	07-Apr-2023	PDF version: 1.4
Syeda Humera	07-Apr-2023	PDF version: 1.6
Farhana Shaheen	07-Apr-2023	PDF version: 1.4
Permission Letter AKUSONAM	24-May-2023	2
Permission Letter Murshid SONAM Version 1	24-May-2023	1
Section B socio-demographic data Version 2	24-May-2023	2
Informed Consent Version 3	24-May-2023	3
Section-C Research Tool version 1	24-May-2023	1
Study Proposal Version 2	24-May-2023	2
Response sheet ERC - 21-5-23 - Copy Draft(1)	24-May-2023	1

Any changes in the protocol or extension in the period of study should be notified to the Committee for prior approval. All informed consents should be retained for future reference.

Please ensure that all the national and institutional requirements are met.

Thank you.

Sincerely,

Dr. Shabina Arif,

Page 1 of 1
Chairperson: Ethics Review Committee

Appendix 4 Section-A Informed Consent

(For Quantitative Study)

Project Information		
Project Title:	Prevalence of Type A & Type B Personality Among Undergraduate Nursing Students at Private School of Nursing Karachi, Pakistan **Version: 03**	
ERC (Ethical Review Committee) Project No:	8654	**Sponsor:** None
Principal Investigator:	Dr. Naghma Rizvi	**Organization:** Aga Khan University Karachi, Pakistan
Location:	SONAM (School of Nursing and Midwifery)	**Phone:** 021-34865257
Other Investigators:	Farhana Shaheen	**Organization:** Aga Khan University Karachi, Pakistan
Location	SONAM (School of Nursing and Midwifery)	**Phone:** 03327633981

I am Farhana Shaheen MScN student at Aga Khan University School of Nursing and Midwifery, Karachi, Pakistan. You are being asked to take part in the research study designed to assess the Prevalence of Type A & Type B Personality among Undergraduate Nursing students at private School of Nursing Karachi, Pakistan." You will be provided with all the required information about the study and your participation in this study. Moreover, before making the decision, you can ask for anything for clarification that makes you feel uncomfortable with this study. In addition, participants have the right to withdraw from the study at any time, and not taking part in this study

will not affect you at any cost. A copy of the consent form will be provided to each participant. I want to ask you questions which will take about 30 minutes.

PURPOSE OF THIS RESEARCH STUDY

The purpose of this study is to see the frequency of Type A and Type B personalities among nursing students enrolled in 4-year BScN undergraduate nursing program and its association with their academic year at two private School of Nursing and Midwifery Karachi, Pakistan. It will supply scientific evidence to assess the Types of personality and their association with the student's academic years.

PROCEDURES

A questionnaire form will be distributed to you. The first part of the tool will be the consent form followed by the questionnaire. Once you receive the consent form, read it carefully, and if you agree to take part, sign, and fill it out. The questionnaire form consists of 18 items of demographic data and 21 items of BECK Anxiety Inventory (BAI) questions, scale is arranged on a 4-point Likert Scale.

POSSIBLE RISKS OR DISCOMFORT

There are no potential risks involved in this study. You do not have to answer any question that might make you uncomfortable.

POSSIBLE BENEFITS

The study is conducted for academic purposes only. There are no direct benefits to the participants, but you will contribute to society by sharing your experiences. That will help us to assess the personality types and their association with the academic year in the nursing profession. Your participation will be highly appreciated and significant to the study.

FINANCIAL CONSIDERATIONS

There is no financial compensation for participation in this study.

CONFIDENTIALITY

The information will remain confidential & nobody except the principal investigator will have access to it, numerical code will be used for questionnaire identification. After the data collection hard copies (if any) will be kept in the locker & online records will be secured by password protection for 07 years. Only the principal investigator and team members will have access to the record. Data may be reviewed by the Ethical Review Committee and may be published in any journal without showing your identity.

RIGHT TO REFUSE OR WITHDRAW

You are free to choose whether to take part in this study. There will be no penalty or loss of benefits to which you are otherwise entitled if you choose not to take part.

DISSEMINATION OF THE RESULTS

The result bought by this study will be shared with the program implementers and policymakers in nursing education, before making it reachable to the common people through mediums such as publications, conferences, etc.

AVAILABLE SOURCES OF INFORMATION

In case of any queries and questions, you may contact the following,

Farhana Shaheen at AKU-SONAM, Karachi, Pakistan. (03327633981)

OR

Dr. Naghma Rizvi, AKU –SONAM Karachi, Pakistan. (021-34865257)

Thank you for your cooperation.

AUTHORIZATION

I have read and understood this consent form, and I volunteer to take part in this research study. I voluntarily choose to take part, but I understand that my consent does not take away any legal rights in the case of negligence or another legal fault of anyone who is involved in this study.

I agree to participate in this study:

Yes **No**

Name of participant:
Date: _____

Signature of participant:
Date: _____

Signature of Principal Investigator:
Date: _____

Name and Signature of a person obtaining consent:

Date: _____

Appendix 5 Section-B Socio-demographic Data

Section B: Socio-demographic Data Sheet (Separate Sheet)

This is a separate socio-demographic data sheet, and it has personal identifiable information. The researcher will not publish or share this information to maintain the anonymity of the study participants.

Name (Optional) _____ **Contact no (Optional):** _____

1. Gender:

Male ☐ Female ☐

2. Age in years:

18-25 ☐ 26-30 ☐

31-35 ☐ 36 &above ☐

3. Marital status:

Single ☐ Married ☐

Divorced ☐ Separate ☐

4. Year of Study

Year-1 ☐ Year-2 ☐

Year-3 ☐ Year-4 ☐

5. Where do you belong to?

Karachi ☐ Outside Karachi ☐ Outside Pakistan ☐

6. Family structure where you brought up?

Nuclear ☐ Joint ☐

Single Parent ☐ Stepfamilies ☐

7. **Whom do you live with now?**

Family (Parents, siblings, husband, children) ☐ Hostel ☐

Family members (Uncle, Aunties, cousins) ☐ Live alone ☐

8. **Have you ever seen a person struggling with anxiety in your family member?**

Yes ☐ No ☐

9. **If yes, as much as its hampering their function of life, which domain of their life have been affected?**

Personal ☐ Professional ☐ Academic ☐ All ☐

10. **Mention that family member?**

Parents ☐ Sibling ☐ Any other ☐

11. **If yes, did they take any professional help?**

Yes ☐ No ☐

12. **In anxiety provoking situations what is your preferred way of handling it?**

Talk to a friend ☐ Take a professional help ☐

Drug consumption/ Smoking ☐ Exercise ☐

Others ☐

13. **How do you cope with situation?**

Emotion Focused (Regulating emotional responses to the problem) ☐

Problem Focused (Managing the problem causing distress) ☐

14. If you face any problem, do you evaluate the situation first before reaching any conclusion?

Yes ☐ No ☐

15. Did you notice that you always react impulsively?

Yes ☐ No ☐

16. If "yes", this attitude is for

All domain of life ☐ Specific ways of life ☐

17. For academic achievement & success are you the student to whom academic period remains competitive & causes stress?

Has it always been like that? ☐

Has it sometimes been like that? ☐

18. In your social circle you are tolerant of others?

Yes ☐ No ☐

Appendix 6 Section-C Research Tool/Questionnaire

Section-C Research Tool/Questionnaire **Beck Anxiety Inventory (BAI)**

Below is a list of common symptoms of anxiety. Please carefully read each item in the list. Indicate how much you have been bothered by that symptom during the past month, including today, by circling the number in the corresponding space in the column next to each symptom.

