MEN'S HEALTH BEHAVIORS AMONG PUBLIC SAFETY PERSONNEL IN KELANTAN:

A PREDICTION AND MEDIATION ANALYSIS

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by

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DECLARATION

I, Muhammad Iqbal, hereby declare that this is the result of my originality, determined, independent, and hard-working research project, unless where due reference is made. All information that is required in this study was obtained from appropriate reported and acknowledged sources, and this document previously is not addressed entirely, partly, or concurrently submitted to any university for academic qualification.

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TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

LIST OF APPENDICES

LIST OF ABBREVIATIONS

ABM	Andersen's Behavioral Model
AIC	Akaike Information Criterion
BIC	Bayesian Information Criterion
CFA	Confirmatory Factor Analysis
CFI	Comparative Fit Index
CI	Confidence Interval
CI-TC	Corrected item-total correlation
CMNI-30	Conformity to Masculine Norms Inventory
CR	Critical Ratio
CVI	Content Validity Index
EFA	Exploratory Factor Analysis
FL	Factor loading
FVI	Face Validity Index
HBI-SF	Health Behavior Inventory-Short Form
HPB	Health Promoting Behavior
HSB	Health seeking behavior
LTSB	Leisure-time sedentary behavior

MI	Modification index
MSA	Muscle-strengthening activity
MSPSS-M	Malay version of the Multidimensional Scale Perceived of Social Support
MVPA	Moderate-to-vigorous physical activity
OPA	Occupational physical activity
PSP	Public Safety Personnel
NCDs	Non-communicable diseases
RMSEA	Root Mean Square Error of Approximation
SEM	Structural Equation Modeling
SRMR	Standardized Root Mean Square Residual
TLI	Tucker-Lewis fit index
WHO	World Health Organization

ABSTRAK

TINGKAH LAKU KESIHATAN LELAKI DALAM KALANGAN KAKITANGAN KESELAMATAN AWAM DI KELANTAN: ANALISIS RAMALAN DAN PENGANTARA

Pengenalan: Tingkah laku kesihatan lelaki dipengaruhi oleh norma maskulin dan sering kali ianya menghalang tindakan menggalakkan kesihatan dan tingkah laku carian bantuan. Norma ini memburukkan lagi jurang kesihatan antara lelaki dan perempuan. Intervensi kesihatan yang berkesan mesti mencabar norma maskuliniti tradisional ini dalam usaha meningkatkan taraf kesihatan lelaki.

Tujuan: Kajian ini melibatkan penterjemahan dan pengabsahan versi Bahasa Malaysia bagi Inventori Kepatuhan kepada Norma Maskulin (CMNI-30) dan Inventori Tingkah Laku Kesihatan-Singkatan (HBI-SF), meramal tingkah laku kesihatan lelaki, dan menilai peranan pengantara sokongan sosial dalam hubungan di antara norma maskulin dan tingkah laku kesihatan lelaki dalam kalangan kakitangan keselamatan awam di negeri Kelantan.

Kaedah: Dijalankan melalui dua fasa dari Jun hingga Disember 2023, bermula dengan menentusahkan boring soal selidik melibatkan 438 kakitangan lelaki di Hospital Universiti Sains Malaysia. Dalam fasa kedua, 257 kakitangan keselamatan awam dilibatkan untuk meramalkan tingkah laku kesihatan dan peranan pengantara sokongan sosial melalui analisis regresi, analisis faktor pengesahan (CFA), dan pemodelan persamaan berstruktur (SEM) menggunakan perisian SPSS, R, dan Mplus.

Keputusan: Kedua-dua soal selidik mempunyai kandungan psikometrik yang baik secara amnya, walaupun terdapat beberapa isu. Tingkah laku kesihatan lelaki yang buruk diramalkan dalam kalangan mereka yang tidak pernah mendapatkan rawatan di fasiliti kesihatan awam, pengaruh ibu bapa, dan mempunyai masa lapang, manakala teman/rakan sekerja dan sokongan pengangkutan berfungsi sebagai perlindungan. Sokongan sosial menjadi pengantara sepenuhnya di dalam hubungan antara norma maskulin dan tingkah laku kesihatan, seterusnya membatalkan kesan negatif langsung norma ini. Kesan keseluruhan menunjukkan interaksi yang ketara antara norma maskuliniti, sokongan sosial, dan tingkah laku kesihatan lelaki.

Kesimpulan: Intervensi kesihatan yang mensasarkan sokongan sosial secara berkesan dapat mengatasi implikasi negatif norma maskulin, dan dengan itu menggalakkan tingkah laku kesihatan yang lebih baik dalam kalangan lelaki.

Katakunci: tingkah laku kesihatan lelaki, kakitangan keselamatan awam, ramalan, analisis regersi, analisis faktor pengesahan, pemodelan persamaan berstruktur.

