PERSONALITY, FALLS, AND PSYCHOLOGICAL CONCERNS IN AGING: A MULTI-METHOD STUDY OF RISK, BEHAVIOR, AND COPING AMONG COMMUNITY-DWELLING OLDER ADULTS

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Master of Science (Gerontology), University of Southampton, 2019

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

DOCTOR OF PHILOSOPHY

in

POPULATION STUDIES IN HEALTH
(Policy, Political Analysis, and Population Health)

Faculty of Health Sciences
University of Lethbridge
LETHBRIDGE, ALBERTA, CANADA

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Date of Defence: August 29, 2025

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DEDICATION

I dedicate this thesis to God, whose unwavering love and mercies have been my guiding strength. To my husband, Israel, your steadfast support and friendship have been my anchor, I am grateful beyond words. To our wonderful children, Isabella and Israel Jr., your presence has been both a motivation and a testament to resilience throughout this journey. To my future aging self, may this work serve as a reminder that personality shapes our paths, influencing how we adapt, grow, and navigate the evolving journey of aging.

ABSTRACT

This thesis investigated the relationship among personality traits, falls, and fall-related psychological concerns in community-dwelling older adults, using a multi-method approach across Canada (≥65 years) and Nigeria (≥60 years). Study 1, a scoping review of eight peer-reviewed studies, identified neuroticism (emotional instability) as a risk factor for both falls and fear of falling (FOF), and conscientiousness as protective. Evidence on balance confidence was absent and only one study addressed fall self-efficacy, revealing key gaps for future work. Study 2 used longitudinal data from the Canadian Longitudinal Study on Aging (CLSA) to test whether personality traits and health behaviors predicted fall outcomes over time. Stable traits and behavior change were associated with risk, with notable contributions from shifts in extraversion and openness alongside physical activity, alcohol use, and smoking patterns. Study 3 comprised two qualitative investigations conducted in Canada and Nigeria. Both used Interpretive Description with Reflexive Thematic Analysis, guided by the Transactional Model of Stress and Coping. The Canadian study showed that personality shaped cognitive appraisal of risk, emotion regulation, and engagement with formal and informal supports. The Nigerian study found that FOF clustered at specific environmental thresholds and was managed through brief, teachable procedures co-produced with peers and community actors. Taken together, the studies offer a coherent account of how personality and behavior interact with social and environmental contexts to influence falls and fall-related psychological responses. Findings support culturally sensitive, personality-informed approaches that emphasize threshold-specific coaching, meso-level delivery through community channels, and policies that integrate structural with individual determinants to enhance safe, dignified mobility in aging.

CONTRIBUTIONS OF AUTHORS

Adandom, H.C., Nwankwo, H.C., Adandom, I.I., Akinrolie, O., Odole, A.C., Scott, D.R. & Awosoga, O.A. (2024). Exploring the relationship between falls, fall-related psychological concerns, and personality traits in adults: a scoping review protocol. *Health Science Reports*, *7*(2), e1848. https://doi.org/10.1002/hsr2.1848

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Adandom, H.C., Nwankwo, H.C., Adandom, I.I., Akinrolie, O., Odole, A.C., Scott, D.R., Cook, L.L., Shan, G. & Awosoga, O.A. (2025). Personality traits and their association with falls and fall-related psychological concerns in adults aged 50 and older: a scoping review. *Health Science Report* (under review)

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Adandom, H.C., Alumona, C.J., Adandom, I.I., Odole, A.C., Cook, L.L., Shan, G. & Awosoga, O.A. (2025). Personality traits and health behaviors as predictors of fall among community-dwelling older adults: findings from the Canadian Longitudinal

Study on Aging. *Journal of Applied Gerontology*, *0*(0). https://doi.org/10.1177/07334648251328427

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Henrietha Chibuzor Adandom contributed 80% of the paper including study conception, design, interview, qualitative analysis, visualization, manuscript drafting, and critical intellectual revision, and served as the guarantor/corresponding author of the paper. All other authors contributed 20% through the study conception to journal submission.

Adandom, H.C., Kalu, M.E., Adandom, I.I., Odole, AC., Cook, L.L., Shan, G. & Awosoga, O.A. (2025). Fear of falling at everyday thresholds among older Nigerian adults: An interpretive description. *Journal of Black Psychology* (under review).

Henrietha Chibuzor Adandom contributed 80% of the paper including study conception, design, interview, qualitative analysis, visualization, manuscript drafting, and critical intellectual revision, and served as the guarantor/corresponding author of the paper. All other authors contributed 20% through the study conception to journal submission.

ETHICS STATEMENT

The work described in this thesis received research ethics approval from the University of Alberta Research Ethics Board, Edmonton, Alberta, Canada, Jos University Teaching Hospital Health Research Ethics Committee, and University of Abuja Teaching Hospital Health Research Ethics Committee; both in North Central, Nigeria under the following applications:

GRANTING INSTITUTION	TITLE	REFERENCE NUMBER	DATE
University of Alberta Research Ethics Board	Using the personality traits and risk-taking behaviors to explore fall in community-dwelling older adults	Pro00129373	March 15, 2023
University of Alberta Research Ethics Board	Exploring coping strategies and support systems in managing fear of falling among community-dwelling older adults with different personality traits in Southern Alberta: A qualitative study	Pro00134581	September 15, 2023
Jos University Teaching Hospital Health Research Ethics Committee	Exploring coping strategies and support systems in managing fear of falling among community-dwelling older adults with different personality traits in Northern Nigeria: A qualitative study	JUTH/DCS/IREC/127/xxx/503	May 4, 2023
University of Abuja Teaching Hospital Health Research Ethics Committee	Exploring coping strategies and support systems in managing fear of falling among community-dwelling older adults with different personality traits in Northern Nigeria: A qualitative study	UATH/HREC/PR/342	November 14, 2023

USE OF GENERATIVE AI

A Microsoft Word add-in, Grammarly ® was used for grammatical error corrections including sentence rephrasing where applicable.

PREFACE

This research began with a personal understanding of resilience, not just as a topic of study, but as something I have lived through in my academic and personal life. As an international student navigating different cultural landscapes, I have encountered challenges that tested my adaptability and strengthened my resolve. Leaving Nigeria for graduate studies in the United Kingdom and Canada exposed me to diverse aging experiences, deepening my appreciation for how individuals adapt to change. This realization became the foundation of my research on personality and fall-related psychological concerns, examining how personality traits shape fear of falling, fall self-efficacy, and coping strategies among older adults across cultural contexts.

My academic journey began with a degree in Medical Rehabilitation (Physiotherapy) in Nigeria, where I developed an interest in aging and rehabilitation. This passion led me to a master's degree in Gerontology at the University of Southampton, United Kingdom. Studying aging in different sociocultural settings, where Nigeria relies on familial support while the UK and Canada emphasize institutional frameworks, sparked my curiosity about how older adults, particularly in low- and middle-income countries, adapt to fall-related psychological concerns. My research bridges these worlds by integrating psychological, social, and behavioral perspectives on aging.

This thesis employed a multi-method approach to examine the relationships among personality traits and fall-related psychological concerns. The first study, a scoping review, synthesized research on personality and fall-related concerns, highlighting critical gaps in fear of falling, fall self-efficacy, and balance confidence. The second study, a longitudinal analysis of Canadian older adults using the Canadian Longitudinal Study on Aging (CLSA), explored how personality traits and health behaviors predicted fall risk and psychological

responses over time. The third study consisted of two independent qualitative studies: one with older adults in Canada and another in Nigeria. These studies examined how personality traits influence coping strategies and the use of formal and informal systems in relation to fall-related psychological concerns, providing culturally nuanced insights into FOF and adaptation.

The findings from this study extend beyond academia, contributing to global aging policies and initiatives. As populations age, understanding the psychological and behavioral dimensions of falls is essential for designing effective interventions. My research aligns with international efforts such as the World Health Organization's Decade of Healthy Aging and age-friendly initiatives, advocating for policies that support psychological well-being, confidence, and independence among older adults. Recognizing the role of personality in shaping fall-related psychological adaptation provides valuable insights for tailoring interventions to individual psychological profiles and social contexts.

The successful completion of this work was made possible through the support of numerous individuals and organizations. My interest in fall-related psychological concerns among older adults was sparked by the research of Dr. Michael Kalu, while Professor Adesola Odole provided the encouragement I needed to embark on this journey. The guidance of Professor Oluwagbohunmi Awosoga and the collaborative environment of his lab were instrumental in helping me navigate the complexities of a multi-method study. I am also deeply grateful to my colleagues, Dr. Ogochukwu Onyeso, Suha Damag, and Chiedozie Alumona, whose support was invaluable throughout this process. I extend my sincere appreciation to the custodians of the Canadian Longitudinal Study on Aging for granting access to crucial datasets. Additionally, financial support from the University of Lethbridge,

the Edmonton Society of Demographers, and the Prentice Institute played a vital role in facilitating this research.

Despite obstacles such as international travel for data collection and learning new analytical tools, this work strengthened my capacity to conduct multi-site research and deepened my resilience. Completing the thesis broadened my understanding of aging, fall-related psychological concerns, and health inequities, and reinforced the need to address psychological and behavioral factors alongside physical and environmental risks in fall prevention. Future research should establish longitudinal cohorts in Nigeria and other underrepresented regions to track how personality and behavior shape psychological adaptation to falls over time. It should also examine how personality traits interact with support systems, environmental hazards, and fall self-efficacy, and test targeted interventions that tailor delivery to personality while keeping core safety content constant. Evaluating the effectiveness, equity, and implementation of such programs will help translate evidence into practice. Addressing these gaps can support more inclusive systems that protect mobility, dignity, and independence for older adults.

ACKNOWLEDGEMENTS

This thesis represents the culmination of an academic journey made possible through the grace of God and the unwavering support, guidance, and encouragement of many individuals and organizations.

I extend my deepest appreciation to Rob Miyashiro and the Lethbridge Senior Citizens Organization for their support in participant recruitment in Canada. I am also grateful to Ngozi Nwankwo, Ebele Obijiofor, and Ugochukwu Obiezu for their invaluable assistance in recruiting participants in Nigeria, ensuring diverse perspectives in this research. I sincerely appreciate the Canadian Longitudinal Study on Aging for providing access to essential datasets for the secondary data analysis in this research.

I wish to recognize my colleagues Suha Damag, Lee Cochlan, Dr. Ogochukwu Onyeso, and Chiedozie Alumona for their steadfast support and collaboration throughout this academic pursuit. A special acknowledgment goes to my twin sibling, Henry Nwankwo, whose accomplishments have served as a source of inspiration and whose valuable contribution to the scoping review submission strengthened this work.

I am immensely grateful to my supervisory committee, Prof. Oluwagbohunmi Awosoga, Prof. Adesola Odole, Dr. Lisa Cook, and Prof. Gongbing Shan, for their expert guidance, insightful feedback, and continuous encouragement. Their mentorship has been instrumental in shaping the direction and success of this research. I also appreciate the financial support provided by the University of Lethbridge, the Edmonton Society of Demographers, and the Prentice Institute, which facilitated the completion of this work.

To my family and friends, I owe a deep debt of gratitude for their unwavering moral and material support. To my husband, Israel, and our children, your sacrifices, patience, and encouragement have been my greatest source of strength. I extend heartfelt appreciation to

my mother, Ngozi Nwankwo, who traveled from Nigeria to spend five months supporting me during the birth of my son, your love and selflessness mean the world to me. My sincere gratitude also goes to my second mother, Helen Wandera, who has embraced me as her own daughter; your kindness and unwavering support have left a lasting impact on my life.

To everyone who has, in one way or another, encouraged and supported me, Margaret Vuzi, Hannah Odekina, Lee Cochlan, Esther Awosoga, and many others, your belief in me has been a driving force throughout this journey. Finally, I am deeply grateful to all the participants in both the qualitative and quantitative studies. Your willingness to share your experiences has enriched this research immensely, and this thesis is as much a product of your stories as it is of academic inquiry.