All questions (21)	Not at all	Mildly, but it did not bother me much	Moderately – it was not pleasant at times	Severely – it bothered me a lot
1. Numbness or tingling	0	1	2	3
2. Feeling hot	0	1	2	3
3. Wobbliness in legs	0	1	2	3
4. Unable to relax	0	1	2	3
5. Fear of worst happening	0	1	2	3
6. Dizzy or lightheaded	0	1	2	3
7. Heart pounding / racing	0	1	2	3
8. Unsteady	0	1	2	3
9. Terrified or afraid	0	1	2	3
10. Nervous	0	1	2	3
11. Feeling of choking	0	1	2	3
12. Hands trembling	0	1	2	3
13. Shaky / unsteady	0	1	2	3
14. Fear of losing control	0	1	2	3
15. Difficulty in breathing	0	1	2	3
16. Fear of dying	0	1	2	3
17. Scared	0	1	2	3
18. Indigestion	0	1	2	3
19. Faint / lightheaded	0	1	2	3
20. Face flushed	0	1	2	3
21. Hot / cold sweats	0	1	2	3

Page 1 of 1

Appendix 7 Email: Permission to Approach AKU SONAM Students on Zoom Meeting

RE: Request For Approaching students for Data Collection

From: Farhana Shaheen <farhana.shaheen@scholar.aku.edu>
Sent: Monday, 5 June 2023 1:54 pm
To: Khairulnissa Ajani <khairulnissa.ajani@aku.edu>
Cc: Saleema Gulzar <saleema.gulzar@aku.edu>; Naghma Rizvi <naghma.rizvi@aku.edu>; Wahab Ali <wahab.ali@aku.edu>; Sabina Habib Amin <sabina.amin@aku.edu>; Zohra Jetha <zohra.jetha@aku.edu>; Ambreen Merchant <ambreen.merchant@aku.edu>; Khairunnisa Mansoor <khairunnisa.mansoor@aku.edu>; Zulekha Saleem <zulekha.saleem@aku.edu>; Graduate Programme SONAM <GradProg.SoNAM@aku.edu>
Subject: Request For Approaching students for Data Collection

Dear Dr Khairulnisa Ajani,
I hope this email finds you well. This is Farhana Saheen, an MScN year II student. For my thesis, I want to collect data from students in the undergraduate 4-year program. My study title is "Prevalence of Type A & Type B Personality Among Undergraduate Nursing Students in Two Private Schools of Nursing, Karachi, Pakistan: A Cross-sectional Analytical Study".
My study's eligibility criteria are:
Inclusion Criteria • Student in baccalaureate Nursing program studying in 1st,2nd,3rd, and 4th year • Age ranges from 18 to 35 years • A student who has no physical disability
Exclusion criteria: • Student of Post RN BScN in years 1 & 2 • A student who has any physical disability • A student who refused to participate.
The sample size is required 17 students (09boys & 08girls) from each class (Years I-IV) willing to participate in the study. The total time is required 30 minutes for data collection with introducing the study & sharing the Google link with the students to fill out the questionnaire. One population is undergraduate students (in Years 1 to 4th) at AKUSONAM and the other is Murshid School of Nursing & Midwifery, Karachi. My study proposal, a permission letter from Dean, and an ERC approval form are attached herewith. It is requested to please allow me to approach the students for data collection tomorrow at 10 am, with the allocation of time and venue at AKUSONAM. I shall be waiting for your positive feedback.

Thanks, and Regards
Farhana Shaheen
MScN 2nd Year student
579629

RE: Request For Approaching students for Data Collection

SA Sabina Habib Amin <sabina.amin@aku.edu>
To: Farhana Shaheen
Mon 2023-06-05 17:05
Cc: Saleema Gulzar; Naghma Rizvi <naghma.rizvi@aku.edu>; Wahab Ali <wahab.ali@aku.edu>; zohra.jetha@aku.edu; Ambreen Merchant <ambreen.merchant@aku.edu>; Khairunnisa Mansoor <khairunnisa.mansoor@aku.edu>; Zulekha Saleem; Graduate Programme SONAM <GradProg.SoNAM@aku.edu>

Dear Farhana,

As per our telephonic conversation, we are sharing the Zoom link with you and the students.

With Best Regards,

THE AGA KHAN UNIVERSITY

Sabina Amin
Assistant BScN Programme III & IV
Teaching, Learning, and Undergraduate office at SONAM
Ext: 5416

The Aga Khan University
Stadium Road, P.O. Box 3500, Karachi 74800, Pakistan
www.aku.edu | Social Media Hub

Appendix 8 **Approaching Permission to BScN Year-I on Zoom Meeting**

Request For Approaching students for Data Collection

Wahab Ali <wahab.ali@aku.edu>

To: Abdul Razaq <abdul.razaq2@aku.edu>; Adila Kawsar <adila.kawsar@aku.edu>; Adnan Shahid <adnan.shahid@aku.edu>; Adnan Wazir <adnan.wazir@aku.edu>; +152 others

Cc: zohra.jetha@aku.edu; Farhana Shaheen; Naghma Rizvi <naghma.rizvi@aku.edu>

Dear students,

With reference to below, kindly join the Zoom link on Tuesday, June 6, 2023 at 1000 – 1045 hours

Join Zoom Meeting
https://aku-edu.zoom.us/j/98096466194

Meeting ID: 980 9646 6194
Passcode: 050017

Looking forward to your usual cooperation.

Thank you

THE AGA KHAN UNIVERSITY

Wahab Sikander Ali

The Aga Khan University
Stadium Road, P.O. Box 3500, Karachi 74800, Pakistan

From: Farhana Shaheen <farhana.shaheen@scholar.aku.edu>
Sent: Monday, 5 June 2023 1:54 pm
To: Khairunissa Ajani <khairunissa.ajani@aku.edu>
Cc: Saleema Gulzar <saleema.gulzar@aku.edu>; Naghma Rizvi <naghma.rizvi@aku.edu>; Wahab Ali <wahab.ali@aku.edu>; Sabina Habib Amin <sabina.amin@aku.edu>; Zohra Jetha <zohra.jetha@aku.edu>; Ambreen Merchant <ambreen.merchant@aku.edu>; Khairunnisa Mansoor <khairunnisa.mansoor@aku.edu>; Zulekha Saleem <zulekha.saleem@aku.edu>; Graduate Programme SONAM <GradProg.SoNAM@aku.edu>
Subject: Request For Approaching students for Data Collection