ABSTRACT

MEN'S HEALTH BEHAVIORS AMONG PUBLIC SAFETY PERSONNEL IN KELANTAN: A PREDICTION AND MEDIATION ANALYSIS

Introduction: Men's health behaviors are influenced by masculinity norms, often deterring health-promoting actions and help-seeking. These norms exacerbate the health disparities between men and women. Effective health interventions must challenge these traditional masculinity norms to improve health outcomes for men.

Objective: This study involved translating and validating the Malay versions of the Conformity to Masculine Norms Inventory (CMNI-30) and the Health Behavior Inventory-Short Form (HBI-SF), predicting men's health behaviors, and assessing the mediating role of social support in the relationship between masculinity norms and men's health behaviors among public safety personnel in Kelantan.

Methods: Conducted in two phases from June to December 2023, validated questionnaires first involved 438 male staff at Hospital Universiti Sains Malaysia. In the second phase, involving 257 public safety personnel, the study assessed predictors and social support's mediating role using regression analysis, confirmatory factor analysis (CFA), and structural equation modeling (SEM), conducted using SPSS, R, and Mplus software.

Result: Both questionnaires possessed good psychometric properties generally, though some issues were noted. Poor men's health behaviors involved those who never sought treatment at public healthcare facilities, parental influence, and leisure time,

while friends/colleagues and transportation support served as protection. Social support fully mediated the relationship between masculinity norms and health behaviors, nullifying the direct negative impact of these norms. The overall effect demonstrated a significant interplay between masculinity norms, social support, and men's health behaviors.

Conclusion: Health interventions targeting social support can effectively counteract the negative implications of masculinity norms, thereby promoting better health behaviors among men.

Keywords: men's health behaviors, public safety personnel, prediction, regression analysis, confirmatory factor analysis, structural equation modeling

CHAPTER ONE: INTRODUCTION

1.1 Men and Disease Burden

Over the years, life expectancy in Malaysia has generally increased. However, it experienced a notable decline during the COVID-19 pandemic, starting in 2020 (Tan *et al.,* 2022), before recovering in 2023. Specifically, the overall life expectancy at birth was 74.7 years in 2020, dropped to 74 years in 2021 and 73.8 years in 2022, however, rose again to 74.8 years in 2023, matching the 2019 level (Department of Statistics Malaysia, 2023). A similar decline trend is seen across 2019 to 2020 globally, decreasing from 72.8 to 72 years, and subsequently, 71 in the year 2021, signifying a drop of 1.2% annually or 1.8 years in just the 3-year (Global Change Data Lab, 2023). This is explained by the fact throughout the world that the effect of the COVID-19 pandemic over many fatalities resulted in the shortening of life of the inhabitants in numerous countries (Cao *et al.,* 2023). Nonetheless, Malaysia stands behind the second ASEAN country for life expectancy at birth, having only 83.0 and 78.7 years, respectively, by which Singapore and Thailand take the lead. Even so, it is not in the same league and somewhat behind the developed nations, among which Japan (84.4 years), the Republic of Korea (83.5 years), and Australia (83.3 years) are the three countries being on top of the list. In particular, gender disparities are evident through a consistent display of males' shorter life spans compared to females at various specific ages (15, 60, and 65 years old) and across ethnic groups in Malaysia annually, with the latest male life expectancy in 2023 stands at 72.5 years that which is 4.9 years much lower than females (77.4 years). In fact, across ethnic lines, the

Chinese outlive Malay, other Bumiputera, and Indian groups (Department of Statistics Malaysia, 2023).

From one standpoint, the statistics indicate a substantial correlation between shorter life expectancy among males with non-communicable diseases (NCDs) burden. For instance, males are 0.6% higher than females in the prevalence of raised blood pressure (30.3% vs. 29.7%), and even worse, at least 16.2% of males who have raised blood pressure are those not known to have hypertension, compared to only 11.9% among females. A similar trend can be seen in the prevalence of raised blood glucose among those with unknown diabetes status (9.2% vs. 8.6%) (National Institutes of Health, 2019). Over the years, Ischemic Heart Disease (IHD) remained the main cause of mortality – 15.6% (2018), 15.0% (2019), and 17.0% (2020) – surpassing other causes, except in 2021, ranked second (13.7%) after the cause due to the COVID-19 infection (19.8%). Male deaths outnumbering females by 68.5% (2018), 69.4% (2019), and 68.6% (2020) (Department of Statistics Malaysia, 2019, 2020b, 2021). However, IHD once again became the main cause of death (16.1%) in 2022, preceding other causes of death among males (18.2%) (Department of Statistics Malaysia, 2022; Harinderan, 2023), predominantly higher among males compared to female (Meikeng, 2023), and continues to become a leading cause of premature deaths in both males and females,