To each of you, thank you for being a part of this journey.

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LIST OF ABBREVIATIONS

ADL	Activities of Daily Living
BC	Balance Confidence
BPS	Biopsychosocial Model
BFI	Big Five Inventory
CBF-PI-B	Chinese Big Five Personality Inventory Brief Version
CLSA	Canadian Longitudinal Study on Aging
CR	Critical Realism
EPI	Eysenck Personality Inventory
FES-I	Falls Efficacy Scale International
FFM	Five-Factor Model
FOF	Fear of Falling
FRPC	Fall-Related Psychological Concerns
FSE	Fall-Related Self-Efficacy
HBM	Health Belief Model
IADL	Instrumental Activities of Daily Living
ICF	International Classification of Functioning, Disability, and Health
IPIP	International Personality Item Pool
JBI	Joanna Briggs Institute
MIDI	Midlife Development Inventory
NEO-FFI	NEO Five-Factor Inventory
NEO-PI	NEO Personality Inventory
NEO-PI-R	NEO Personality Inventory-Revised
PCC	Population Concept Context
PRESS	Peer Review Electronic Search Strategies
PRISMA-ScR	Preferred Reporting Items for Systematic Reviews and Meta-Analyses Extension for Scoping Reviews
RTA	Reflexive Thematic Analysis
SOC	Selective Optimization with Compensation
TIPI	Ten-Item Personality Inventory
TMSC	Transactional Model of Stress and Coping
WHO	World Health Organization

CHAPTER 1: INTRODUCTION

"Aging is not merely a passage of time, but a dance between who we are, the risks we face, and the ways we learn to stand tall after each fall. Understanding personality is the key to unlocking why some older adults stumble while others rise stronger."

Falls among older adults are a pressing public health concern and affect approximately one in three individuals over the age of 60 each year (Appeadu & Bordoni, 2023; Public Health Agency of Canada, 2022). Globally and locally, the consequences of falls are significant, ranging from fractures and disability to hospitalization and long-term institutionalization (Choi et al., 2019; Gill et al., 2013; Hoffman et al., 2020). In addition to personal suffering, the financial cost of fall-related healthcare is substantial. For example, in 2018, falls among older adults in Canada resulted in approximately $5.6 billion in healthcare costs (Parachute, 2022). This figure only hints at broader economic burdens borne by individuals, families, and society at large (Dykes et al., 2023; Florence et al., 2018).

Multiple intrinsic and extrinsic factors contribute to fall risk, including muscle weakness, frailty, mobility impairments, chronic illnesses, sensory deficits, and environmental hazards (Appeadu & Bordoni, 2023; Feldman & Chaudhury, 2008; Pighills & Clemson, 2021; Qian et al., 2021; Rubenstein, 2006). While much of the literature has focused on biomedical and environmental contributors, falls are increasingly recognized as a multidimensional issue with psychological consequences (Payette et al., 2016). One of the most common psychological responses to falling is fear of falling, a condition that can exist even in the absence of a prior fall and often leads to activity restriction, decreased confidence, and social isolation (Lee & Tak, 2023; MacKay et al., 2021). This creates a vicious cycle where reduced mobility heightens frailty and increases future fall risk (Yang et al., 2023).

Despite increasing awareness of psychological factors, the role of personality traits in shaping fall-related outcomes has received limited attention (Kloseck et al., 2008). Personality commonly conceptualized using the five-factor model: neuroticism (emotional

instability), conscientiousness, extraversion, openness, and agreeableness, may influence how older adults perceive, respond to, and recover from fall-related experiences (Digman, 1990; McCrae & Costa, 2008). For instance, highly conscientious individuals may exhibit cautious behavior that reduces fall risk, while those low in emotional stability may experience heightened anxiety and poorer coping after a fall (Canada et al., 2020; Kloseck et al., 2007). Given that personality traits are relatively stable yet interact with context and experience (Bleidorn et al., 2021), understanding their influence can provide nuanced insights into fall-related psychological concerns such as fear of falling and fall self-efficacy.

Older adults are not a homogeneous group; they differ in personality, life histories, environmental exposures, and coping resources (Barbaccia et al., 2022; Little, 2014; Weber et al., 2020). Investigating how these individual differences shape fall-related psychological responses is especially relevant for culturally diverse settings such as Canada and Nigeria. However, personality and fall-related psychological concerns remain underexplored in sub-Saharan Africa, and even in North America, research tends to prioritize physical over psychological risk factors. This gap may constrain the development of tailored, person-centered fall prevention strategies that account for individual psychological differences.

In addition to personality, contextual health behaviors such as smoking, alcohol consumption, and physical activity, can influence fall risk. Research has shown that excessive alcohol use or smoking may increase physical vulnerability, while physical activity may enhance confidence and self-efficacy (Qian et al., 2021; Sherrington et al., 2020; Thorin et al., 2016; Van Gameren et al., 2022). While these behaviors are not the core focus of this thesis, they were considered as relevant contextual variables in understanding how personality may interact with lifestyle to shape fall outcomes.

To capture the complexity of these interrelated influences, personality traits, fall-related psychological concerns, and behavioral factors, this thesis employed a multi-method

design. It comprised of three studies: a scoping review of the literature, a secondary analysis of Canadian Longitudinal Study on Aging (CLSA), and two qualitative studies conducted in Canada and Nigeria. This design allowed for both breadth and depth: identifying patterns across populations while unpacking how individual experiences are shaped by cultural and psychological contexts.

1.1 STUDY RATIONALE

Falls among older adults continue to generate significant concern due to their health consequences, psychosocial burden, and associated healthcare costs (Bu et al., 2020; Dykes et al., 2023; Schoene et al., 2019; Zeytinoglu et al., 2021). While physical and environmental risk factors are well-documented (Pighills & Clemson, 2021; Qian et al., 2021), there is a need to broaden the scope of inquiry to include psychological and behavioral influences on fall outcomes. Personality traits, relatively stable psychological characteristics, may shape how individuals perceive, respond to, and cope with falls and fear of falling. Despite their relevance, few studies have examined these relationships in depth, particularly within diverse cultural settings. Existing research tends to focus on predominantly Western, Caucasian populations (Canada et al., 2020; Fan et al., 2024; Kloseck et al., 2007), leaving a gap in understanding how personality and fall-related psychological concerns manifest across different sociocultural environments. While personality itself is not culturally bound, the way it interacts with caregiving norms, health behaviors, and healthcare structures may vary significantly by setting.

Preliminary exploration of the literature revealed limited research on the intersection of personality and falls in Canada (Kloseck et al., 2007), and no peer-reviewed studies in African contexts. Although culture is not used here as a formal unit of analysis, Canada and Nigeria were selected as settings due to their contrasting social, economic, and healthcare systems. In Canada, where institutional supports for aging are more developed, this study

seeks to enhance existing fall prevention strategies by integrating psychological and behavioral insights. In Nigeria, where older adults rely more heavily on familial and community networks, this research explores how personality traits and informal support systems shape coping with falls and fear of falling. By conducting studies in both countries, this thesis contributes context-specific insights into the psychological and behavioral dimensions of fall risk and adaptation in later life. It responds to key evidence gaps and may inform the development of culturally relevant, personality-informed fall prevention strategies.

1.2 STUDY OBJECTIVES

This thesis aims to advance understanding of how personality traits, health behaviors, and psychosocial resources shape fall-related outcomes among community-dwelling older adults. Moving beyond the traditional focus on physical and environmental factors, this study foregrounds the psychological and behavioral dimensions of fall risk across two sociocultural settings: Canada and Nigeria. Specifically, it:

a) Synthesized existing research on the relationships among personality traits, falls, and fall-related psychological concerns, such as fear of falling, fall self-efficacy, and balance confidence, while identifying critical knowledge gaps.
b) Assessed whether personality traits and health behaviors (physical activity, smoking, and alcohol use) predicted fall risk over time using longitudinal cohort data from Canada.
c) Explored how older adults cope with fear of falling in two cultural settings, with a focus on the influence of personality traits on coping strategies and use of formal and informal support systems.

1.3 RESEARCH QUESTIONS

The research was guided by the following questions:

a) What is the scope of the existing literature on the relationship among personality traits and falls or fall-related psychological concerns, and what mediating factors influence these relationships across diverse aging populations?
b) To what extent can personality traits and health behaviors classify fall status among community-dwelling older adults, based on longitudinal data from the CLSA?
c) How do older adults in Canada and Nigeria cope with fear of falling, and in what ways do their coping approaches and support-seeking behaviors reflect their personality traits?

1.4 DEFINITION OF TERMS

Personality Traits

Personality traits are relatively stable patterns of thoughts, emotions, and behaviors that shape how individuals interact with their environment (Digman, 1990; Gerl et al., 2020). This study applied the five-factor model, which includes openness to experience, conscientiousness, extraversion, agreeableness, and neuroticism. In earlier literature this dimension is often referred to as neuroticism (emotional instability), but in line with the Ten Item Personality Inventory (TIPI) used in this study, it is described here as emotional stability/instability (McCrae & Costa, 2008; Gosling et al., 2003). This ensures consistency with the measurement tool while acknowledging prior terminology in the field.

Openness to experience

Openness to experience is a personality trait characterized by curiosity, imagination, and a preference for variety and new experiences (McCrae, 2004).

Conscientiousness

Conscientiousness is a personality trait associated with being organized, responsible, and goal-directed (Digman, 1990).

Extraversion

Extraversion refers to a personality trait characterized by sociability, energy, and assertiveness (Lucas & Diener, 2001).

Agreeableness

Agreeableness is a personality trait associated with being cooperative, empathetic, and trusting (Sheese & Graziano, 2004).

Emotional Stability (inverse of Neuroticism)

Emotional stability is a personality trait that reflects an individual's tendency to remain calm, resilient, and less prone to negative emotional states such as anxiety, fear, or mood swings (Widiger & Oltmanns, 2017). In the Five-Factor Model, it is conceptually the inverse of neuroticism, which historically has been used to describe heightened emotional reactivity and vulnerability to stress (McCrae & Costa, 2008). In this thesis, the term *emotional stability/instability* is used consistently to align with the Ten-Item Personality Inventory (TIPI), while acknowledging that earlier studies and some theoretical models refer to the same construct as *neuroticism*.

Health Behaviors

Health behaviors include lifestyle choices such as physical activity, smoking, and alcohol use that influence health and well-being (Tariq & Gupta, 2022).

Fall

A fall is an event where an individual unintentionally comes to rest on the ground or lower surface, excluding falls caused by major medical events (Lamb et al., 2005).

Fall Risk

Fall risk refers to the likelihood of experiencing a fall, influenced by both intrinsic factors (e.g., physical condition, personality traits, health behaviors) and extrinsic factors (e.g., environmental hazards) (Phelan et al., 2015).

Fall-Related Psychological Concerns

Fall-related psychological concerns (FRPC) is an umbrella term that encompasses the concepts of fear of falling, falls-related self-efficacy, and balance confidence (Payette et al., 2016).

Fear of Falling (FOF)

Fear of falling refers to the persistent anxiety or apprehension about the possibility of falling, which may arise even in those with no prior fall experience (Jung, 2008; Tinetti & Speechley, 1989). Definitions of FOF vary, with some emphasizing its emotional and phobic dimensions, while others describe it as a cognitive concern that influences confidence and perceived self-efficacy in avoiding falls during daily activities (Dewan and MacDermid 2014).

Fall-Related Self-Efficacy (FSE)

Fall-related self-efficacy denotes the confidence one has in their ability to avoid falls during daily life. While FOF captures emotional response, FSE highlights perceived control and capability (Soh et al., 2021; Tinetti et al., 1990).