Request For Approaching students for Data Collection

Wahab Ali <wahab.ali@aku.edu>

To: Abdul Razaq <abdul.razaq2@aku.edu>; Adila Kawsar <adila.kawsar@aku.edu>; Adnan Shahid <adnan.shahid@aku.edu>; Adnan Wazir <adnan.wazir@aku.edu>; Affa Ali <affa.ali@aku.edu>;
Afrah Allauddin <afrah.allauddin@aku.edu>; Aiman Amir <aiman.amir@aku.edu>; Aisha Syed <aisha.syed@aku.edu>; Aiyma Iqbal <aiyma.iqbal@aku.edu>; Alamgir Muhammad <alamgir.muhammad@aku.edu>;
Aleena Jamal <aleena.jamal@aku.edu>; Ali Kamish <ali.kamish@aku.edu>; Ali Mohammad <ali.mohammad@aku.edu>; Aliha Saleem <aliha.saleem@aku.edu>; Alina Baig <alina.baig@aku.edu>; Alina Moiz <alina.moiz@aku.edu>;
Alina Ali <alina.ali@aku.edu>; Alina Saleem <alina.saleem@aku.edu>; Alishba Nasir <alishba.nasir@aku.edu>; Alishba Ameer <alishba.ameer@aku.edu>; Aliza Khowaja <aliza.khowaja@aku.edu>; Alka Rani <alka.rani2@aku.edu>;
Amar Islam <amar.islam@aku.edu>; Anika Jabin <anika.jabin@aku.edu>; Anilah Haider <anilah.haider@aku.edu>; Anjeela Meshal <anjeela.meshal@aku.edu>; Anjiya Salman <anjiya.salman@aku.edu>;
Anmol Ahmed <anmol.ahmed@aku.edu>; Anusha Kamran <anusha.kamran@aku.edu>; Aqila Karim <aqila.karim@aku.edu>; Ariba Muhammad <ariba.muhammad@aku.edu>; Arifa Parveen <arifa.parveen@aku.edu>;
Arsalan Bahader <arsalan.bahader@aku.edu>; Arshi Jumma <arshi.jumma@aku.edu>; Asbah Jalaluddin <asbah.jalaluddin@aku.edu>; Asif Ali <asif.ali7@aku.edu>; Asif Ali <asif.ali6@aku.edu>;
Asima Begum <asima.begum@aku.edu>; Attia Bibi <attia.bibi@aku.edu>; Azaharuddin Mohiudin <azaharuddin.mohiudin@aku.edu>; Bibi Asma <bibi.asma2@aku.edu>; Bilqees Khanum <bilqees.khanum@aku.edu>;
Dil Nasheen <dil.nasheen@aku.edu>; Dua Muhammad <dua.muhammad@aku.edu>; Eman Bibi <eman.bibi@aku.edu>; Farhana Noor <farhana.noor@aku.edu>; Faria Waqar <faria.waqar@aku.edu>;
Fariyaz Kanwal <fariyaz.kanwal@aku.edu>; Fatehuddin Shams <fatehuddin.shams@aku.edu>; Fatima Khan <fatima.khan3@aku.edu>; Fiza Shehzadi <fiza.shehzadi@aku.edu>; Gulfam Syed <gulfam.syed@aku.edu>;
Huma Adil <huma.adil@aku.edu>; Huma Mir <huma.mir2@aku.edu>; Humaira Rahim <humaira.rahim@aku.edu>; Imran Nazir <imran.nazir2@aku.edu>; Innarah Sher <innarah.sher@aku.edu>; Iram Ara <iram.ara@aku.edu>;
Jamsheed Khan <jamsheed.khan@aku.edu>; Javeria Akber <javeria.akber@aku.edu>; Jehangir Khan <jehangir.khan2@aku.edu>; Kainaat Abdul <kainaat.abdul@aku.edu>; Kalsoom Ghazi <kalsoom.ghazi@aku.edu>;
Kashish Punjwani <kashish.punjwani@aku.edu>; Kashish Sunil <kashish.sunil@aku.edu>; Kiran Muhammad <kiran.muhammad@aku.edu>; Kulsoom Nizar <kulsoom.nizar2@aku.edu>; Lahin Ali <lahin.ali@aku.edu>; Lamis Hadid;
Mahnoor Alam <mahnoor.alam2@aku.edu>; Malaika Mirza <malaika.mirza@aku.edu>; Mansha Pari <mansha.pari@aku.edu>; Mantasha Muhammad <mantasha.muhammad@aku.edu>; Mehnoz Ahmed <mehnoz.ahmed@aku.edu>;
Mehtab Ali <mehtab.ali@aku.edu>; Mehtab Hussain <mehtab.hussain@aku.edu>; Menhosh Nadir <menhosh.nadir@aku.edu>; Misbah Ali <misbah.ali2@aku.edu>; Mudasira Wazir <mudasira.wazir@aku.edu>;
Muhammad Afnan <muhammad.afnan@aku.edu>; Muhammad Atique <muhammad.atique3@aku.edu>; Mukhsina Bibi <mukhsina.bibi@aku.edu>; Munira Bibi <munira.bibi@aku.edu>; Mushaf Rana <mushaf.rana@aku.edu>;
Mushahid Hussain <mushahid.hussain2@aku.edu>; Muskan Raheem <muskan.raheem@aku.edu>; Muskan Mehmood <muskan.mehmood@aku.edu>; Mustansir Ali <mustansir.ali2@aku.edu>;
Nabila Mohammad <nabila.mohammad@aku.edu>; Nadia Atta <nadia.atta@aku.edu>; Nadia Youmast <nadia.youmast@aku.edu>; Naeem Akram <naeem.akram@aku.edu>; Naeema Ali <naeema.ali@aku.edu>;
Naina Hira <naina.hira@aku.edu>; Nasreen Sher <nasreen.sher@aku.edu>; Nasreen Niazi <nasreen.niazi@aku.edu>; Nazia Hassan <nazia.hassan2@aku.edu>; Nazia Sulaiman <nazia.sulaiman@aku.edu>;
Nazia Sharafat <nazia.sharafat@aku.edu>; Nazish Rani <nazish.rani@aku.edu>; Neha Noorallah <neha.noorallah@aku.edu>; Nighat Sifat <nighat.sifat@aku.edu>; Qudsia Batool <qudsia.batool@aku.edu>;
Raahina Rahim <raahina.rahim@aku.edu>; Rafiqa Smell <rafiqa.smell@aku.edu>; Raheel Ahmad <raheel.ahmad2@aku.edu>; Raheela Nasir <raheela.nasir@aku.edu>; Raihana Murad <raihana.murad@aku.edu>;
Razia Shamsher <razia.shamsher@aku.edu>; Reena Yousuf <reena.yousuf@aku.edu>; Rozina Darwesh <rozina.darwesh@aku.edu>; Saba Rehmat <saba.rehmat@aku.edu>; Sadia Kosar <sadia.kosar@aku.edu>;
Sadia Jan <sadia.jan@aku.edu>; Sadiqa Karim <sadiqa.karim@aku.edu>; Sahiba Abdul <sahiba.abdul@aku.edu>; Sahira Tahir <sahira.tahir@aku.edu>; Sajal Batada <sajal.batada@aku.edu>; Sajila Bano <sajila.bano3@aku.edu>;
Saliha Najab <saliha.najab@aku.edu>; Sana Iqbal <sana.iqbal3@aku.edu>; Sania Karim <sania.karim@aku.edu>; Sania Mohd <sania.mohd@aku.edu>; Saqlain Abbas <saqlain.abbas@aku.edu>; Sara Lalani <sara.lalani@aku.edu>;
Sara Irfan <sara.irfan@aku.edu>; Sarosh Zulfiqar <sarosh.zulfiqar@aku.edu>; Sehrish Bulbul <sehrish.bulbul@aku.edu>; Sereena Nazir <sereena.nazir@aku.edu>; Shafia Syed <shafia.syed@aku.edu>;
Shagufta Arzoo <shagufta.arzoo@aku.edu>; Shahzad Ali <shahzad.ali2@aku.edu>; Shahzia Afshan <shahzia.afshan@aku.edu>; Simran Amin <simran.amin@aku.edu>; Sitara Raza <sitara.raza@aku.edu>;
Soha Khan <soha.khan2@aku.edu>; Sohrab Karim <sohrab.karim@aku.edu>; Soman Fida <soman.fida@aku.edu>; Sudeer Saleem <sudeer.saleem@aku.edu>; Suraya Ghazal <suraya.ghazal@aku.edu>;
Taimoor Ali <taimoor.ali@aku.edu>; Tanzila Panda <tanzila.panda@aku.edu>; Tehmina Gul <tehmina.gul@aku.edu>; Tehmina Qamar <tehmina.qamar@aku.edu>; Tufail Ahmad <tufail.ahmad2@aku.edu>;
Uzma Behram <uzma.behram@aku.edu>; Uzma Sharif <uzma.sharif@aku.edu>; Zahra Aziz <zahra.aziz2@aku.edu>; Zahra Abuali <zahra.abuali@aku.edu>; Zoya Akber <zoya.akber2@aku.edu>; Bushra Nazir; Muqadas Imran;
Alina Wazir; Hiba Rehmat; Inshah Ameer; Rukhsar Veljee