Furthermore, the proportion of males with stroke always transcended women consistently from 2009 to 2016 with a range between 51.4% and 59.7% (National Stroke Registry, 2016). Hwong *et al.* (2021) further strengthen this statistic in which the trend was found to be inclined by 4.9% among men but declined by 3.8% among

women. Besides, among the ten most prevalent types of malignancies in Malaysia, males presented a higher age-standardized incidence rate than females for all malignancies including colorectal, trachea, bronchus, and lung, lymphoma, nasopharynx, leukemia, and liver (National Cancer Institute, 2019). On top of that, studies demonstrated a significant proportion and trend of males contracting men-related diseases. In the recent National Health and Morbidity Survey (NHMS), erectile dysfunction is found to be 78.7% of the overall prevalence (probable mild: 47.1% and probable moderate-severe: 31.6%), an increase of 18.7% from 1998 (overall prevalence: 60%; mild: 44%, and moderate-severe: 16%). Likewise, according to a similar report, the prevalence of probable Benign Prostatic Hyperplasia (BPH) among males over 40 years and above is highlighted as significant as 16.3% (National Institutes of Health, 2019).

1.2 Men and Risk Factors

It has also been discovered that males engage in unhealthy lifestyles and risky activities more than women do from the aspect of the NCDs risk factors. It is made very evident from the most recent NHMS 2019 findings that males are more prone to smoke than women. Notably, males are remarkably higher than females to be current smokers by more than 30 times (40.5% vs. 1.2%), including current cigarette smokers (39.6% vs. 1.2%) and e-cigarette/vape use (9.4% vs. 0.3%). Similarly, in terms of the current drinkers, predominantly among those aged 18 years and above (16.9% vs. 6.4%), 13 years and above (15.8% vs. 6.2%), especially as binge drinkers and heavy episodic drinkers with a prevalence of 49.5% and 10.3%, respectively. In a similar

vein, the prevalence of ever drug/substance use among males is significantly higher than among females (2.8% vs. 0.2%), similarly for the current users (1% vs. 0.1%). Underweight and overweight too, are expressed higher among males, accounting for 7.3% and 30.8% respectively, with a higher prevalence of the intake of sweet beverages as compared to females (43.1% vs. 34.4%; males higher in daily commercially packed ready-to-drink beverages at 11.7% with median sugar intake 35.2g/day, and daily intake premixed drinks at 30.7% with median sugar intake 14.3g/day) (National Institutes of Health, 2019).

Indirectly, all of the aforementioned data findings have prompted endeavors to explore statistical data to the extent of health literacy and health-seeking behavior among men. According to NHMS 2019, overall, one in three Malaysians has low health literacy, emphasizing the proportion of males having limited health literacy is 37.2%, higher than females. Moreover, one in 12 Malaysians used outpatient healthcare services, with a lower rate in males as compared to females (7.1% vs. 9.1%). A similar trend was also observed, among one in 20 hospital admissions, males had a lower rate (4.1% vs. 6.2%). The prevalence of males who have undergone health screening or medical check-ups is lower than females by 6% (46.1% vs. 52.1%). Furthermore, the prevalence of the Fecal Occult Blood test (FOB) - as one of the screening tests conducted at healthcare facilities - indicated a lower rate expressed by males (10.6% vs. 11%) (National Institutes of Health, 2019).

1.3 Precision of Public Health: Applying Precision Medicine Concept to Men's Health Interventions

For a couple of decades, health perspectives have undergone paradigm shifts that prompted researchers and academicians to address men's health as one of the considerations in the global health agenda, making it one of the significant key contributing factors to the overall individual, family, and societal well-being. This has been explored through fundamental principles behind health issues, statistical data, and interventional approaches according to the sex- or gender-based specific which has been promoted over an array of preceding studies.

Precision medicine is an innovative approach to individualized healthcare that tailors not only medical therapies but also preventive strategies to each patient's characteristics. This approach takes into account factors such as genetic makeup, environmental influences, and lifestyle choices to design more effective and personalized healthcare solutions. For example, the basic understanding of cardiovascular diseases has directed the etiology, pathophysiological mechanisms, clinical presentations, outcomes, therapeutics, and preventive management to the inequality for both men and women. In fact, the differences occurred before the implantation of the zygote and continue throughout prenatal development in childhood and adulthood. Hence, it allows diverse susceptibility between men and women to some diseases including certain cancers and autoimmune (Baetta *et al.,* 2018). Sex differences in cardiovascular diseases are not only due to environmental factors but also result from complex interactions among genetic and hormonal factors that manifest individual risk profiles and phenotype presentation of disease. Although

genetic analyses are prompted by studies to gain insight into etiologies and risk factors of cardiovascular diseases, the basic genetics contributed by sex chromosomes influence the development of cardiovascular diseases, especially in capillary wall thickness and arterial calcification. Therefore, the sex differences in incidence or prevalence of morbidity or mortality represent important health disparities (Winham *et al.*, 2015).