Balance Confidence (BC)

Balance confidence refers to an individual's perceived ability to maintain their balance during daily activities (Powell & Myers, 1995). It is often inversely related to FOF; as fear increases, confidence typically declines.

Older Adults

In this thesis, “older adults” refers to individuals aged 65 years and older in Canada, consistent with national aging policy definitions such as eligibility for Old Age Security (Government of Canada, 2023; Little, 2014). In Nigeria, older adults are defined as individuals aged 60 years and above, based on national and international criteria (Tanyi et al., 2018; United Nations, 2017).

Community-Dwelling Older Adults

This term describes individuals aged 60 years and older who live independently in private residences, as opposed to institutional settings such as nursing homes or long-term care facilities (Little, 2014; Mah et al., 2021; United Nations High Commissioner for Refugees, 2020).

1.5 STUDY CONTRIBUTION AND SIGNIFICANCE

This thesis was positioned to advance our understanding of the complex relationships among personality traits, falls, FRPC, coping strategies, and support systems among community-dwelling older adults in two distinct settings: Canada and Nigeria. Rather than pursuing direct comparisons or generalizations between the two countries, the research treated each context independently, recognizing the distinct sociocultural, economic, and healthcare environments that shape older adults' fall-related experiences.

In the Canadian context, this study contributed to the literature by using longitudinal quantitative analysis alongside qualitative exploration, each addressing distinct but related questions. The quantitative phase examined how personality traits and health behaviors predicted fall risk over time, while the qualitative phase illuminated how older adults interpret and cope with FOF. These strands were conducted independently, consistent with a multi-method design, but considered together they enrich theoretical and applied understanding of how personality intersects with falls and fall-related concerns in high-income settings.

In Nigeria, this research filled a critical gap by focusing on personality, FOF, coping mechanisms, and support systems, topics that remain underexplored in sub-Saharan Africa. The qualitative investigation sought to provide context-specific perspectives on how cultural, social, and environmental conditions shape older adults' experiences of falls and their coping responses. By situating fall-related adaptation within a context of limited formal fall

prevention infrastructure, this work generated culturally grounded insights relevant to aging populations in the region.

Methodologically, this thesis demonstrated strength through its multi-method design, which combined scoping review, longitudinal analysis, and qualitative inquiry. This design enabled both breadth and depth of understanding while keeping each strand methodologically distinct. Canada and Nigeria were approached as independent but complementary case settings, contributing separate insights while informing broader global discussions on the psychological and cultural dimensions of aging and fall prevention.

Overall, the significance of this research lies in its potential to inform the development of culturally responsive, personality-informed fall prevention strategies. By addressing current gaps in both Canadian and Nigerian contexts, this work offered meaningful direction for future research, policy development, and community-based interventions aimed at enhancing older adults' psychological resilience and functional independence.

1.6 STUDY LIMITATIONS

While this thesis employed a methodologically sound and contextually grounded multi-method design, certain limitations related to data structure and scope should be considered when interpreting the findings.

First, the quantitative analysis was based on secondary data from the CLSA. Although this dataset enabled the examination of personality traits and fall outcomes over time, it was not originally developed with a primary focus on psychological adaptation to falls (Raina et al., 2009). As a result, some constructs, such as culturally specific coping strategies or emotional interpretations of fall risk, were not directly measured. The qualitative studies were conducted separately to address this conceptual gap, offering insight into aspects not captured by the CLSA rather than serving as direct extensions of the quantitative analysis.

Second, no existing longitudinal dataset was identified in Nigeria that included both personality traits and fall-related outcomes. Given this limitation, the Nigerian component of the study employed a qualitative approach to generate context-rich insights. While collection of new cross-sectional quantitative data was considered, the depth and interpretive potential of qualitative inquiry were prioritized to better explore personality-related coping in a setting where this topic remains under-researched. This design choice reflected both the resource constraints typical of doctoral research and the value of thick, culturally embedded data in early-stage theory-building.

Third, all data used in the study, quantitative and qualitative, were self-reported. As with many self-report designs, this introduces the possibility of recall bias, particularly when participants were asked to reflect on fall histories or personality traits (Althubaiti, 2016). Fourth, the qualitative interviews in both Canada and Nigeria were cross-sectional. While they provide rich insight into participants' experiences at a given time, they do not capture how personality, FOF, or coping strategies evolve across repeated fall episodes. Longitudinal qualitative designs could further strengthen understanding of these dynamic processes.

Fifth, while the use of the TIPI across all study components ensured measurement consistency, variation in personality instruments across the broader literature may limit direct comparability with other studies. However, this challenge is common in personality research and was addressed through conceptual alignment rather than strict measurement uniformity (McCrae et al., 2011). Finally, the study focused exclusively on community-dwelling older adults. As such, findings may not be directly applicable to institutionalized populations who may have different fall risk factors, coping responses, or access to support.

Taken together, these limitations reflect common constraints in multi-method doctoral research. Rather than undermining the study's contribution, they clarify the boundaries of

inference and highlight opportunities for future research aimed at expanding and validating these findings across diverse populations and methodological approaches.

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CHAPTER 2: BACKGROUND AND LITERATURE REVIEW

This chapter presents a comprehensive review of the literature on falls and FRPC among older adults, with a particular focus on the roles of personality traits, health behaviors, coping strategies, and social support systems. The chapter is structured into five main sections: (1) conceptual framework; (2) theories and theoretical literature; (3) empirical literature examining the prevalence, consequences, and psychological dimensions of falls; (4) a synthesis of current knowledge gap and how they link to the study's objectives. Drawing from both global and context-specific sources, the chapter highlights how individual, behavioral, and cultural factors intersect to shape fall risk and psychological adaptation in later life.

2.1 CONCEPTUAL FRAMEWORK

This thesis is guided by an integrative conceptual framework that situates falls and FRPC within a web of dynamic, interrelated influences. Central to this framework is the International Classification of Functioning, Disability and Health (ICF) (World Health Organization & World Bank, 2011), which emphasizes that health outcomes result from interactions between body functions and structures, activity and participation, environmental factors, and personal characteristics.

To better capture the psychological dimensions of fall risk and adaptation, the ICF is enriched with constructs from two complementary models: the Health Belief Model (HBM) and the Transactional Model of Stress and Coping (TMSC). The HBM informs how perceived susceptibility, benefits, barriers, and self-efficacy guide health behaviors such as physical activity, alcohol consumption, and smoking. The TMSC, meanwhile, provides a lens for understanding how individuals appraise fall risk and engage in coping responses that shape their psychological adaptation.

Within this framework, personality traits are conceptualized as enduring personal factors that influence both preventive and adaptive responses to fall risk. Traits such as conscientiousness and neuroticism (emotional instability) shape how older adults perceive threats, engage in health-promoting behaviors (Afshar et al., 2015), and mobilize psychological resources. These influences unfold in relation to broader sociocultural and environmental contexts, including support systems, built environments, and cultural norms, that can either buffer or exacerbate fall risk.

Figure 2.1 visually represents the dynamic and interdependent pathways linking personality traits, psychological processes, coping strategies, contextual influences, and fall-related outcomes in older adulthood. At its core, the model identifies three proximal contributors to fall risk and psychological adaptation: personality traits, body functions and structures, and health behaviors. These factors influence how older adults appraise fall risk, experience FOF, and deploy coping mechanisms. The model emphasizes psychological appraisal processes, such as perceived threat, confidence, and emotional reactivity, as critical mediators. These mechanisms determine whether individuals engage in adaptive coping (e.g., support-seeking, activity modification, emotional reframing) or maladaptive coping (e.g., avoidance, hypervigilance, self-isolation) (Karhula et al., 2021).

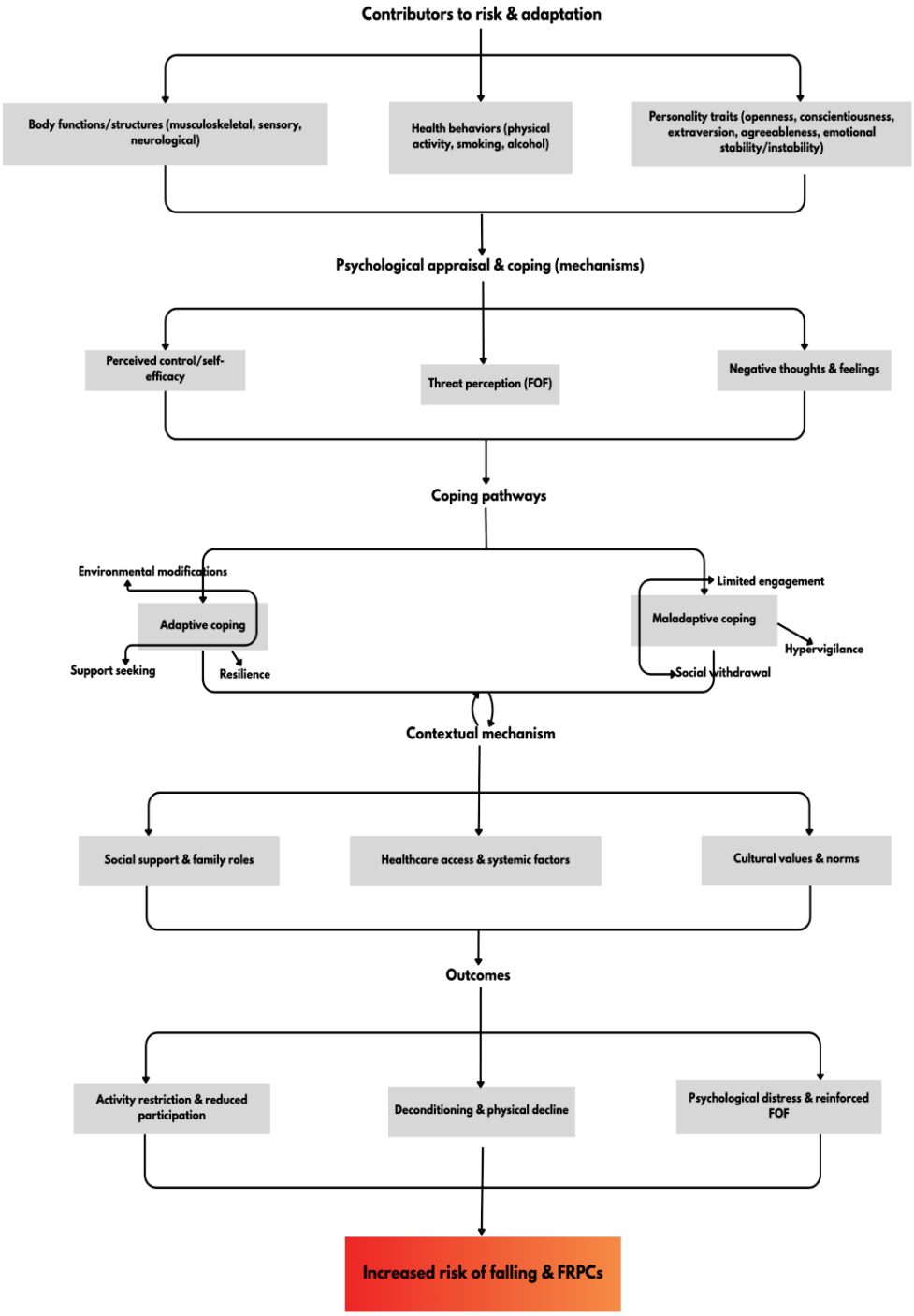

Figure 2.1: Integrative conceptual model of fall risk and psychological adaptation in older adults

The framework also incorporates contextual moderators (e.g., social support, environmental safety, cultural attitudes), which can amplify or buffer the effects of individual

risk factors. Crucially, the model highlights a feedback loop: maladaptive coping reinforces FOF and psychological distress, leading to functional decline and heightened fall risk, whereas successful adaptation preserves autonomy, participation, and resilience.