Cc: zohra.jetha@aku.edu; Farhana Shaheen; Naghma Rizvi <naghma.rizvi@aku.edu>

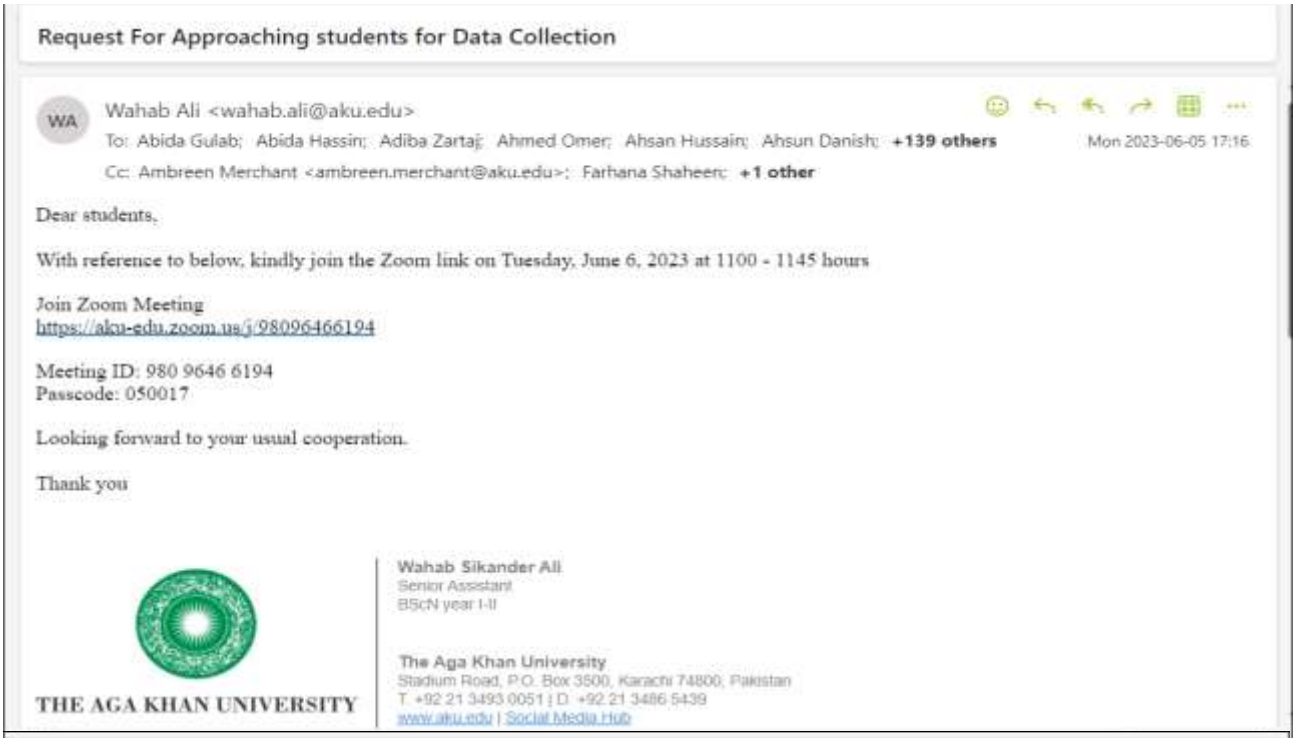
Dear students,

With reference to below, kindly join the Zoom link on Tuesday, June 6, 2023 at 1000 – 1045 hours

Join Zoom Meeting
https://aku-edu.zoom.us/j/98096466194

Meeting ID: 980 9646 6194
Passcode: 050017

Appendix 9 Approaching Permission to BScN Year-II on Zoom Meeting



Request For Approaching students for Data Collection

WA Wahab Ali <wahab.ali@aku.edu>

To: Abida Gulab; Abida Hassin; Adiba Zartaj; Ahmed Omer; Ahsan Hussain; Ahsun Danish; **+139 others**

Cc: Ambreen Merchant <ambreen.merchant@aku.edu>; Farhana Shaheen; **+1 other**

Mon 2023-06-05 17:16

Dear students,

With reference to below, kindly join the Zoom link on Tuesday, June 6, 2023 at 1100 - 1145 hours

Join Zoom Meeting
https://aku-edu.zoom.us/j/98096466194

Meeting ID: 980 9646 6194
Passcode: 050017

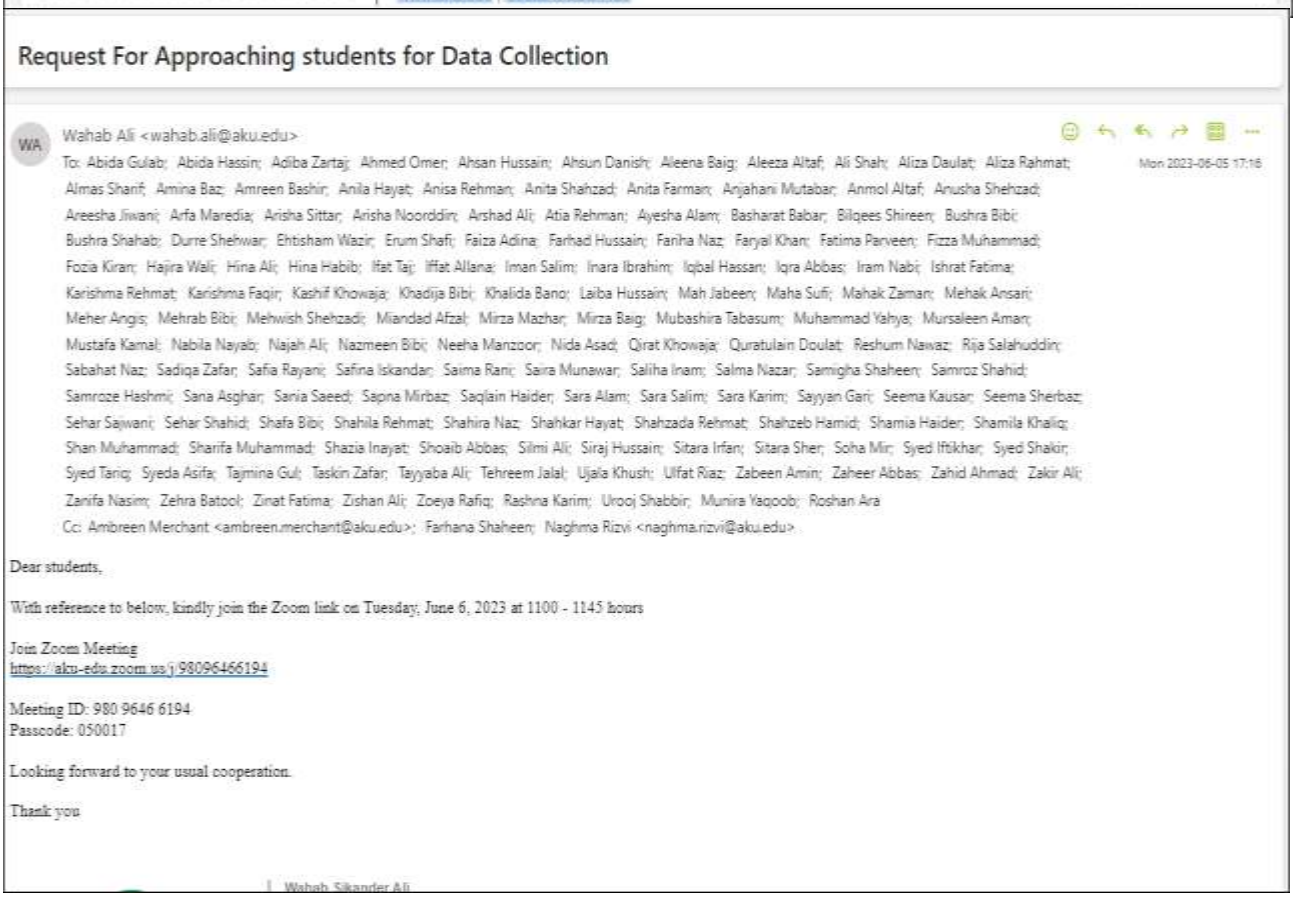
Looking forward to your usual cooperation.

Thank you

THE AGA KHAN UNIVERSITY

Wahab Sikander Ali
Senior Assistant
BScN year I-II

The Aga Khan University
Stadium Road, P.O. Box 3500, Karachi 74800, Pakistan
T +92 21 3493 0051 | D +92 21 3486 5439
www.aku.edu | Social Media Hub