A similar connotation is pronounced by Spence and Pilote (2015) that biological differences between men and women in terms of arterial size, stenosis, remodeling, and interference in decisions of investigation and revascularization may all affect the outcomes after. Moreover, gender-related variables such as gender-based propensity in engaging with risk-taking behavior including smoking or excessive alcohol intake may help to explain health-related sex differences including the higher prevalence of cardiovascular diseases in younger men than women. On top of that, gender-related characteristics or traits such as women with higher caregiving on children and housework responsibilities, whereas men with higher commitment to employment, breadwinner, and self-reliance, thus influence the differences of both sexes in coping behaviors or attitudes that affect their health outcome differently.

According to Pilote and Humphries (2014), lacking information concerning sex and gender-based specific may bring real implications for healthcare especially related to resource wastage. For example, the United States Food Drug Administration has approved 78 high-risk cardiovascular devices, including the Implantable Cardioverter-Defibrillator (ICD) according to the population consisting mainly of men (67%) despite a very low enrollment of women in trials. In fact, less sex-specific study

analysis (41%) and 28% of guided studies not even the sex distribution of the patient population. However, a meta-analysis then conducted refuted their justification and revealed a lack of efficacy of ICD in primary prevention trials in women with heart failure. In another example, the most common and widely aspirin usage in primary prevention should also be considering the sexual differences in which evidence-based indicated aspirin reduces myocardial infarction in men but not in women, and reduces stroke rate in women but not in men.

Taking into account the studies above, precision public health can indeed apply the principles of precision medicine to tailor public health interventions to specific population segments, particularly men's health behaviors. This approach involves comprehensive data collection and analysis to identify health risks and behaviors within the target group. Throughout risk stratification, interventions are designed to address the unique needs and challenges faced by men by incorporating insights from behavioral sciences and community engagement, including technology and innovation which play crucial roles in reaching and engaging men in health management. Additionally, policy support is essential for implementing effective interventions, such as workplace wellness programs and policies to promote healthy behaviors. By applying precision public health principles, interventions can be more personalized and impactful, leading to improved health outcomes and resource efficiency. This approach acknowledges the diversity within populations and seeks to address health disparities by targeting interventions to specific segments of the population.

1.4 Problem Statement

Masculinity, a core aspect of male identity, is a socially constructed concept that dictates societal expectations for male behavior and presentation. This construct is heavily influenced by a blend of cultural and religious factors in society, necessitating an intersectional approach to fully understand its nuances. This perspective acknowledges the diverse expressions of masculinity across various age groups, classes, ethnicities, religions, socioeconomic statuses, and geographical backgrounds, emphasizing that there is no singular way to be a “man”. In Malaysia, masculinity is shaped by the interwoven cultural influences of Malay, Chinese, Indian, and Indigenous communities, alongside the religious tenets of Islam, Buddhism, Hinduism, and Christianity, with societal expectations varying accordingly. Men who conform to cultural expectations are seen as congruent with male identity, while those who don't may have their masculinity questioned. Traditional gender roles, emphasizing male leadership, dominance, strength, and authority, are prevalent across all these groups, reinforced within both family and community settings. Historically, Malaysian masculinity has been deeply tied to patriarchal values, with men expected to be primary breadwinners, decision-makers, guardians, and protectors. These roles promote traits such as strength, resilience, self-reliance, and stoicism.

Socioeconomic status significantly affects how masculinity is perceived and enacted. Men from lower socioeconomic backgrounds often face intense pressure to be primary breadwinners despite limited opportunities, which can lead to higher stress levels and risky coping behaviors. Conversely, men from more affluent backgrounds may experience pressures related to maintaining social status and achieving

professional success, with better access to healthcare and educational resources shaping their health behaviors and attitudes. The urban-rural divide further influences the expression of masculinity. Urban men, exposed to global and progressive ideas about gender equality, may adopt more flexible family roles and be more open to discussing health issues. In contrast, rural men might adhere more strictly to traditional norms, with less exposure to global influences and greater stigma around seeking help for health issues. Generational differences also play a crucial role in shaping masculinity. Older generations often adhere strictly to traditional masculinity norms, showing reluctance to seek medical help or discuss mental health issues, embodying ideals of stoicism and self-reliance. Younger generations, influenced by global media and changing societal values, may embrace more diverse and inclusive expressions of masculinity, challenging traditional norms and engaging in open discussions about health and well-being. This intersectional approach reveals that Malaysian men's health behaviors and outcomes are influenced by the complex interplay of their identities. Younger, urban men might be more open to seeking mental health support, while older, rural men may avoid it due to stigma. Men from lower socioeconomic backgrounds may engage in risky behaviors such as smoking or heavy drinking due to financial stress, while those from higher socioeconomic backgrounds might avoid these due to greater health literacy and access to resources. Ethnic backgrounds also play a role, with varying levels of trust in the healthcare system affecting men's willingness to seek help; for instance, Indigenous men might rely more on traditional healing practices.