This integrative framework supports a multi-level, person-centered approach to fall prevention. It underscores the need for interventions that account not only for physical risk factors but also for psychological dispositions and sociocultural contexts that shape how older adults interpret, respond to, and recover from fall-related threats.

2.2 THOERIES AND THEORETICAL LITERAURE REVIEW

Theories of Health and Behavior

Biopsychosocial Model

The Biopsychosocial Model (BPS) (Engel, 1997) served as a foundational lens for this research, particularly guiding the scoping review. This model posits that health outcomes, such as falls and FrPC, emerge from the dynamic interplay of biological, psychological, and social factors. Within this framework, the psychological dimension, particularly personality traits, was emphasized due to its influence on both fall susceptibility and post-fall psychological adaptation (Nicklett et al., 2017). For example, traits such as neuroticism (emotional instability) may heighten emotional vulnerability following a fall, whereas conscientiousness may promote proactive risk management behaviors.

This model aligns conceptually with the WHO's Healthy Ageing framework, which defines healthy ageing as the process of developing and maintaining functional ability in the face of physical and environmental challenges (Rudnicka et al., 2020; World Health Organization, 2020). Falls and FRPC directly threaten this functional ability, but personality traits may act as mediators that shape how older adults interpret and respond to these challenges. The BPS model thus provides a flexible yet integrative framework for understanding how distal (i.e., stable) psychological characteristics (like personality) intersect

with proximal (i.e., modifiable) environmental and physiological factors to influence aging outcomes.

Health Belief Model

The Health Belief Model (HBM) (Alyafei & Easton-Carr, 2025) served as the guiding framework for the quantitative phase of this study, which examined whether personality traits and health behaviors (physical activity, smoking, and alcohol use) predict falls among community-dwelling older adults in Canada. The HBM is a widely applied model in health psychology that emphasizes individual-level cognitive processes in the adoption of health-related behaviors. It posits that engagement in preventive behaviors is shaped by several key constructs: perceived susceptibility to a health threat, perceived severity of the threat, perceived benefits and barriers to action, self-efficacy, and cues to action (Jones et al., 2015).

In this study's conceptualization, personality traits, particularly conscientiousness, are positioned as upstream psychological factors that influence how individuals interpret health threats like falling, and how they respond behaviorally. Conscientious individuals, for example, may be more likely to view falls as serious, recognize the benefits of fall-prevention strategies, and maintain behaviors such as regular physical activity or avoidance of alcohol misuse (Lodi-Smith et al., 2010). These patterns map directly onto HBM components such as perceived severity, perceived benefits, and self-efficacy. Similarly, individuals exhibiting the "healthy neuroticism" profile (i.e., low emotional stability paired with high conscientiousness) are more vigilant and responsive to health risks, resulting in increased engagement in preventive behaviors like walking or structured activity (Stieger et al., 2020). Other traits also align with HBM constructs. Extraversion and agreeableness may enhance responsiveness to social cues or encouragement from peers and health providers (Willroth et al., 2021), while emotional stability may buffer psychological barriers such as fear or fatalism that undermine behavioral consistency. Thus, integrating personality theory into the HBM

enriches our understanding of how stable psychological dispositions shape modifiable health behaviors in relation to fall risk. Figure 2.2 depicts the how the BPS, HBM, and TMSC jointly inform the study's approach to falls and FRPC. Each model contributes a distinct yet overlapping lens on the individual, behavioral, and contextual factors influencing fall risk and adaption.

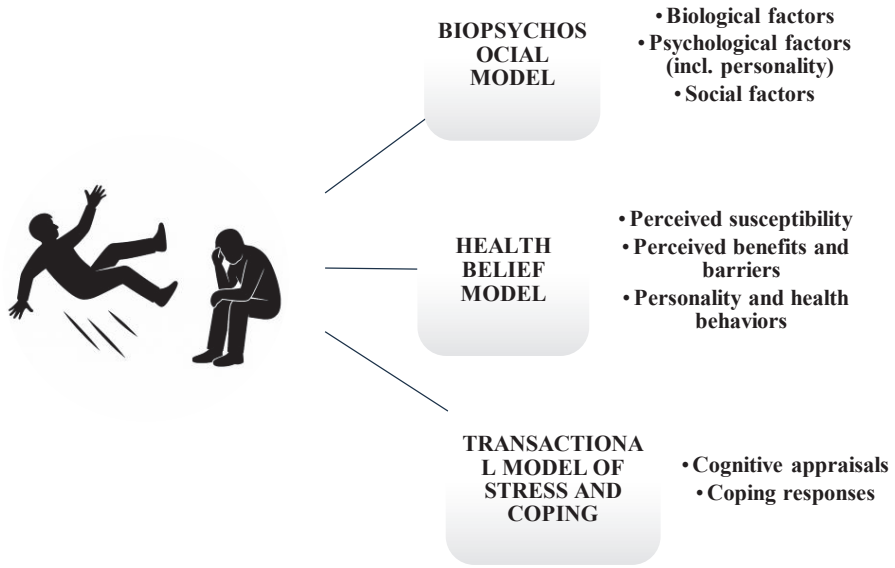

Figure 2.2: Complementary application of theoretical frameworks guiding this study

Transactional Model of Stress and Coping

Lazarus and Folkman's (1984) Transactional Model of Stress and Coping (TMSC) informed the Canadian qualitative study. The TMSC conceptualizes stress as the product of a dynamic interaction between an individual and their environment, where stress arises not merely from the event itself (e.g., a fall or FOF), but from the individual's appraisal of its significance and their perceived ability to cope. This model distinguishes between two core processes: primary appraisal, in which the person evaluates whether the event poses a threat

to their well-being, and secondary appraisal, which assesses available coping resources and options.

In the context of fall-related concerns, the TMSC offers a useful lens for understanding how older adults cognitively and emotionally engage with FOF as a threat to autonomy, mobility, and self-identity. Within this framework, personality traits function as enduring intrapersonal filters, shaping how individuals appraise fall risk and select coping responses. For instance, older adults high in conscientiousness may appraise fall risk as manageable and engage in proactive, problem-focused coping (e.g., home modifications, exercise), while those high in neuroticism (low emotional stability) may perceive fall threats as overwhelming, leading to avoidance or maladaptive emotion-focused coping (e.g., social withdrawal, overdependence).

The TMSC is particularly suited for the Canadian setting, where formal fall prevention programs, health education, and a cultural emphasis on self-management are widely accessible. These contextual affordances interact with individual traits and appraisals to influence coping trajectories. By applying the TMSC, the study attends to the subjective meaning-making processes that underpin coping with FOF, not just the strategies used, but how older adults construct, rationalize, and adapt to fear considering their perceived control, cultural expectations, and identity in later life.

Personality Theory and Trait-Based Models

The five-factor model (FFM) is one of the most empirically validated and widely adopted frameworks in personality psychology. It emerged from decades of lexical and psychometric research aimed at distilling the core dimensions of human personality (McCrae & Costa, 1987, 2008). The origins of the FFM lie in the lexical hypothesis, which posits that the most salient and socially relevant personality traits become encoded in natural language over time (Allport & Odbert, 1936). Building on this idea, early trait theorists like Cattell

(1943) proposed a taxonomy of 16 factors, while later work by Tupes and Christal (1961) identified five recurring dimensions across multiple samples.

The modern FFM was formalized in the 1980s by Costa and McCrae (1985), who demonstrated that five higher-order traits, openness to experience, conscientiousness, extraversion, agreeableness, and neuroticism (emotional instability), consistently emerged across diverse populations and cultures. Their work has since become foundational, offering a unified model for studying stable personality dispositions that shape emotional, cognitive, and behavioral tendencies across the lifespan.

Although the FFM has faced critique for its potential cultural bias and limited explanatory depth in certain contexts (Gurven et al., 2013), its cross-cultural robustness and predictive validity have sustained its prominence in psychological research, including studies on health behaviors, emotional regulation, and risk perception (Allik et al., 2018; Feher & Vernon, 2021).

Measurement and Application in Health Research

A range of validated instruments has been developed to operationalize the FFM dimensions. The NEO Personality Inventory (NEO-PI) and its revised version, the NEO-PI-R, remain the gold standard for comprehensive personality assessment (Costa & McCrae, 1985, 2008). These instruments provide detailed sub-facet scores and have demonstrated high reliability and construct validity across clinical and non-clinical samples (McCrae et al., 2011).

For large-scale surveys and epidemiological studies, short-form measures such as the TIPI (Gosling et al., 2003) and the NEO Five-Factor Inventory (NEO-FFI) (Rosellini & Brown, 2011) offer a pragmatic balance between brevity and psychometric soundness. Other tools include the International Personality Item Pool (IPIP) and the Eysenck Personality Inventory (EPI), which have been used in cross-cultural and comparative studies to explore

links between personality and functional outcomes (Chapman et al., 2013; Ypofanti et al., 2015).

In this study, the TIPI was used to maintain consistency in personality measurement across both the longitudinal and qualitative components. While brief, the TIPI provides acceptable construct validity for population-level inference (Gosling et al., 2003), making it appropriate for a multi-method design that required both consistency and contextual sensitivity. Longitudinal research has shown moderate to high stability of personality traits across the adult lifespan (McCrae et al., 2003; Roberts et al., 2006). This temporal consistency reinforces the appropriateness of using FFM-based assessments in older adult populations, where enduring personality dispositions can meaningfully shape long-term behaviors and psychological responses related to fall risk and adaptation. Although shorter than instruments such as the NEO-PI-R or BFI-44, the TIPI directly operationalizes the same FFM, ensuring conceptual comparability with studies using longer measures. Its consistent use across all phases of this thesis minimized methodological heterogeneity and allowed findings to be interpreted within a cohesive framework.

Relevance to Fall-Related Outcomes

The FFM provides a valuable theoretical foundation for understanding how enduring personality traits shape vulnerability and resilience in the context of aging and falls. For instance, individuals high in neuroticism (low emotional stability) may exhibit greater susceptibility to FOF due to heightened threat sensitivity and emotional dysregulation, whereas those high in conscientiousness are more likely to adopt preventive health behaviors and structured routines that reduce fall risk and enhance coping. Traits such as extraversion and openness may also influence engagement with social support and willingness to participate in novel or community-based fall prevention programs (Fan et al., 2024; Mann et al., 2006).

Summarily, the FFM supports a trait-based perspective on FRPC, emphasizing how personality acts as both a risk and resilience factor in later life. Its integration into fall prevention research could facilitate the design of individualized, personality-informed interventions that address not only physical risk but also the psychological and behavioral processes that underlie fall vulnerability in older adulthood.

Psychological Adaptation and Aging

Aging involves both normative and non-normative challenges, such as functional decline, chronic illness, and vulnerability to falls, that require not only physical adjustment but also psychological work to maintain a sense of self, agency, and control. These models provide essential scaffolding for understanding FRPC particularly when interpreted through the lens of personality and sociocultural context. One widely recognized model is Baltes and Baltes's (1990) Selective Optimization with Compensation (SOC) model, which posits that successful aging involves three interrelated strategies: selection (prioritizing goals), optimization (maximizing remaining strengths), and compensation (using alternatives to offset losses). In the context of falls and FRPC, older adults may select safer environments, optimize balance through physical activity, or compensate with assistive devices. These behaviors reflect not only physical responses, but also psychological strategies aimed at preserving autonomy and self-worth (Freund & Baltes, 2002; Schaefer et al., 2013). Personality traits influence this process; for example, conscientiousness may support the strategic use of SOC behaviors, while neuroticism (emotional instability) may hinder adaptive coping.

Psychosocial adaptation theory offers another relevant lens, viewing adaptation as a dynamic, multidimensional response to perceived threats, including changing identity, social roles, and loss of control (Livneh & Antonak, 2005). FOF represents not only a fear of injury but also a disruption to perceived competence and self-concept. Individuals high in openness

may respond with cognitive reframing, while those emotionally unstable may experience heightened anxiety or disengagement. Moreover, the TMSC discussed in earlier sections complements these frameworks. TMSC emphasizes cognitive appraisal as central to psychological adaptation: how older adults interpret fall-related events (either as threatening or manageable) shapes their emotional response and coping strategy. Personality traits may influence both appraisal and behavior, reinforcing their role in adaptation.