Request For Approaching students for Data Collection

WA Wahab Ali <wahab.ali@aku.edu>

To: Abida Gulab; Abida Hassin; Adiba Zartaj; Ahmed Omer; Ahsan Hussain; Ahsun Danish; Aleena Baig; Aleeza Altaf; Ali Shah; Aliza Daulat; Aliza Rahmat; Almas Sharif; Amina Baz; Amreen Bashir; Anila Hayat; Anisa Rehman; Anita Shahzad; Anita Farman; Anjahani Mutabar; Anmol Altaf; Anusha Shehzad; Areesha Jiwani; Arfa Maredia; Arisha Sittar; Arisha Noorddin; Arshad Ali; Atia Rehman; Ayesha Alam; Basharat Babar; Bilqees Shireen; Bushra Bibi; Bushra Shahab; Durre Shehwar; Ehtisham Wazir; Erum Shafi; Faiza Adina; Farhad Hussain; Fariha Naz; Faryal Khan; Fatima Parveen; Fizza Muhammad; Fozia Kiran; Hajira Wali; Hina Ali; Hina Habib; Ifat Taj; Iffat Allana; Iman Salim; Inara Ibrahim; Iqbal Hassan; Iqra Abbas; Iram Nabi; Ishrat Fatima; Karishma Rehmat; Karishma Faqir; Kashif Khowaja; Khadija Bibi; Khalida Bano; Laiba Hussain; Mah Jabeen; Maha Sufi; Mahak Zaman; Mehak Ansari; Meher Angis; Mehrab Bibi; Mehwish Shehzadi; Miandad Afzal; Mirza Mazhar; Mirza Baig; Mubashira Tabasum; Muhammad Yahya; Mursaleen Aman; Mustafa Kamal; Nabila Nayab; Najah Ali; Nazmeen Bibi; Neeha Manzoor; Nida Asad; Qirat Khowaja; Quratulain Doulat; Reshum Nawaz; Rija Salahuddin; Sabahat Naz; Sadiqa Zafar; Safia Rayani; Safina Iskandar; Saima Rani; Saira Munawar; Saliha Inam; Salma Nazar; Samigha Shaheen; Samroz Shahid; Samroze Hashmi; Sana Asghar; Sania Saeed; Sapna Mirbaz; Saqlain Haider; Sara Alam; Sara Salim; Sara Karim; Sayyan Gari; Seema Kausar; Seema Sherbaz; Sehar Sajwani; Sehar Shahid; Shafa Bibi; Shahila Rehmat; Shahira Naz; Shahkar Hayat; Shahzada Rehmat; Shahzeb Hamid; Shamia Haider; Shamila Khaliq; Shan Muhammad; Sharifa Muhammad; Shazia Inayat; Shoaib Abbas; Silmi Ali; Siraj Hussain; Sitara Irfan; Sitara Sher; Soha Mir; Syed Iftikhar; Syed Shakir; Syed Tariq; Syeda Asifa; Tajmina Gul; Taskin Zafar; Tayyaba Ali; Tehreem Jalal; Ujala Khush; Ulfat Riaz; Zabeen Amin; Zaheer Abbas; Zahid Ahmad; Zakir Ali; Zanifa Nasim; Zehra Batool; Zinat Fatima; Zishan Ali; Zoeya Rafiq; Rashna Karim; Urooj Shabbir; Munira Yaqoob; Roshan Ara

Cc: Ambreen Merchant <ambreen.merchant@aku.edu>; Farhana Shaheen; Naghma Rizvi <naghma.rizvi@aku.edu>

Mon 2023-06-05 17:16

Dear students,

With reference to below, kindly join the Zoom link on Tuesday, June 6, 2023 at 1100 - 1145 hours

Join Zoom Meeting
https://aku-edu.zoom.us/j/98096466194

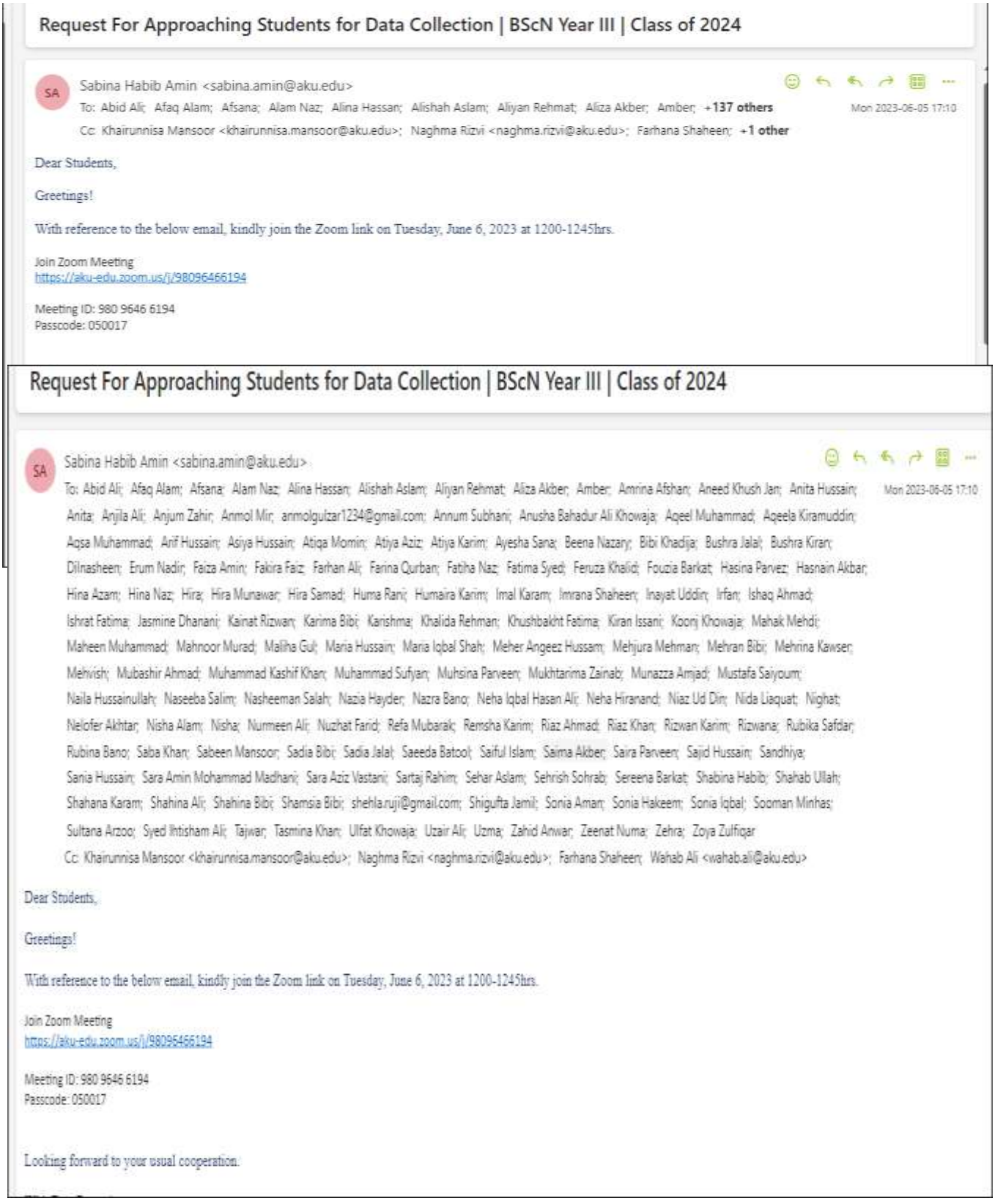
Meeting ID: 980 9646 6194
Passcode: 050017

Looking forward to your usual cooperation.

Thank you

Wahab Sikander Ali

Appendix 10 Approaching Permission to BScN Year-III on Zoom Meeting



Request For Approaching Students for Data Collection | BScN Year III | Class of 2024

SA Sabina Habib Amin <sabina.amin@aku.edu>

To: Abid Ali; Afaq Alam; Afsana; Alam Naz; Alina Hassan; Alishah Aslam; Aliyan Rehmat; Aliza Akber; Amber; **+137 others** Mon 2023-06-05 17:10

Cc: Khairunnisa Mansoor <khairunnisa.mansoor@aku.edu>; Naghma Rizvi <naghma.rizvi@aku.edu>; Farhana Shaheen; **+1 other**

Dear Students,

Greetings!

With reference to the below email, kindly join the Zoom link on Tuesday, June 6, 2023 at 1200-1245hrs.