Therefore, it is unsurprisingly that statistical data shows Malaysian men are significantly burdened by non-communicable diseases (NCDs), higher exposure to risk factors like unhealthy lifestyles and risky activities, and remarkably, higher premature deaths. Poor health literacy and seeking behaviors further exacerbate their health issues, leading to a reduced lifespan. Despite these findings, the understanding of men's health remains superficial. Men's health is shaped by a complex and interrelated structure that demands deeper exploration and analysis. Historically, men's unique health concerns have been overlooked and undervalued in public health discourse, which often focuses on disease-oriented interventions rather than a broader spectrum of health issues. Addressing this gap requires prioritizing health concerns not only for vulnerable and marginalized populations but also for men, whose issues often receive less public attention. The "iceberg theory" aptly describes men's health, suggesting that while men appear strong and stable on the surface, underlying complex masculinity traits such as resilience, secrecy, and independence often prevent them from expressing health issues or engaging in healthy behaviors. Understanding men's health necessitates evaluating masculinity norms, which significantly influence health behaviors. These norms, deeply embedded in societal constructs, impact men's health literacy, attitudes, and behaviors, ultimately affecting their health outcomes.

Despite the detrimental effects of traditional masculinity norms on men’s health, there remains a noticeable lack of research, particularly in understanding these norms within local contexts. Extensive international research has been conducted on men's health behaviors, but local studies are scarce and often focus on specific subgroups rather than the general population. Recent local literature reveals a limited number of

studies with a narrow scope, failing to capture the full extent of these issues. The fact is researchers often face considerable challenges in studying men’s health due to the difficulty in reaching male respondents and their reluctance to share personal matters. Masculinity, intertwined with self-pride, makes it a sensitive topic for men to disclose, posing obstacles to comprehensive research. This reluctance diminishes researchers' interest in exploring men’s health issues in depth. Furthermore, there is a significant gap in the objective assessment of masculinity norms, which are frequently subjected to peripheral rather than central to men's health analyses. The lack of a supportive research environment, including the absence of translated and validated research instruments in the local Malay language, hampers efforts to explore men's health comprehensively. This deficiency impedes the objective evaluation of masculinity norms within our local male population, thus hindering a deeper understanding of their impact on men's health behaviors.

Previous research has identified social support from spouses, family members, friends, and significant others as a key influence on men's health behaviors. Similarly, masculinity has a direct impact on these behaviors. However, the interplay between masculinity and social support in shaping men's health behaviors within the same context remains underexplored. Most studies have examined the direct effects of these variables separately. The relationship between masculinity and men's health behaviors is complex and intertwined with various other factors. This complexity has led to a lack of comprehensive explanations about how social factors influence the dynamics of masculinity over time. Specifically, the mediating role of social support in the relationship between masculinity and men's health behaviors is not well understood.

Several important questions arise from this gap in the literature. In the absence of social support, how does masculinity influence a man's decision to seek or ignore social support before engaging in health behaviors? Conversely, does substantial social support influence a man's consideration of this factor before undertaking healthy behaviors, thereby challenging the direct effect of masculinity on these behaviors? Does social support fully mediate the relationship between masculinity and health behaviors, or does it partially mediate, suggesting the presence of additional mediating variables? How can these complex interplays be scientifically proven through research?

1.5 Study Rationale

Amidst the background of rapid advancements in contemporary medical technology and various public health intervention strategies, undeniably, health issues remain unabated, and in many cases, worsen year by year. This escalating public health burden calls for a deeper understanding of the underlying reasons and promoting opportunities to develop effective interventional approaches. The goal is to alleviate the increasing strain on the national public health sector, particularly healthcare costs and utilization of resources. To achieve this, there is a growing recognition of the importance of tailoring public health policies and interventions to individualized patient care strategies, promising the optimization of both individual and population health outcomes. Therefore, central to this strategy is the incorporation of a sex or gender-specific approach across all segments of health interventions.

Recognizing the significance of this issue is essential for policymakers tasked with formulating effective health policies and interventions. The direction of this effort is the enhancement of health literacy among men, which serves as a cornerstone for fostering positive health behaviors, consequently, improving overall health outcomes, not just for individual men but also for its interrelated groups including women and children. Hence, through this research, valuable insights are directed for policymakers and practitioners to develop tailored public health policies and intervention strategies by emphasizing the critical role of social support and addressing social factors in detail, thus, efforts to enhance men's health can be significantly strengthened. Consequently, this understanding can persuade policymakers to create more comprehensive intervention strategies, ultimately leading to improved and sustainable health outcomes for men.

Therefore, this study addresses limitations through objective assessments not only of masculinity norms but also social support as the subject core in determining men’s health behaviors by providing valid and reliable research tools. In addition, this study enables researchers to fill the knowledge gaps by verifying social supports as significant key variables that can influence men’s health behavior. It provides specific and detailed scientific evidence highlighting the importance of social support as a mediator in the relationship between masculinity norms and health behavior. By employing advanced analysis techniques, particularly Structural Equation Modeling (SEM), the study allows for the simultaneous estimation of both direct and indirect effects. This means that not only is the direct impact of masculinity on health behaviors assessed, but also the indirect impact mediated by social support.