Across all three models, a consistent theme emerges: adaptation in later life is not merely behavioral but also deeply psychological. It involves reconciling vulnerability with agency, preserving identity amid change, and managing how one is perceived within a social context. These adaptive responses are shaped by relatively stable personality traits, which research suggest remains consistent into older adulthood (McCrae & Costa, 2008).

Sociocultural and Contextual Factors

Aging and Falls in Canada

Canada's aging population is growing rapidly, with adults aged 65 and older comprising 17.2% of the population in 2018 and projected to reach nearly 25% by 2035 (Mihailidis & Muscedere, 2023; Statistics Canada, 2019). This demographic shift is accompanied by increasing cultural diversity among older adults, many of whom are first-generation immigrants with varied beliefs about health, aging, and autonomy (Carrière et al., 2016; National Advisory Council on Aging, 2005).

Fall-related concerns in Canada are framed within a broader Western healthcare narrative that emphasizes individual autonomy, self-regulation, and preventive action (Kitayama et al., 2020; Sherwin & Winsby, 2011; Van Exel et al., 2015). As such, FOF and related psychological outcomes are often embedded within biomedical and rehabilitative discourses that prioritize physical independence and engagement with formal health systems. National fall prevention strategies, led by public health institutions, promote structured

interventions, physical activity, and home safety modifications as pathways to maintaining autonomy (Gilmour, 2012; Public Health Agency of Canada, 2006).

This individualist orientation also influences coping preferences: older adults are encouraged to take proactive, self-directed steps to manage fall risk and fear, often through behavior change, environmental adaptation, or seeking professional support. However, this approach may not fully resonate with all older adults, particularly those from collectivist or immigrant backgrounds, who may prefer relational or communal modes of coping. As such, while Canadian systems offer structured support, cultural responsiveness remains essential to ensure fall prevention and psychological care are inclusive and effective across diverse older populations.

Aging and Falls in Nigeria

Although Nigeria's population is predominantly young, the number of adults aged 60 and older is expected to rise dramatically, reaching an estimated 33 million by 2050 (He, 2022; Mbam et al., 2022). Currently, this age group constitutes approximately 3% of the total population (World Bank, 2023). Unlike Canada's institutional model of aging, Nigeria's approach is rooted in communal caregiving systems and a collectivist worldview, which emphasize intergenerational responsibility, respect for elders, and familial reciprocity (Animasahun & Chapman, 2017; Salami & Okunade, 2020; Tanyi et al., 2018).

In this cultural context, falls and FRPC are typically interpreted not as preventable biomedical risks but as inevitable life events or spiritual occurrences. Explanatory models often invoke fate, aging, or divine will, which may reduce attention to fall prevention and instead focus on post-fall coping and spiritual reconciliation (Atoyebi et al., 2021; Chonody & Teater, 2018). Spirituality is deeply embedded in coping practices: some older adults regard falls or FOF as spiritual signals, prompting actions such as prayer, fasting, or traditional healing (Chonody & Teater, 2018).

Coping is frequently relational and faith-based, facilitated by close-knit family systems. Adult children often take the lead in health decision-making and caregiving, reflecting long-standing cultural norms of role-based duty and reciprocal care (Evans, 2010; Ezulike et al., 2024). In this setting, personality traits may be enacted less through individual traits like autonomy or proactivity and more through social expectations, such as being dependable, spiritually anchored, or family oriented.

As shown in Table 2.1, the literature illustrates that Canadian approaches to falls emphasize autonomy and individual responsibility, while Nigerian responses are shaped by familial, communal, and spiritual frameworks. These contextual distinctions reinforce the rationale for examining each country as a distinct sociocultural case rather than as directly comparable settings (Chapman et al., 2014). This approach aligns with global calls for culturally grounded frameworks to better understand and address fall-related outcomes in diverse aging populations (Stevens et al., 2018).

Table 2.1

Cultural variations in the meaning, coping, and support systems related to falls and **FRPC**

Factor	Canada	Nigeria
Cultural orientation	Individualist	Collectivist
Primary support systems	Healthcare + community programs	Family + informal networks
Falls prevention approach	Proactive, autonomy-centered	Reactive, family-managed
Meaning of falls	Preventable health risk	Natural part of aging, spiritual sign
Personality expression	Through autonomy and self-direction	Through social roles and relational expectations
Coping strategies	Self-management, professional advice-seeking	Family reliance, spirituality, cultural narratives

Methodological Trends in Personality and Falls Research

Empirical research on personality and fall-related outcomes has historically relied on cross-sectional, quantitative studies conducted in high-income Western contexts (Canada et al., 2020; Fan et al., 2024; Kloseck et al., 2007; Turunen et al., 2022). These designs often limit insight into how personality traits dynamically interact with behavior and context over time. Qualitative studies, when present, do not explicitly engage personality trait frameworks, resulting in narratives that are often detached from established trait theory (Adandom et al., 2024). Few studies triangulate methods to capture both generalizable trends and lived experiences. This methodological narrowing restricts the development of tailored, culturally responsive prevention strategies. A more integrated, multi-method approach is therefore needed to bridge this gap, an approach that this thesis adopts across its three study phases.

2.3 EMPIRICAL LITERATURE REVIEW

Epidemiology of Falls

Falls remain a significant public health concern for older adults worldwide, contributing to substantial morbidity, mortality, and healthcare burden. According to the World Health Organization, approximately 28–35% of adults aged 65 years and older experience at least one fall annually, with this risk rising to 32–42% among those over 70 years of age (World Health Organization, 2007). In Canada, national surveillance data suggest that nearly one in three older adults falls each year, with falls constituting over 85% of injury-related hospitalizations among this population (Public Health Agency of Canada, 2014). Risk is disproportionately higher among older women, individuals living alone, and those with multimorbidity, including arthritis, cognitive impairment, or visual deficits (Appeadu & Bordoni, 2023; Tam, 2020).

In Sub-Saharan Africa, including Nigeria, falls are increasingly recognized as a critical issue for aging populations, though systematic surveillance remains limited (Sawe et

al., 2023). Meta-analytic findings estimate the prevalence of falls among older adults in Africa to range from 13% to over 30%, with notable variation by region, setting (urban vs rural), and assessment methodology (Addai-Dansoh et al., 2022). In Nigeria, local studies suggest that fall rates are particularly high in urban communities, where rapid demographic aging intersects with infrastructural deficits (Abdulraheem, 2020; Atoyebi et al., 2021; Bekibele & Gureje, 2010). For example, Atoyebi and colleagues reported a fall prevalence of 40.3% in an urban Nigerian community, while a more conservative estimate comes from Abdulraheem (2020), who's large, population-based study in Ilorin found a 24.2% prevalence of falls among older adults, with higher rates in women (25.2%) compared to men (18.6%). Earlier foundational research by Bekibele and Gureje (2010) reported a similar overall prevalence (23%) among older Nigerians, also noting similar gender differences: 25% in women versus 21% in men. This consistency across studies suggests a stable but under-acknowledged burden of falls in urban Nigerian populations.

Compounding the epidemiological challenge is the region's limited post-fall infrastructure. Multicenter registry data from neighboring Malawi and Tanzania show that fall-related injuries are frequently managed in emergency departments, reflecting the absence of community-based prevention and rehabilitation pathways (Sawe et al., 2023). Moreover, cultural beliefs that frame falls as an inevitable consequence of aging contribute to underreporting and low intervention uptake (Oppong-Yeboah et al., 2024). Despite contextual variations, falls consistently trigger functional decline, increased dependence, and reduced quality of life among older adults. As the global aging trend intersects with constrained healthcare systems in countries like Nigeria, locally tailored fall prevention strategies that address both risk and sociocultural context are urgently needed.

Biomechanical and Sensorimotor Risk Factors

In addition to epidemiological patterns, empirical studies consistently demonstrate that age-related biomechanical and sensorimotor decline substantially contributes to fall risk among older adults. With advancing age, declines in muscle mass, strength, and flexibility impair postural control and coordination, leading to mobility limitations and instability (Keller & Engelhardt, 2013; Larsson et al., 2019). Structural changes in the skeletal system, including bone loss, cartilage degeneration, and intervertebral disc deterioration, further exacerbate postural instability and predispose older adults to fall-related injuries such as fractures (Loeser, 2010; Roberts et al., 2016). Hormonal changes accelerate osteoporosis, particularly in postmenopausal women, intensifying vulnerability to injurious falls (Cheng et al., 2022; Golds et al., 2017; Sipilä et al., 2020). These musculoskeletal declines are closely associated with slower reaction times and reduced mobility, both of which are empirically linked to higher rates of falls and subsequent injury (Azzolino et al., 2021).

Empirical findings also highlight the role of sensory systems in maintaining balance and preventing falls. Visual decline, including impaired acuity, reduced contrast sensitivity, and slower pupillary responses, has been shown to hinder hazard detection and navigation, thereby elevating fall risk (Kahiel et al., 2021; Lin, 2012; Saftari & Kwon, 2018; Salvi et al., 2006). Age-related vestibular changes, such as loss of vestibular hair cells and impaired vestibulo-ocular reflex function, lead to dizziness, spatial disorientation, and poor postural control, especially in older adults with comorbid sensory deficits (Baloh et al., 2006; Barin & Dodson, 2011; Iwasaki & Yamasoba, 2015; Zalewski, 2015). Somatosensory decline, including reduced joint position sense and diminished tactile sensitivity, further slows compensatory responses to imbalance and increases the likelihood of falls during complex or unexpected movements (Gaerlan, 2010).

Overall, the literature indicates that deficits in these systems rarely occur in isolation. Rather, cumulative impairments across musculoskeletal, visual, vestibular, and proprioceptive domains sharply elevate the risk of recurrent falls (Rubenstein, 2006). By situating these mechanisms within an empirical framework, research underscores the multifactorial nature of falls in later life. While this thesis emphasizes the psychological and behavioral dimensions, recognition of biomechanical and sensorimotor factors ensures a more comprehensive understanding of fall risk and highlights the interdisciplinary context in which psychological adaptation occurs.

Consequences of Falling

Falls among older adults frequently result in significant injuries, including fractures, head trauma, and soft tissue damage (Berg et al., 1992; Sawe et al., 2023; Vaishya & Vaish, 2020). Hip fractures are particularly severe, often leading to long-term disability, reduced independence, and elevated mortality, especially within the first year post-injury (Amarilla-Donoso et al., 2020; Dyer et al., 2016). Even seemingly mild head injuries have been linked to accelerated cognitive decline and a greater risk of recurrent falls (Lee et al., 2023; Thompson et al., 2006). While soft tissue injuries may appear less severe, they can still restrict mobility, prolong rehabilitation, and diminish confidence in daily activities (Rosen et al., 2020).

The economic burden of fall-related injuries is also considerable. Direct healthcare costs include emergency services, hospitalization, surgery, rehabilitation, and long-term care (Florence et al., 2018; Leggett et al., 2018; Stevens et al., 2006). Indirect costs emerge through increased reliance on informal caregiving, occupational losses among caregivers, and early transitions to institutional care (Schulz & Eden, 2023; Van Damme et al., 2020). These outcomes reflect not only personal and familial burdens but also systemic pressures on healthcare and social support infrastructure.