Join Zoom Meeting
https://aku-edu.zoom.us/j/98096466194

Meeting ID: 980 9646 6194
Passcode: 050017

Request For Approaching Students for Data Collection | BScN Year III | Class of 2024

SA Sabina Habib Amin <sabina.amin@aku.edu>

To: Abid Ali; Afaq Alam; Afsana; Alam Naz; Alina Hassan; Alishah Aslam; Aliyan Rehmat; Aliza Akber; Amber; Amrina Afshan; Aneed Khush Jan; Anita Hussain; Anita; Anjila Ali; Anjum Zahir; Anmol Mir; anmolgulzar1234@gmail.com; Annum Subhani; Anusha Bahadur Ali Khowaja; Aqeel Muhammad; Aqeela Kiramuddin; Aqsa Muhammad; Arif Hussain; Asiya Hussain; Atiqa Momin; Atiya Aziz; Atiya Karim; Ayesha Sana; Beena Nazary; Bibi Khadija; Bushra Jalal; Bushra Kiran; Dilnasheen; Erum Nadir; Faiza Amin; Fakira Faiz; Farhan Ali; Farina Qurban; Fatiha Naz; Fatima Syed; Feruza Khalid; Fouzia Barkat; Hasina Parvez; Hasnain Akbar; Hina Azam; Hina Naz; Hira; Hira Munawar; Hira Samad; Huma Rani; Humaira Karim; Imal Karam; Imrana Shaheen; Inayat Uddin; Irfan; Ishaq Ahmad; Ishrat Fatima; Jasmine Dhanani; Kainat Rizwan; Karima Bibi; Karishma; Khalida Rehman; Khushbakht Fatima; Kiran Issani; Koonj Khowaja; Mahak Mehdi; Maheen Muhammad; Mahnoor Murad; Maliha Gul; Maria Hussain; Maria Iqbal Shah; Meher Angeez Hussam; Mehjura Mehman; Mehran Bibi; Mehrina Kawser; Mehvish; Mubashir Ahmad; Muhammad Kashif Khan; Muhammad Sufyan; Muhsina Parveen; Mukhtarima Zainab; Munazza Amjad; Mustafa Saiyoum; Naila Hussainullah; Naseeba Salim; Nasheeman Salah; Nazia Hayder; Nazra Bano; Neha Iqbal Hasan Ali; Neha Hiranand; Niaz Ud Din; Nida Liaquat; Nighat; Nelofer Akhtar; Nisha Alam; Nisha; Nurmeen Ali; Nuzhat Farid; Refa Mubarak; Remsha Karim; Riaz Ahmad; Riaz Khan; Rizwan Karim; Rizwana; Rubika Safdar; Rubina Bano; Saba Khan; Sabeen Mansoor; Sadia Bibi; Sadia Jalal; Saeeda Batool; Saiful Islam; Saima Akber; Saira Parveen; Sajid Hussain; Sandhiya; Sania Hussain; Sara Amin Mohammad Madhani; Sara Aziz Vastani; Sartaj Rahim; Sehar Aslam; Sehrish Sohrab; Sereena Barkat; Shabina Habib; Shahab Ullah; Shahana Karam; Shahina Ali; Shahina Bibi; Shamsia Bibi; shehla.ruji@gmail.com; Shigufta Jamil; Sonia Aman; Sonia Hakeem; Sonia Iqbal; Sooman Minhas; Sultana Arzoo; Syed Ihtisham Ali; Tajwar; Tasmina Khan; Ulfat Khowaja; Uzair Ali; Uzma; Zahid Anwar; Zeenat Numa; Zehra; Zoya Zulfiqar

Mon 2023-06-05 17:10

Cc: Khairunnisa Mansoor <khairunnisa.mansoor@aku.edu>; Naghma Rizvi <naghma.rizvi@aku.edu>; Farhana Shaheen; Wahab Ali <wahab.ali@aku.edu>

Dear Students,

Greetings!

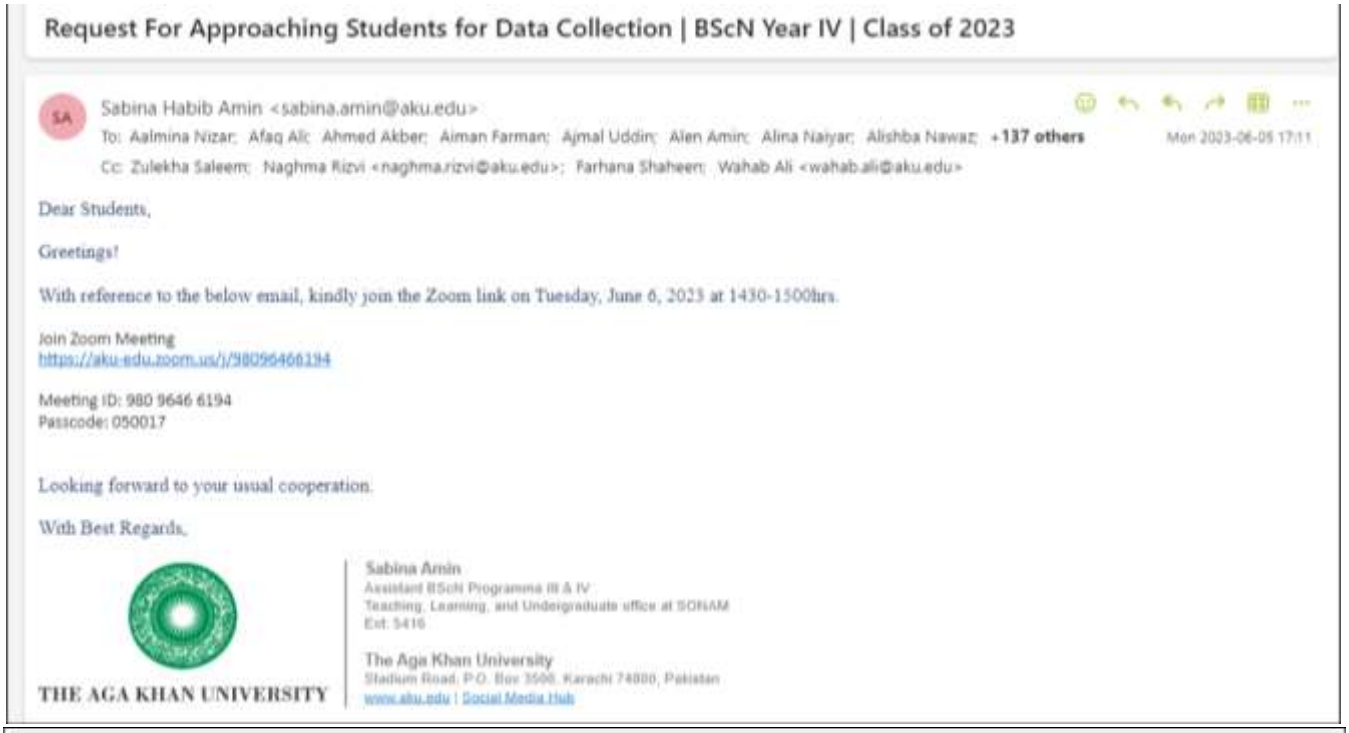
With reference to the below email, kindly join the Zoom link on Tuesday, June 6, 2023 at 1200-1245hrs.

Join Zoom Meeting
https://aku-edu.zoom.us/j/98096466194

Meeting ID: 980 9646 6194
Passcode: 050017

Looking forward to your usual cooperation.

Appendix 11 Approaching Permission to BScN Year-III on Zoom Meeting



Request For Approaching Students for Data Collection | BScN Year IV | Class of 2023

Sabina Habib Amin <sabina.amin@aku.edu>
To: Aalmina Nizar; Afaq Ali; Ahmed Akber; Aiman Farman; Ajmal Uddin; Alen Amin; Alina Naiyar; Alishba Nawaz; **+137 others**
Cc: Zulekha Saleem; Naghma Rizvi <naghma.rizvi@aku.edu>; Farhana Shaheen; Wahab Ali <wahab.ali@aku.edu>
Mon 2023-06-05 17:11

Dear Students,

Greetings!

With reference to the below email, kindly join the Zoom link on Tuesday, June 6, 2023 at 1430-1500hrs.