1.6 Research Questions

Research questions were established as below:

1. Are the Conformity to Masculine Norms Inventory (CMNI-30) and Health Behavior Inventory-Short Form (HBI-SF) valid tools to assess the conformity to masculine norms and men's health behaviors among public safety personnel in Kelantan?
2. What are the factors in predicting men's health behaviors among public safety personnel in Kelantan?
3. Does social support mediate the relationship between masculine norms and men's health behaviors among public safety personnel in Kelantan?

1.7 Research Objectives

1.7.1 General objective

To study the predictors of men's health behaviors and the mediating role of social support on the relationship between masculinity norms and men's health behaviors among public safety personnel in Kelantan using validated Malay versions of the CMNI-30 and HBI-SF questionnaires.

1.7.2 Specific objectives

The specific objectives of this research are:

1. To translate and validate the CMNI-30 and HBI-SF questionnaires into Malay versions.
2. To determine predictors of men's health behaviors among public safety personnel in Kelantan.
3. To determine the mediating role of social support on the relationship between masculinity norms and men's health behaviors among public safety personnel in Kelantan.

1.8 Research Hypothesis

1. The Malay Version of the CMNI-30 and HBI-SF questionnaires are valid tools to measure conformity to masculine norms and men's health behaviors.
2. Using Andersen's Behavioral Model (ABM) as the theoretical framework, various significant predictors influence men's health behaviors among public safety personnel in Kelantan.
3. Social support is a significant mediator in the relationship between masculinity norms and men's health behaviors among public safety personnel in Kelantan:

a) Social support is associated with masculinity (H_1)

b) Health behavior is associated with masculinity (H_2)

c) Health behavior is associated with social support (H_3)

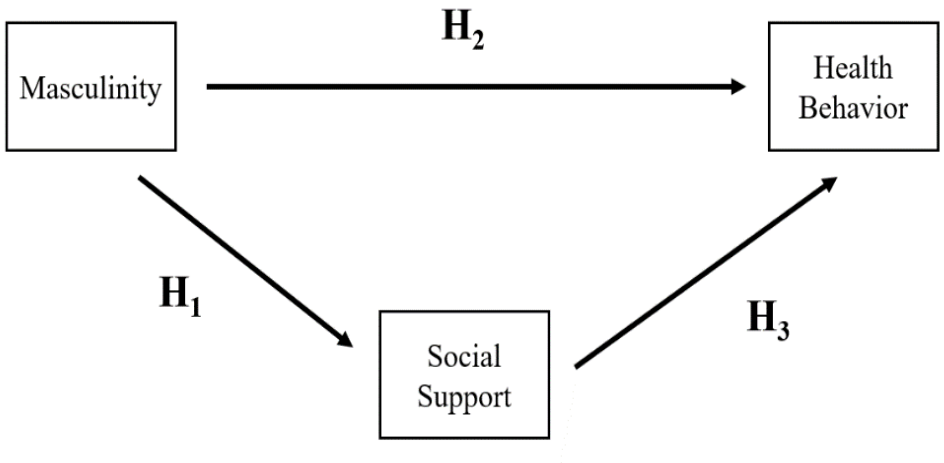

Figure 1.1: Summary of research hypothesis.

CHAPTER TWO: LITERATURE REVIEW

2.1 Men's Health Behavior

Men's health behavior is a critical area of study, with wide-ranging implications for public health policies and interventions. Principally, the World Health Organization (WHO) defined men's health in the 1940s as a state of complete physical, mental, and social well-being, not merely the absence of disease or infirmity (World Health Organization, 1948). Men's health can be regarded as a discipline dedicated to promoting this comprehensive well-being across the lifespan, from boyhood to manhood, addressing specific health issues men face (Bardehle, Dinges, and White, 2017). A healthy man is empowered to achieve optimal physical, mental, and social well-being, viewing health as a vital resource for daily living.

Health behaviors are dynamic throughout a person's life, across different groups of people, in various settings, and over time. Health behaviors, also known as health-related behaviors, are actions that people take that impact their health or lifespan. These actions intentionally or unintentionally, either improve or harm one's own health or the health of others (Short and Mollborn, 2015). A significant recent development in understanding health behaviors is the concept of healthy lifestyles (Cockerham, 2005). This approach considers behaviors as interconnected and influenced by one's identity and social group membership (Williams, 1995). Thus, while healthy lifestyles are practiced by individuals, they are shaped by larger social and cultural factors. Recognizing how these behaviors interact is crucial for effectively promoting healthy changes.

In discussing health behaviors, it is essential to differentiate between health-enhancing and health-impairing behaviors. Health-impairing behaviors are those that negatively impact health or increase the risk of disease. Examples of such behaviors include smoking, excessive alcohol consumption, substance use, the intake of high-fat or sweety diets, and risky sexual activities. Conversely, health-enhancing behaviors promote health benefits or offer protection against disease. These behaviors include regular physical exercise, consumption of fruits and vegetables, healthcare-seeking behaviors, and adherence to prescribed medical treatments and medical advice (Conner, 2015).