Psychological Consequences

Falls have profound psychological repercussions for older adults. Among the most salient are FOF, FSE, and BC. These three constructs are distinct but interdependent, and they often contribute to a self-perpetuating cycle of psychological and physical decline (Jørstad et al., 2005; Landers et al., 2016). FOF is commonly reported after a fall and, notably, can occur even in individuals who have never experienced a fall (Whitmore et al., 2024). It is linked to activity restriction, social withdrawal, and loss of independence, all of which compound frailty and elevate fall risk (Denkinger et al., 2015; Schoene et al., 2019). High FSE is associated with physical activity and psychological resilience, while low FSE predicts avoidance behavior, diminished mobility, and increased fall vulnerability (Dattilo et al., 2014; Soh et al., 2021). Similarly, reduced BC discourages physical activity, promotes sedentary behavior, and increase isolation, factors that further exacerbate fall risk (Hewston & Deshpande, 2018; Landers et al., 2016).

These interlinked psychological constructs, FOF, BC, and FSE, contribute to what scholars have described as a psychological cycle of falls (Peeters et al., 2020). In this cycle, an initial fall or even perceived risk of falling heightens FOF, which in turn erodes BC and FSE. This erosion leads to activity avoidance and subsequent physical deconditioning, both of which elevate future fall risk. This increase in risk can culminate in another fall, reinforcing the cycle (Jefferis et al., 2014; Peeters et al., 2020; Udell et al., 2019).

Figure 2.3 depicts how psychological mechanisms interact with behavioral and physical outcomes to perpetuate vulnerability. Breaking this loop requires more than environmental or biomechanical interventions; psychological and behavioral interventions, particularly those aimed at improving FSE, reframing maladaptive beliefs, and building psychological resilience, are essential. More importantly, individual personality traits shape how older adults interpret and respond to falls. For example, neuroticism (emotional

instability) may intensify perceived threat and lead to maladaptive coping, while conscientiousness supports problem-solving and recovery-oriented behaviors. This personality-informed lens could enable a more layered understanding of fall prevention, one that aligns physical risk reduction with psychological readiness and adaptation.

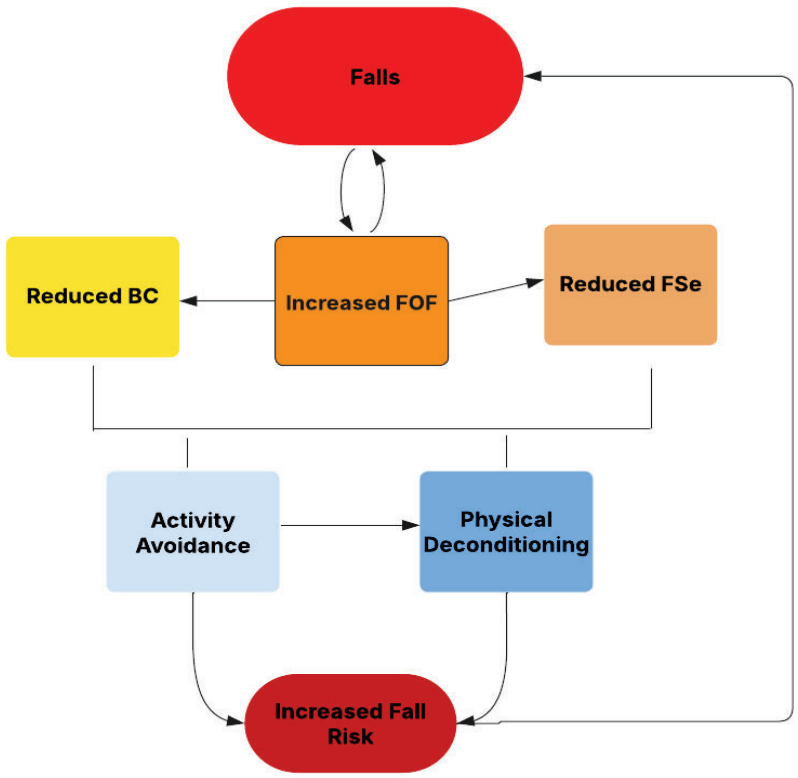

Figure 2.3: Psychological cycle linking FOF to increased fall risk

Personality and FRPC

Empirical studies increasingly highlight the association between personality traits and FRPC in later life. For instance, Mann et al. (2006), in a cross-sectional study of community-dwelling women over 70, found that higher neuroticism (lower emotional stability) scores were significantly associated with greater FOF. Similarly, Hajek and König (2021), using data from the Survey of Health, Aging, and Retirement in Europe (SHARE), confirmed that

neuroticism (emotional instability) predicted both FOF and fall incidence, even after adjusting for sociodemographic and health variables. In contrast, conscientiousness has emerged as a protective trait, with Bogg and Roberts (2004) reporting, in a meta-analysis, that conscientious individuals are more likely to engage in health-promoting behaviors, including fall prevention strategies, that enhance psychological resilience and functional independence.

More recent work, such as that by Fan et al. (2024), offers a mediation model linking personality traits, subjective age, and concerns about falling among older Chinese adults. Their findings suggest that subjective perceptions of age may partially explain why traits like conscientiousness and emotional stability protect against FRPC. However, most of these studies rely on cross-sectional data, limiting causal inference. Moreover, findings often vary depending on how FRPC is operationalized (e.g., FOF vs. FSE), the instruments used (e.g., TIPI vs. NEO), and the cultural context in which the study was conducted.

In addition to neuroticism (emotional instability) and conscientiousness, emerging evidence points to nuanced roles for extraversion and openness. For instance, Turunen et al. (2022) found that older adults high in extraversion reported greater FSE, potentially due to increased social interaction and confidence in navigating environments. Openness, though less consistently studied, has been associated with a willingness to engage in novel physical or cognitive activities, which may buffer against FRPC (Raya et al., 2023). However, the strength and consistency of these associations vary across studies and populations, reflecting heterogeneity in sample characteristics, cultural factors, and measurement tools.

Preliminary findings from the scoping review conducted as part of this thesis echo these trends, with neuroticism (emotional instability) most consistently linked to FOF and fall incidence, and conscientiousness aligned with protective behavioral responses. Yet, many studies treat personality traits as fixed predictors, without exploring how they interact with

environmental demands, cultural beliefs, or health system contexts. Moreover, the literature lacks longitudinal and culturally diverse studies that assess how these traits influence fall-related experiences over time.

Health Behaviors as Risk Factors and Pathways

Health behaviors, such as physical activity, smoking, and alcohol consumption, are well-established determinants of chronic disease and fall risk among older adults (Steyn & Damasceno, 2006; Tariq & Gupta, 2022). These behaviors are important not only because they directly influence physical health outcomes but also because they may mediate the relationship between personality traits and fall-related outcomes. For instance, individuals high in conscientiousness are more likely to engage in structured, preventive routines such as regular exercise and moderate alcohol use, which contribute to improved physical function, balance, and fall prevention (Bogg & Roberts, 2004). In contrast, neuroticism (emotional instability) has been associated with health-compromising behaviors like physical inactivity and smoking, which in turn elevate fall risk (Sutin et al., 2013).

Longitudinal studies support the independent role of lifestyle factors in fall risk prediction. For example, Faulkner et al. (2009) found that behaviors such as physical inactivity and alcohol misuse predicted falls even after adjusting for biomedical factors. Gale et al. (2016) found the risk of falls to be higher in men who quit smoking. However, longitudinal studies that examine personality traits and health behaviors in tandem as predictors of fall susceptibility remain scarce, a gap that informed the second phase of this thesis.

Health behaviors also shape psychological responses to fall experiences. For example, physical inactivity has been linked to reduced FSE and heightened FOF, creating a feedback loop of functional decline and emotional distress (Jefferis et al., 2014; Jepson et al., 2010; Rippe, 2018). In contrast, regular engagement in exercise and balance training has been

shown to enhance balance confidence and psychological resilience in older adults (Papalia et al., 2020; Pfeiffer et al., 2020; Sherrington et al., 2020).

Despite theoretical frameworks emphasizing the interplay between personality and health behavior (Ferguson, 2013), most empirical studies continue to assess these variables independently. The few studies that integrate both domains often rely on cross-sectional designs or fail to model their joint influence over time (Canada et al., 2020; Haapanen et al., 2024). Furthermore, while certain traits like openness and extraversion may foster engagement with novel or group-based physical activity, this dynamic remains underexplored in fall-related literature.

This fragmentation limits our understanding of how personality traits translate into health behaviors that influence fall risk and adaptation. More integrated models, particularly those that draw on longitudinal data, are needed to explore these relationships as dynamic and contextually embedded. Such research would inform the development of person-centered, personality-informed fall prevention strategies that account for behavioral variability across aging populations.

Coping and Support Systems

Empirical studies highlight that older adults adopt a range of cognitive, emotional, and behavioral strategies to manage FOF, which are broadly categorized as problem-focused or emotion-focused (Jordan et al., 2016; Lazarus & Folkman, 1984). Problem-focused coping typically involves taking direct action to reduce fall risk, such as modifying home environments, engaging in structured fall prevention programs, or consulting health professionals. For example, in a Cochrane review, Gillespie et al. (2012) found that multi-component interventions targeting home safety and exercise significantly reduced falls among community-dwelling older adults. Similarly, a randomized trial in New Zealand demonstrated that home modifications reduced fall-related injuries, especially in high-risk

older adults, defined in the study as individuals with a history of previous falls, mobility limitations, or living in environments with hazardous housing conditions (Keall et al., 2021).

Emotion-focused coping aims to manage the distress associated with fall risk. Qualitative and intervention studies have identified several commonly used strategies among older adults, including participation in Tai Chi (Hosseini et al., 2018), engagement in spiritual practices, and reframing of fall-related experiences through social support (Baker & Berenbaum, 2007). While these approaches may offer short-term emotional relief, avoidance-based strategies, such as limiting physical activity out of fear, can paradoxically increase long-term fall risk by contributing to deconditioning and social isolation (Papalia et al., 2020).

Personality traits influence not only which coping strategies are adopted but also their effectiveness. In a mixed-methods study, Strutz et al. (2023) reported that older adults high in conscientiousness engaged more frequently in proactive coping and health-seeking, while those high in neuroticism (low emotional stability) were prone to emotional withdrawal and avoidance. These personality-driven patterns have implications for psychological adaptation following a fall and may predict long-term outcomes, such as the persistence of FOF or recovery of balance confidence.

Coping is also culturally shaped. In Canada, coping strategies often emphasize self-management and individual autonomy, reflecting a system that promotes personal responsibility for health and facilitates access to structured prevention programs (Malik et al., 2020; Registered Nurses' Association of Ontario, 2017). By contrast, in Nigeria, studies show that coping tends to be collective, relational, and spiritual, shaped by intergenerational support, faith practices, and culturally rooted understandings of aging and vulnerability (Akinrolie et al., 2020; Ezulike et al., 2024). However, few empirical studies have directly

compared these approaches or investigated how cultural norms shape the perceived acceptability and outcomes of coping strategies in diverse populations.

Formal and Informal Support Structures

Empirical research consistently demonstrates that support systems, both formal and informal, play a crucial role in shaping how older adults manage fall risk and FOF (Okoye et al., 2022; Petersen et al., 2020; Siefkas et al., 2022). These systems offer emotional, instrumental, and informational support that buffer psychological distress and promote adaptive coping. Formal support structures are especially prominent in high-income countries like Canada, where healthcare providers, community-based fall prevention programs, and geriatric rehabilitation services are accessible through structured systems. For example, organizations like Parachute (2024) and the Registered Nurses' Association of Ontario (2017) recommend evidence-based interventions such as mobility training, environmental modifications, and psychological support for older adults at risk of falling. These interventions not only address physical risk factors but also promote confidence, activity engagement, and self-efficacy (Malik et al., 2020).

By contrast, older adults in lower-resource settings such as Nigeria often rely more heavily on informal support systems. Empirical studies such as Akinrolie et al. (2020) and Ezulike et al. (2024), have shown that family members, particularly adult children, serve as primary sources of physical assistance, emotional reassurance, and decision-making support in managing health concerns. In these contexts, institutional fall prevention services are often unavailable or inaccessible, leading older adults to turn to religious leaders, spiritual healers, and traditional community networks for guidance (Arokoyo et al., 2024). Moreover, cultural narratives about aging, as a natural or fate-driven process, often frame falls as spiritually or morally significant, influencing how individuals seek and interpret support.