Join Zoom Meeting
https://aku-edu.zoom.us/j/98096466194

Meeting ID: 980 9646 6194
Passcode: 050017

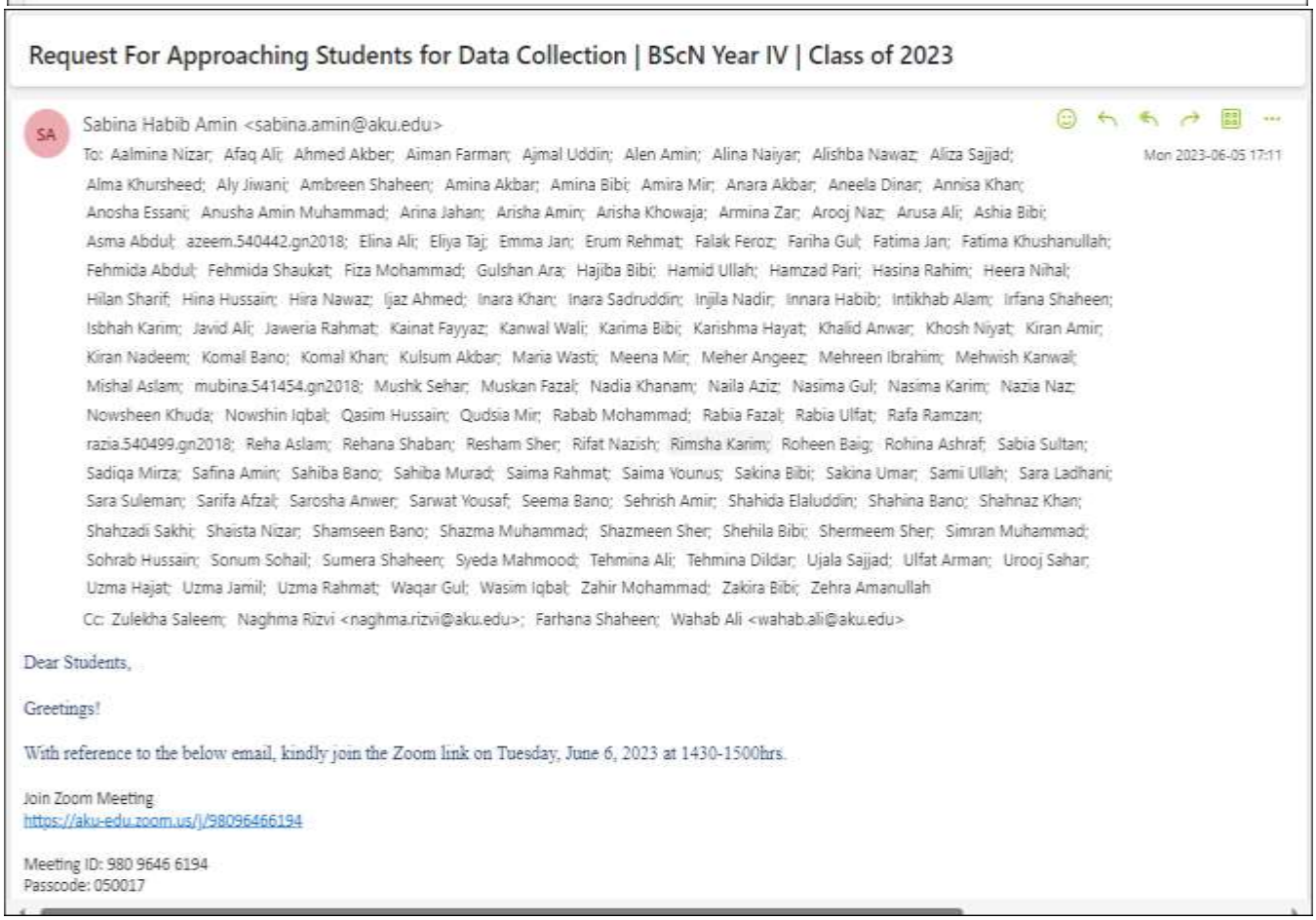
Looking forward to your usual cooperation.

With Best Regards,

THE AGA KHAN UNIVERSITY

Sabina Amin
Assistant BScN Programme III & IV
Teaching, Learning, and Undergraduate office at SONAM
Ext: 5416

The Aga Khan University
Stadium Road, P.O. Box 3500, Karachi 74800, Pakistan
www.aku.edu | Social Media Hub



Request For Approaching Students for Data Collection | BScN Year IV | Class of 2023

Sabina Habib Amin <sabina.amin@aku.edu>
To: Aalmina Nizar; Afaq Ali; Ahmed Akber; Aiman Farman; Ajmal Uddin; Alen Amin; Alina Naiyar; Alishba Nawaz; Aliza Sajjad; Alma Khursheed; Aly Jiwani; Ambreen Shaheen; Amina Akbar; Amina Bibi; Amira Mir; Anara Akbar; Aneela Dinar; Annisa Khan; Anosha Essani; Anusha Amin Muhammad; Arina Jahan; Arisha Amin; Arisha Khowaja; Armina Zar; Arooj Naz; Arusa Ali; Ashia Bibi; Asma Abdul; azeem.540442.gn2018; Elina Ali; Eliya Taj; Emma Jan; Erum Rehmat; Falak Feroz; Fariha Gul; Fatima Jan; Fatima Khushanullah; Fehmida Abdul; Fehmida Shaukat; Fiza Mohammad; Gulshan Ara; Hajiba Bibi; Hamid Ullah; Hamzad Pari; Hasina Rahim; Heera Nihal; Hilan Sharif; Hina Hussain; Hira Nawaz; Ijaz Ahmed; Inara Khan; Inara Sadruddin; Injila Nadir; Innara Habib; Intikhab Alam; Irfana Shaheen; Isbhah Karim; Javid Ali; Jaweria Rahmat; Kainat Fayyaz; Kanwal Wali; Karima Bibi; Karishma Hayat; Khalid Anwar; Khosh Niyat; Kiran Amir; Kiran Nadeem; Komal Bano; Komal Khan; Kulsum Akbar; Maria Wasti; Meena Mir; Meher Angeez; Mehreen Ibrahim; Mehwish Kanwal; Mishal Aslam; mubina.541454.gn2018; Mushk Sehar; Muskan Fazal; Nadia Khanam; Naila Aziz; Nasima Gul; Nasima Karim; Nazia Naz; Nowsheen Khuda; Nowshin Iqbal; Qasim Hussain; Qudsia Mir; Rabab Mohammad; Rabia Fazal; Rabia Ulfat; Rafa Ramzan; razia.540499.gn2018; Reha Aslam; Rehana Shaban; Resham Sher; Rifat Nazish; Rimsha Karim; Roheen Baig; Rohina Ashraf; Sabia Sultan; Sadiqa Mirza; Safina Amin; Sahiba Bano; Sahiba Murad; Saima Rahmat; Saima Younus; Sakina Bibi; Sakina Umar; Sami Ullah; Sara Ladhani; Sara Suleman; Sarifa Afzal; Sarosha Anwer; Sarwat Yousaf; Seema Bano; Sehrish Amir; Shahida Elaluddin; Shahina Bano; Shahnaz Khan; Shahzadi Sakhi; Shaista Nizar; Shamseen Bano; Shazma Muhammad; Shazmeen Sher; Shehila Bibi; Shermeem Sher; Simran Muhammad; Sohrab Hussain; Sonum Sohail; Sumera Shaheen; Syeda Mahmood; Tehmina Ali; Tehmina Dildar; Ujala Sajjad; Ulfat Arman; Urooj Sahar; Uzma Hajat; Uzma Jamil; Uzma Rahmat; Waqar Gul; Wasim Iqbal; Zahir Mohammad; Zakira Bibi; Zehra Amanullah
Cc: Zulekha Saleem; Naghma Rizvi <naghma.rizvi@aku.edu>; Farhana Shaheen; Wahab Ali <wahab.ali@aku.edu>
Mon 2023-06-05 17:11

Dear Students,

Greetings!

With reference to the below email, kindly join the Zoom link on Tuesday, June 6, 2023 at 1430-1500hrs.

Join Zoom Meeting
https://aku-edu.zoom.us/j/98096466194

Meeting ID: 980 9646 6194
Passcode: 050017

Appendix 12 **Literature Review Table**

“Prevalence of Type A and Type B personality among undergraduate Nursing Students and association with their Academic year:

A cross-sectional Analytical Study

S#	Study title	Author’s name	Purpose of the study	Study design	Sample Size	Study settings	Key findings
1	Stress And Personality Type of Women Entrepreneurs in The Philippines **2023**	Dr. Elizabeth furio perez, dr. Kristine yumul opulencia, givens pratiwi marpaung indonesia	To identify the personality type a and b and assess the level of entrepreneurial stress in terms of work environment, inner-self and interpersonal relationship	Quantitative descriptive	265	Indonesia	women entrepreneurs, regardless of their personality Type (Type A or Type B) typically feel stressed about performance and guilty about relaxing.
2	Personality types an perceptions of discrimination in nursing students: a correlational study **2023**	Gülşah ünsal jafarov, ana luiza ferreira aydoğdu, kubilay erişlik	To determine the personality types and discrimination perception levels of undergraduate nursing students at two private universities	Descriptive correlational	172	Turkey	A large percentage of undergraduate nursing students have Type A personalities, yet personality type does not affect demographics.