Men's health behavior presents significant challenges not only in Malaysia but globally, warranting increased attention from all stakeholders. The high prevalence of health-impairing behaviors among men, as well as their low engagement in health-enhancing behaviors, is a universal issue. Malaysia exemplifies this trend, as evidenced by a study titled "The Pattern in Prevalence and Sociodemographic Factors of Smoking in Malaysia, 2011–2019: Findings from National Surveys" by Mohd Yusoff *et al.* (2022), the study found that the prevalence of smoking in Malaysia was 23.1% in 2011, 22.8% in 2015, and 21.3% in 2019. Smoking rates were consistently higher among males, adults aged 25–44 years, individuals of Malay ethnicity, self-employed, and those with lower education levels. When compared to other Asian countries, Malaysia's smoking prevalence was similar to that of the Philippines (22.7%), Vietnam (22.5%), and Thailand (24.0%), however, lower than Indonesia (36.1%) and higher than Singapore (16.0%) and Brunei (18.0%).

Likewise, a recent local study by Robert Lourdes *et al.* (2022) found that the prevalence of current alcohol drinkers among Malaysians aged 15 years and above is 11.5%. The study revealed a significant gender disparity, with 16.3% of males being current drinkers compared to 6.4% of females. Although Malaysia has a relatively low alcohol-per-capita consumption compared to other Southeast Asian countries, the prevalence of alcohol consumption among men consistently exceeds that among women. This trend is also observed in other countries such as India, where 8.0% of men and 0.6% of women are current drinkers, and Sri Lanka, where 35.8% of men and 1.2% of women are current drinkers.

Moreover, the data from a nationwide survey reveals a significantly higher prevalence of both lifetime and current drug/substance use among men compared to women (Ismail *et al.*, 2022). Specifically, the prevalence of lifetime drug use among men was 10.1%, in contrast to 0.8% among women. Similarly, the prevalence of current drug use was 6.6% among men, compared to 0.4% among women. While these rates are generally lower than those reported in studies from the United States, Norway, and Iran, the findings align with the global trend of higher lifetime and current drug use and substance abuse among males compared to females. Among Malaysian adolescents, the prevalence of substance use was reported to be 30-40% for boys and 10-20% for girls, further highlighting the gender disparity. Despite considerable efforts and resources dedicated to combating substance abuse, Malaysia has experienced a significant annual increase in such cases, mirroring trends seen in other countries. This suggests that the higher prevalence of substance abuse among youth (15-40 years) is a global issue, not unique to Malaysia.

Studies locally and internationally conducted in past decades reached the same conclusion; health-seeking behaviors differ significantly for both sexes with female engagement are more than male counterparts (Ihaji *et al.,* 2014), health-seeking behaviors among men is poorer than women (Abdullah *et al.,* 2022), gender differences are significant in health-seeking behaviors with women visited primary care providers to a greater extent than men did (Thompson *et al.,* 2016), more women than men perceived most people would seek for general practitioners for commonly consulted health concerns (M. T. Lim et al., 2019), men are less likely than women to seek treatment for mental health issues due to some factors (Brown *et al.,* 2019), gender-based health-seeking behaviors theme emerged expressing even at private facilities more females seeking help than males, remarkably, a higher mean delay of healthcare seeking among males with 60 days as compare with 33 days among females (Samal, 2016), and males with mental or substance abuse disorders have lower odds than females regarding health professional consultation and utilization of support services even with severe disorders (Harris *et al.,* 2016). All of these study findings indicated that the lower health-seeking behavior has caused poor health outcomes and poor quality of life among the male population.

2.2 Predictors of Men's Health Behaviors and Andersen's Behavioral Model (ABM)

Through literature, a number of predictors have been highlighted on men's health behaviors. Some of the main factors defining men with positive health behaviors are good economic status, white-collar occupations, good working abilities, positive views

on life and work, high self-assessment on health status, and adherence to masculinity (Hildt-Ciupińska and Pawłowska-Cyprysiak, 2020).

A closer look into the reality of men's health behaviors in the local context can be viewed through Lim *et al.* (2019) who conducted a qualitative study examining barriers and facilitators to HIV testing and treatment among men who have sex with men (MSM) in Kuala Lumpur, Malaysia. The researchers conducted in-depth interviews with 20 HIV-positive MSM to gain insights into their health behaviors. Most participants discovered their HIV status after a prolonged illness, through partner diagnosis, or via blood donation. Barriers to HIV testing included personal factors such as a belief in being healthy, fear of a positive result, and denial of potential HIV infection. Social and structural barriers involved stigma from healthcare providers and family members, insufficient information about free testing services, and long wait times at testing facilities. For HIV treatment, personal barriers included perceptions of HIV as incurable and treatment as overly complicated. Social barriers were related to stigma and homophobia, while structural barriers included the high costs associated with treatment. Facilitators for testing included mandatory health screenings for employment or education. In terms of treatment, social support from family, friends, and healthcare providers motivated participants to seek care post-diagnosis. The study's findings highlight the absence of adequate "test-and-treat" practices among Malaysian MSM, underscoring the intricate personal, social, and structural factors affecting HIV testing and treatment behaviors. To increase the uptake of HIV services among MSM, targeted interventions are necessary. Hence, the authors suggest that these should include promoting the benefits of regular testing and early treatment,