Emerging evidence suggests that the interaction between support systems and personality traits is also important in shaping fall-related outcomes. For instance, extraverted individuals are more likely to seek and benefit from social interaction and community programs, whereas those high in neuroticism (low emotional stability) may experience greater psychological vulnerability and be less inclined to access available support (Cukrowicz et al., 2008; Pfund & Allemand, 2024). The presence of strong social ties has been associated with reduced FOF and greater mobility confidence. In a scoping review, MacKay et al. (2021) found that older adults with strong social networks were more likely to remain active and report lower levels of fear. Similarly, longitudinal studies have linked social support to increased physical activity and better psychological outcomes (Smith et al., 2023).

Similarly, social isolation is a well-documented risk factor for both fall incidence and persistent FOF. Quach and Burr (2021) demonstrated that depression and low perceived support mediate the relationship between social disconnectedness and reduced activity levels. Likewise, Zeytinoglu et al. (2021) found that loneliness was independently associated with higher fall risk and lower likelihood of adopting preventive behaviors. These findings underscore the importance of not only the presence of support systems, but also their perceived adequacy and accessibility.

In summary, formal and informal support systems serve as proximal mechanisms through which cultural norms and personality traits influence coping and adaptation to fall-related concerns. Formal systems are more prominent in Western contexts, while informal, relational networks dominate in many non-Western settings. Understanding the interplay between support systems, personality dispositions, and sociocultural context is essential for designing fall prevention strategies that are both context-sensitive and person-centered.

2.4 SUMMARY OF GAPS AND LINK TO STUDY DESIGN

Despite growing attention to the psychological dimensions of fall risk, current research remains primarily focused on physical and environmental determinants, with less emphasis on the role of individual psychological and behavioral factors such as personality traits and health behaviors. FRPC (e.g., FOF, FSE) are often treated in isolation from broader psychosocial contexts. While theoretical models posit that personality influences both health behaviors and psychological adaptation to falls, empirical studies rarely examine these variables in an integrated or dynamic way. Most treat personality and behavior as independent constructs, overlooking their interaction over time or their combined effect on fall-related outcomes.

Although health behaviors, such as physical activity, alcohol use, and smoking, are well-documented predictors of fall risk, they are seldom embedded within personality-informed frameworks. Only a limited number of studies adopt longitudinal designs capable of exploring how stable personality traits and modifiable behaviors evolve and interact over time. This leaves gaps in understanding the temporal and mechanistic pathways that connect personality, behavior, and fall risk or adaptation.

A further limitation involves methodological homogeneity. Most existing research relies on cross-sectional, Western-centered, and exclusively quantitative or qualitative methods. Few adopt multi-method approaches that capture both generalizable patterns and culturally situated, experiential insights. This methodological narrowness restricts the field's ability to generate context-sensitive, psychologically informed fall prevention strategies.

This thesis addresses these limitations through a multi-method design consisting of (1) a scoping review to synthesize current evidence and map conceptual and methodological gaps; (2) a longitudinal analysis using the CLSA to examine how personality traits and health behaviors predict fall risk over time; and (3) qualitative studies in Canada and Nigeria to

explore how personality shapes coping and support-seeking responses to FOF within distinct cultural contexts. By integrating these approaches, the study contributes both breadth and depth, empirically modeling risk pathways while capturing how older adults make sense of and adapt to falls and its related concerns.

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CHAPTER 3: OVERVIEW OF METHODS

This thesis adopted a multi-method design comprising a scoping review, a longitudinal secondary data analysis, and two independent qualitative studies. Each method was aligned with a specific research objective, allowing for a comprehensive examination of the relationships among personality traits, falls, FRPC, coping strategies, and support systems among community-dwelling older adults in Canada and Nigeria. This multi-method approach is distinct from a mixed-methods design in that each method addresses a separate research question rather than integrating datasets to answer a single question (Morse, 2003).

3.1 PHILOSOPHICAL UNDERPINNINGS AND PARADIGM

This study is anchored in critical realism (CR), which provides the ontological and epistemological foundation for examining falls and FRPC. CR assumes that falls are real events with objective consequences in the material world, while also recognizing that the meanings, coping responses, and psychological adaptations associated with these falls are socially and culturally constructed (Sayer, 2000; Willis, 2022). This depth ontology, distinguishing the empirical (what is experienced), the actual (what occurs), and the real (underlying generative mechanisms), guided both the design and interpretation of this research.

From this foundation, the study employed methodological pluralism, consistent with CR's emphasis on identifying causal mechanisms rather than settling for surface associations (Miller et al., 2008; Willis, 2022). Each phase was designed to access a different stratum of reality. The scoping review (phase 1), operated within a post-positivist lens, mapping empirical patterns in the literature and clarifying where mechanisms (e.g., personality's role in FOF, fall self-efficacy, and balance confidence) remained underexplored. Phase 2 used statistical modeling to detect demi-regularities, recurring associations between personality,

health behaviors, and falls, as potential indicators of underlying causal mechanisms. This aligns with CR's generative view of causality, where patterns point to deeper processes rather than mere correlation (Willis, 2022). Qualitative studies (phase 3) employed interpretive description, an interpretivist-constructivist approach that attends to meaning-making and practice relevance (Burns et al., 2022; Thorne, 2016). This allowed exploration of how personality traits, cultural context, and relational dynamics shape coping with FOF. The double hermeneutic (participants making sense of fear, researchers interpreting that sense-making) reflects CR's layered ontology, connecting lived experience with explanatory depth.

By situating each phase within CR's philosophical framework, the study advanced from describing associations to probing the mechanisms through which personality traits interact with social, cultural, and behavioral contexts to shape fall risk and adaptation. Importantly, the use of both quantitative and qualitative approaches was not a pragmatic "mix," but a theoretically grounded multi-method strategy to illuminate complementary dimensions of reality. CR thus provided coherence to bridge statistical regularities with lived experiences, ensuring that the study addressed both measurable risk factors and the interpretive processes through which older adults understand and respond to falls and FOF (Burns et al., 2022). Figure 3.1 illustrates the overarching philosophical underpinnings guiding each phase of the research

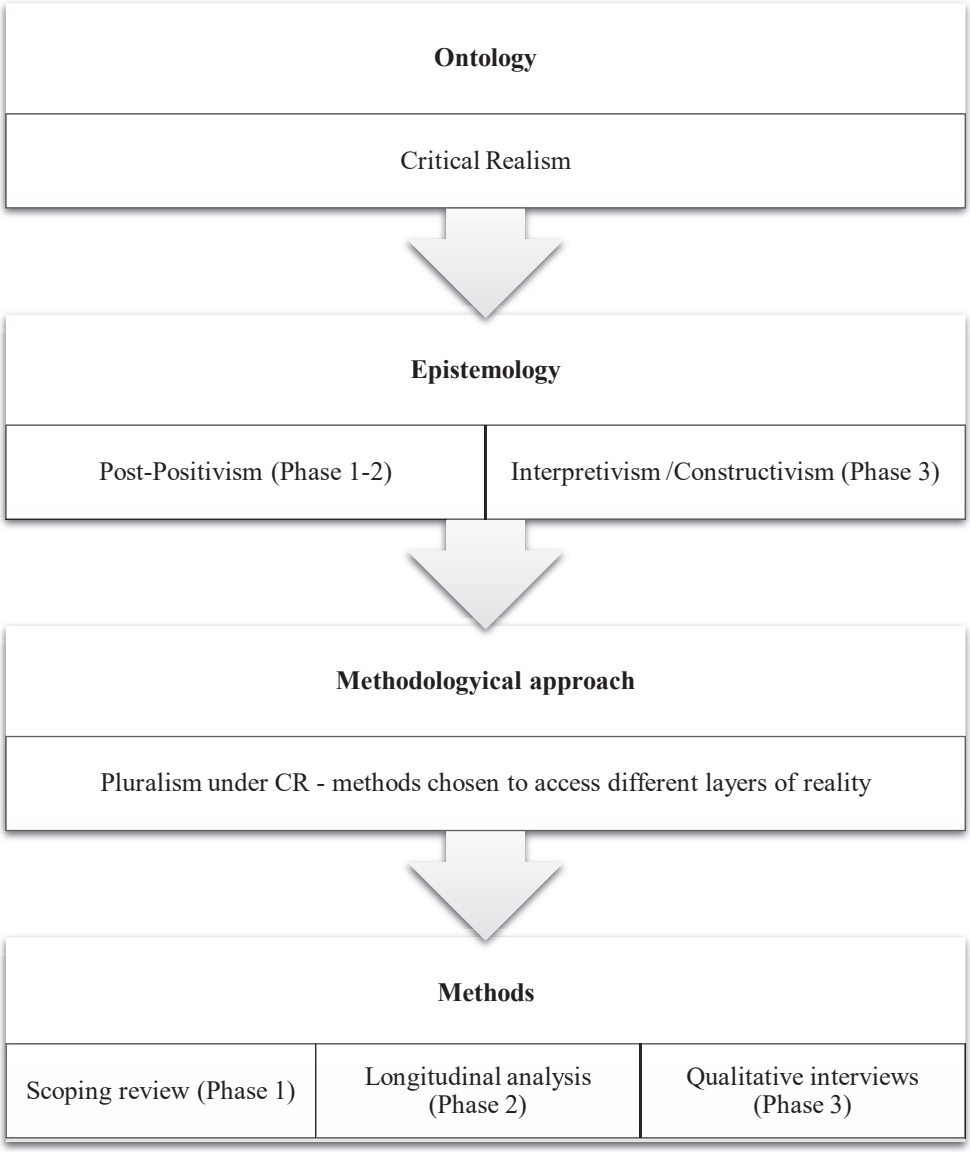

Figure 3.1: Philosophical positioning across study phases

3.2 RATIONALE FOR MULTI-METHOD APPROACH

A single method could not fully capture the multi-dimensional, culturally nuanced factors underlying personality, falls, and FRPC. Specifically, the scoping review was necessary to establish the state of knowledge and gaps. The secondary data analysis leveraged existing longitudinal data (CLSA) to quantify relationships over time in Canada but could not capture cultural meanings or subjective coping. The qualitative study was essential to explore how older adults in culturally distinct settings (Canada and Nigeria) made sense of and coped with falls and FOF, especially since no comparable Nigerian dataset exists.

This plural design follows critical realism's depth logic: Phase 1 mapped empirical patterns and gaps; Phase 2 tested temporal associations (demi-regularities); Phase 3 developed explanatory accounts of the mechanisms through which personality and context shape adaptation. The program is multi-method rather than mixed methods; each phase stands alone epistemically while contributing complementary insights under a shared critical realist ontology.

The qualitative component was essential in Nigeria, where cultural framing of falls, family roles in caregiving, and infrastructural conditions shape FRPC in distinct ways (Ezulike et al., 2024), and where national longitudinal datasets linking personality and fall outcomes are not yet available. In Canada, qualitative inquiry generated practice-relevant explanations for how personality informs appraisals, coping, and support-seeking within a Western healthcare system. By sequencing these methods, this study provides a multi-level, culturally responsive understanding of falls, personality, and psychological adaptation, bridging knowledge gaps in both high-income and lower-middle-income settings.

Scoping Review (Chapters 4-5)

The first phase of this study was a scoping review designed to systematically map existing literature on the relationship among personality traits, falls, and FRPC, including

FOF, FSE, and BC, among community-dwelling older adults. This phase aligned with objective 1 (synthesize current evidence and identify gaps). The review followed the methodological framework proposed by Arksey and O'Malley (2005) and was reported in accordance with the PRISMA-ScR checklist (Tricco et al., 2018). Studies were included if they examined validated measures of personality traits in relation to falls or FRPC among community-dwelling older adults, using either quantitative or qualitative designs. The scope and inclusion criteria were intentionally broad to capture conceptual, methodological, and geographical trends relevant to the broader thesis focus. Findings from Phase 1 informed hypotheses and variable selection for Phase 2 and sensitizing concepts for Phase 3.