			and assess whether personality affects perceptions of discrimination .				
3	Type A Behaviour Pattern and Health Behaviour of Polish Nurses **2023**	Lucyna Gieniusz-Wojczyk 1, Józefa D ˛abek and Halina Kulik	To assess the “coronary prone behaviour pattern”, considering health behaviour and work performed by Polish nurses	Descriptive Study	1080	Poland	The study found that those with the "coronary prone behaviour pattern" were more likely to practice healthy eating, stress management, mental and physical wellness, and alcohol reduction.
4	Academic performance in dental profession: a comparative study **2022**	Sofia Shehzad, Zainab Waheed, Samir Khan Kabir, Hira Butt, Fizza Tahir, Sofia Haider Durrani	To assess the impact of personality Type A and B, anxiety, depression, and stress on the academic performance of students and to determine the	Cross-sectional	256	Sardar begum dental college, Peshawar, Pakistan	Stress, anxiety, and depression impede student performance. Type A personalities outperformed Type B. High-achieving pupils exhibited mild stress and anxiety but

			impact of psychological profile on academic performance				severe depression. In tests, Type A students outperformed Type B.
5	Influence of Personality Type and Sex on Mental Health: An Analytical Study among College Students during Period of COVID-19 **2022**	Arun Chandu Shinde	To find out the effect of personality and sex on mental health of college students during the COVID-19 Pandemic.	Descriptive Statistics	200	India	Results revealed that, Personality has an influence on Mental Health, students having Type-A personality has superior Mental Health comparing to those students who having Type-B personality. There is no sex difference in respect to Mental Health. There is no interaction effect of personality and sex found on mental health

6	Academic performance as a function of psychological profile and personality type **2022**	Sofia Shehzad, Zainab Waheed, Hamid Hussain, Samir Khan Kabir4, Waleed Ahmad, Muhammad Alamzaib	To evaluate the association and psychological profile, including depression, anxiety, stress, and Personality Type (Type A And Type B), with the academic performance of the medical students.	Descriptive cross-sectional	325	Gandhara university Peshawar, Pakistan	Medical students' academic performance is linked to their personality types (Type A and Type B) and psychological profiles. Personality, stress, anxiety, and depression affect medical students' academic performance.
7	Type A/B Personality in Undergraduate Medical Students and Group Pressure; Conformity **2022**	Zainab Waheed, Sofia Shehzad, Sabeen Rahim, Waleed Ahmad, Samir Khan Kabir, Hamid Hussain	To assess the type of personality i.e., type A & type B in undergraduate medical students and to verify which personality takes more group pressure and shows	Comparative study	60	Gandhara university Peshawar, Pakistan	The results showed that Type A personalities take less group pressure and conform more, and do not reconsider their decisions or take less time compared to Type B personalities.

			conformity. This study also estimates time to reconsider their decision in each personality.				
8	Do type A personality and neuroticism moderate the relationships of occupational stressors, job satisfaction and burnout among Chinese older nurses? **2022**	Mengxin Lu, Feng Zhang, XiaohongTang, Liping Wang, Jinling Zan , Yan Zhu and Danjun Feng	The purpose of this study was to investigate the mediating efect of job satisfaction on the relationship between occupational stressors and burnout among Chinese older nurses, and explore the moderating efects of type A personality and neuroticism on the relationships among	A cross-sectional survey	527	china	Both nurses with high type A personality and high neuroticism had higher occupational stressors, higher burnout, and lower job satisfaction.

			occupational stressors, job satisfaction and burnout				
9	The Relationship between Entrepreneurship Tendencies and A-B Type Personality Traits of Nursing Students **2021**	Oya Çelebi Çakıroğlu,Meryem Merve Sonuç, Arzu Kader Harmancı Seren	To examine the relationship between nursing students' entrepreneurship tendencies and A-B type personality traits	Cross-sectional, descriptive, and correlational design	642	Istanbul, Turkey	It has been determined that the entrepreneurship tendencies of nursing students are above average and more than half of them have type B personality. In addition, it has been identified that nursing students with type A personality have higher entrepreneurship tendencies.
10	Prevalence of Type A and Type B personality among students at public medical	Zubair Hassan Bodla, Fareena Mustafa Soomro, Saad Yaqub, Gohar Ur Rahman, Qurat-Ul-Ain Khan, Khadijah	To find out the prevalence of Type A and Type B personality among the MBBS students at	Descriptive cross-sectional	1000	Pakistan	There is a significant association between academic year and Type A Personality. There was a

	schools: a multi-center cross-sectional study **2020**	Sajid, Nisha Lohana, Nikitha Chellapuram, Farheen Sana, Evaristus Chinonye Ezema, Evgeni Mirkin and Emmanuel Joachim Nebuwa	public medical schools, and the association between academic year and Personality Type				gradual increase in the number of Type A personality students from 1st year to final year in public medical schools.
11	Presenteeism: a research on Type A and Type B personality and demographic features **2019**	Nihan Yavuz, Ayten Kayhan	To examine whether presenteeism has changed to A and B Personality characteristics, and also to investigate presenteeism behavior according to the demographic characteristics of the participants	Quantitative cross sectional	157	Istanbul, turkey	Attendance is higher in Type A personalities than Type B. Women, managers, young persons, and low-educated people all have higher presenteeism rates than those with more education.
12	Influence of type a and type b personality on academic	Aabida Lateef, Muhammad Arshad Dahar, Muhammad Imran Yousuf	To investigates the influence of personality types a and b	Descriptive cross-sectional	500	Rawalpindi, Pakistan	Finding examined how Type A and B Personality affect student

	achievement of university students **2019**		on academic achievement of university students				performance. Students with Type-A personalities outperform Type B personalities academically.
13	The relationship among student stress, Type A personality, and academic performance in a business school in Indonesia **2019**	Galih Sakriti	To analyze the relationship among stress, Type A personality, and academic performance in an Indonesian business school.	Cross-sectional Analytical design	628	Indonesia	The effects of stress on students' academic performance were found to be negative. Those with Type A personalities tend to do better in school, according to studies.
14	Stress And Job Satisfaction in Employees with Type-A And Type- B Personality **2018**	Hema Khanna, Poonam Singh, Seema Rani Saraf, Shikha Gola	To shed light on the status of personal stress and job satisfaction in employees with Type A and Type B personality.	Descriptive Cros-sectional	80	India	Research reveals stress and job satisfaction differ by personality. Stress did not differ by gender. Males with both personalities

							were happier than females.
15	Relationship between Personality Types and Stress: A Comparative Study among Male and Female Nurses in Health Care Setting. **2017**	Ghasemian, Ayub; Kumar, G.Venkatesh;	To see the impact of gender on personality type and stress among nurses		100	Karnataka, India	Nurses with type A personalities are more likely to experience stress than nurses with type B personalities, and gender has no appreciable impact on any of these factors.
16	Personality types, demographic variables, and academic adjustment of fresh undergraduates of Obafemi Awolowo university, IIe-ife, Nigeria **2014**	W. O. Adeniyi, V. O. Adediran, Obafemi Awolowo, Nigeria j. o. Okewole	To ascertain the pattern of academic adjustment of students as well as the relationship between each of personality types and demographic variables and academic adjustment of students	Descriptive survey design	100	Obafemi Awolowo University, IIe-Ife, Nigeria	It was concluded that irrespective of the personality Types A and B, most fresh undergraduates in the study area had moderate level of academic adjustment.
17	Type A and Type B personalities	Abdul Rahman Alfulaij	To ascertain the prevalence of Type A/B	Descriptive	77	Arabian gulf university, Bahrain	More women have Type A personality

	from a psychological perspective among medical students **2014**	Faisal Abdullatif Alnasir	personalities among a first-year students who opt to study medicine				traits than Type B, contrary to the belief that Arab women are repressed and less decided about their future.
18	Type A and type B personality among undergraduate medical students: need for psychosocial rehabilitation **2014**	Aliya Hisam, Mahmood Ur Rahman, Syed Fawad Mashhadi, Ghulam Raza	To find out the frequency of type A and Type B personality among the students at undergraduate medical college. To find association between student year and personality type.	Descriptive cross-sectional	500	Rawalpindi, Pakistan	Every class had Type A pupils, and their numbers increased from first to last year. Student year correlated with Type A personality.