addressing stigma, enhancing treatment literacy, and reducing structural barriers to testing and care. This comprehensive approach could significantly improve the HIV care continuum for this key population (Lim *et al.*, 2019).

In another local study, Ramli *et al.* (2019) investigated health-seeking behaviors related to erectile dysfunction (ED) among men undergoing methadone maintenance treatment (MMT) for opioid addiction. The study surveyed 50 MMT patients who perceived themselves as having ED, revealing that 78% reported ED affected their sex life. However, only 8% discussed ED with a doctor, and 48% did not seek any information about it. Although 54% sought some form of treatment, self-treatment was the most common approach (66.7%). Barriers to seeking medical treatment included perceiving ED as not serious (41.9%) and hesitation to discuss it (32.6%). The study found that higher education levels and being married or divorced were associated with a greater likelihood of seeking treatment. There were no significant differences in perceived effectiveness among medical, self, and alternative treatments. Hence, the authors suggest routine ED screening in MMT clinics, incorporating ED discussions in patient education and support groups, and improving patient-provider communication and trust. These interventions help to address significant barriers related to perceptions of ED and the hesitancy to discuss it with healthcare providers. The findings highlight the need for increased awareness, screening, and destigmatization of ED among MMT patients to enhance health-seeking behaviors and appropriate treatment (Ramli *et al.*, 2019).

Arumugam *et al.* (2020) conducted a mixed-method study on treatment-seeking behavior (TSB) among civil servants in northeastern Peninsular Malaysia, revealing

that 64.6% of participants engaged in inappropriate TSB. Key factors influencing TSB included health literacy, with higher literacy linked to better TSB. Participants often became interested in health information only after a chronic diagnosis. A significant delay in seeking treatment was noted, with most waiting 48 hours or more until symptoms became severe. Cultural beliefs led many to prefer traditional remedies to professional care. Illness perception also played a role, as severe illnesses prompted more immediate treatment, while minor ailments were self-treated with over-the-counter drugs or home remedies, facilitated by easy access to medications. Family influence was significant in that persuasion from spouses and advice from friends often prompted earlier treatment. Barriers included long wait times at clinics, limited doctor availability, and the reluctance of men to appear weak. Many equated being symptom-free with being healthy, seeking care only when symptoms appeared. The study highlighted the need for focused attention on men's health issues in Malaysia. Recommendations included developing gender-sensitive health services like men's clinics and online health portals and addressing masculinity norms that discourage help-seeking behaviors. Arumugam *et al.* (2020) emphasized that policy and intervention strategies must cater to men's specific needs and preferences to improve TSB among this demographic.

A recent literature review by Abdullah *et al.* (2022) synthesized over 22 studies dominantly abroad, published between 2017 and 2022, categorizes both barrier and facilitator factors influencing men's health-seeking behavior into three main population characteristics according to Andersen's Behavioral Model (ABM) theory; predisposing factors (socio-demographic, health belief), enabling factors (healthcare

services and facilities, alternative medicine, social support), and need factors (perceived need) across various health issues. According to the literature, among the predisposing factors, sociodemographic profiles such as increasing age and advanced educational level raise the likelihood of men seeking treatment. In the sociocultural sphere, perceived cultural normalization such as alcohol consumption tends to influence men, in fact, men seek consultation from peers for health advice instead of healthcare professionals. On one side, the literature further explains that health beliefs dive into various important variables including conformity to gender norms, knowledge, attitude to treatment, coping mechanism, and perceived benefit. Conformity to masculinity ideals entails the concealment of health status, discourages men from expression or discussion, and is less caring towards seeking treatment, as this implies weakness, seems vulnerable and undermines masculinity pride.

Moreover, Abdullah's review highlights due to a lack of knowledge, men tend to disregard health-related threats and risks to their health status, considering it inconsequential and unnecessary to seek treatment, only to be treated once the condition deteriorates. Attitude plays a role in behavior too; if men consider their health issues to be too intimate and embarrassing, or if they believe that their health condition is incurable and hopeless, or if their doubts about prescribed treatments, it will affect the appropriate men's health-seeking behavior. In fact, the review also reveals that men normally opt for high levels of coping mechanisms, especially in managing stress, yet this strategy can result in unhealthy behaviors. The fact that denial and avoidance syndrome over illness clearly explain the high level of self-reliance as the means of coping approach for men. In addition, Abdullah's literature