Secondary Data Analysis (Chapter 6)

The second phase involved secondary data analysis of CLSA baseline and follow-up data to address objective 2: do personality traits and health behaviors (physical activity, smoking, alcohol use) predict fall risk over time among community-dwelling older adults in Canada? The CLSA's large, nationally representative cohort enabled modeling of temporal associations between personality/behaviors and subsequent falls (Raina et al., 2009). Analyses included descriptive statistics, bivariate tests, and multivariable logistic regression to estimate individual and combined contributions of predictors. This phase identified temporal demi-regularities consistent with critical realism, recurring patterns suggestive of underlying mechanisms, while acknowledging that quantitative associations alone do not explain meaning-making or contextual enactment.

Qualitative Study (Chapters 7-8)

The third phase of this study involved qualitative interviews with community-dwelling older adults in Canada and Nigeria. This phase aligned with objective 3: to explore how older adults cope with FOF across different cultural settings, with a specific focus on how personality traits influence coping strategies and the use of formal and informal support

systems. Two independent qualitative studies were conducted, both guided by interpretive description (Thorne, 2016), using reflexive thematic analysis (Braun & Clarke, 2019) to generate practice-relevant explanations of FOF appraisal and coping in their respective contexts (Canada; Nigeria). Interpretive description's flexible, clinical logic enabled attention to variation linked to personality traits while remaining grounded in participants' accounts and care realities.

Semi-structured interviews were conducted with community-dwelling older adults aged 65+ (Canada) and 60+ (Nigeria) → aged 60+ to 84 years (setting-specific eligibility reported in Chapters 7–8). To support cross-phase comparability, participants completed the TIPI, mirroring the CLSA measure, while preserving the analytic independence of each study. Phase 3 illuminated mechanisms, such as perceived control, identity protection, and social scaffolding, through which personality and context shaped how FOF was appraised and managed, especially salient in Nigeria where formal fall-prevention infrastructure is limited.

Phases 1–3 progressed from mapping "what is known," to testing "when and for whom" risks emerge, to explaining "why and how" older adults interpret and adapt, yielding a coherent, critical-realist account that justifies personality-informed and context-responsive prevention.

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CHAPTER 4: MANUSCRIPT ONE

Exploring the relationship between falls, fall-related psychological concerns, and personality traits in adults: a scoping review protocol

Citation:

Adandom, H. C., Nwankwo, H. C., Adandom, I. I., Akinrolie, O., Odole, A. C., Scott, D. R., & Awosoga, O. A. (2024). Exploring the relationship between falls, fall-related psychological concerns, and personality traits in adults: A scoping Review Protocol. Health Science Reports, 7(2), e1848. https://doi.org/10.1002/hsr2.1848

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4.1 ABSTRACT

Background and Aims: Personality traits, such as neuroticism (emotional instability) and extraversion, are emerging as important predictors of falls. Despite their significance, existing fall prevention programs often overlook these traits, creating a notable research gap. This study aims to conduct a comprehensive scoping review to explore the existing literature on the relationships among personality traits, falls, and fall-related psychological concerns.

Method: This scoping review will adhere to the framework established by Arksey and O'Malley, incorporating extensions recommended by the Joanna Briggs Institute (JBI) and using the PRISMA-ScR checklist. A thorough search strategy will be employed, aligning with the population, concept, and context (PCC) selection criteria. Electronic databases, including MEDLINE, APA PsycINFO, Web of Science, CINAHL, and SPORTDiscus, will be searched from their inception to the present. Additionally, a manual search of the reference lists of identified and relevant full-text articles will be conducted. Two independent reviewers will screen titles and abstracts, perform full-text reviews, and extract data from pertinent articles.

Discussion: Personality traits are increasingly recognized as influential predictors of falls and related psychological concerns. This review aims to make a substantial contribution to the existing literature by being the first to comprehensively explore and provide a descriptive synthesis of the relationship among personality traits and falls, as well as fall-related psychological concerns in adults. It is hoped that the outcomes of this review would enhance our comprehension of the role of personality traits in falls, potentially informing future research and strategies for this critical area of study.

Scoping Review Registration: This scoping review was registered with the Open Science Framework (OSF). Here is the link: https://doi.org/10.17605/OSF.IO/KR74X.

4.2 INTRODUCTION

Falls are responsible for most unintentional fatal and nonfatal injuries in adults (Bergen et al., 2016; Billette & Janz, 2015). Falls have a significant impact on both the economy and the healthcare sector due to a loss of functional independence and increased utilization of healthcare resources among vulnerable individuals (Ambrose et al., 2013; Florence et al., 2018; World Health Organization, 2021). Factors such as frailty, muscle weakness, mobility problems, neurological impairments, and chronic conditions increase the risk of falling (Jepsen et al., 2022; Mielenz et al., 2017; Xue, 2011). Fall-related psychological concerns (FRPC) is an umbrella term that encompasses the concepts of fear of falling (FOF), lack of fall self-efficacy (FSE), and lack of balance confidence (BC) (Hughes et al., 2015; Moore & Ellis, 2008; Payette et al., 2016). These psychological concerns contribute to the risk of falling leading to decreased mobility, physical deconditioning, social isolation, anxiety, depression, and reduced quality of life (Payette et al., 2016; Pearson et al., 2014; Schoene et al., 2019). Research exploring physical and psychological risk factors associated with falls (Byun et al., 2021; Gale et al., 2018; Hughes et al., 2015; MacKay et al., 2021) shows that physical factors may not fully explain why psychological concerns like FOF persist, as some individuals experience FOF even when they have not fallen before (Chen et al., 2021; Hughes et al., 2015; Schoene et al., 2019). One possible explanation for these differences in psychological concerns could be individual differences in personality.

The five major personality traits- neuroticism (emotional instability), extraversion, conscientiousness, agreeableness, and openness - have been identified as key factors in predicting individual risk-taking behaviour and falls (Digman, 1990; Kloseck et al., 2007, 2008; Stephan et al., 2017). Neuroticism is characterized by emotional instability, anxiety, and self-doubt (Digman, 1990; Kloseck et al., 2008). Those who score low in emotional stability may be more prone to fear, anxiety, and worry, leading to an increased fear of falling (Mann et

al., 2006). Extraversion is an individual's level of sociability and assertiveness (Digman, 1990; Kloseck et al., 2008). Those with high extraversion scores tend to be more energetic, which may increase their likelihood of participating in social activities and physical tasks that carry a higher risk of falling (Kloseck et al., 2007). Conscientiousness relates to an individual's level of organization, responsibility, and self-discipline (Digman, 1990; Kloseck et al., 2008). High conscientiousness scores are associated with more careful, cautious, and diligent behaviour, potentially reducing the risk of falling (Canada et al., 2020; Joseph & Zhang, 2021; Rolison et al., 2014). Agreeableness reflects an individual's level of kindness, empathy, and cooperativeness (Digman, 1990; Kloseck et al., 2008). Those with high scores in agreeableness may prioritize the needs of others over their own safety, potentially increasing their risk of falling (Joseph & Zhang, 2021; Kloseck et al., 2008; Rolison et al., 2014). Openness represents an individual's willingness to embrace new ideas, experiences, and ways of thinking (Digman, 1990; Kloseck et al., 2008). Individuals with high scores in openness to experience may be more likely to engage in risky behaviours, potentially increasing their risk of falling (Joseph & Zhang, 2021; Rolison et al., 2014).

Risk-taking behaviour of individuals is unique and often influenced by their physical abilities and immediate environment. For example, stepping on a stool to hang a picture may be low risk for someone with good lower limb strength and balance but high risk for someone with poor lower limb strength and balance (Feldman & Chaudhury, 2008). While the relationship between the five major personality traits and frailty has been investigated in a previous review (Hajek et al., 2021), no studies have explored the connection between personality traits and falls or FRPC. A preliminary search of PROSPERO, MEDLINE, the Cochrane Database of Systematic Reviews, and JBI Evidence Synthesis revealed no existing scoping reviews or systematic reviews on this topic, indicating a research gap. Considering the evolving knowledge base and potential methodological variations, a scoping review

methodology is deemed appropriate to address this gap. Thus, this study aims to provide an overview of the relationships between personality and falls or FRPC in adults.

4.3 METHODS AND MATERIALS

Review Registration and Approach

This scoping review will follow Arksey and O'Malley's five-stage methodological framework (Arksey & O'Malley, 2005) and the JBI's extensions to this framework (Joanna Briggs Institute, 2015; Munn et al., 2018; Tricco et al., 2018). The protocol for the scoping review includes identifying the research question, identifying relevant studies and search strategy, study selection, charting the data, and collating, summarizing, and reporting the results. This protocol was registered with the open science framework (https://doi.org/10.17605/OSF.IO/KR74X).

Stage 1: Identifying the Research Question

Research questions were developed based on existing literature that links personality to falls and physical activity (Canada et al., 2020; Kloseck et al., 2007; Stephan et al., 2017; Sutin et al., 2016). A previous review only examined the relationship between personality and frailty (Hajek et al., 2021); hence further investigation is necessary to understand the relationship between falls, FRPC, and personality. The research questions are:

1. What is the current state of knowledge on the relationship between personality and falls or FRPC?
2. What are the key factors that mediate or moderate the relationship between personality and falls or FRPC, and how do these vary across different populations and settings?

Stage 2: Identifying Relevant Studies and Search Strategy

The PCC (population-concept-context) framework, an adaptation of the PICO (population-intervention-comparator-outcome) framework used in systematic review search

strategies, was utilized to develop the inclusion criteria for this scoping review, in accordance with JBI's recommendations (Peters et al., 2020).

Population/Type of Participants

Individuals aged 18 years and older who have completed personality assessments.

Concept

Investigating the relationship between personality and falls or fall-related psychological concerns (FRPC).

Context

Studies conducted in various settings, such as community, hospitals, rehabilitation centres, or nursing homes.

Inclusion Criteria

In this review, studies will be included if they meet specific criteria. Firstly, the studies must investigate the relationship between personality and falls or fall-related psychological concerns (FRPC). Secondly, the participants involved should be adults aged 18 years and older who have completed assessments of personality. Thirdly, the studies should be empirical and published in peer-reviewed journals, with no restriction on the setting in which the research was conducted. Both quantitative and mixed-method research designs will be considered, and studies published in the English language will be included. Additionally, relevant grey literature will be considered in line with the research questions.

On the other hand, certain studies will be excluded from this review. Specifically, studies focusing on psychological conditions or disorders unrelated to FRPC will not be included. Studies that solely employ qualitative research designs without any quantitative component will also be excluded. Furthermore, studies primarily focused on the development or validation of measurement scales or instruments, without exploring the relationship between personality and falls or FRPC, will not be considered. Finally, studies published in languages

other than English will be excluded from this review due to time constraints and limited language skills (Nussbaumer-Streit et al., 2020).

Search Strategy

A health sciences librarian (DS) will conduct searches in MEDLINE, APA PsycINFO, Web of Science, CINAHL, and SPORTDiscus. These databases were chosen to align with the study's emphasis on personality and health aspects of falls (Beyer & Wright, 2013), as they index a wide range of content, including health research and psychology specialization. Although duplicates may occur, they will be addressed through deduplication. Additionally, manual reference list searches will be conducted to supplement the search for grey literature (Beyer & Wright, 2013; Bramer et al., 2017).

The search terms were determined through collaborative discussions between the lead researcher and the librarian, along with a comprehensive examination of preliminary search outcomes encompassing titles and subject headings. Additionally, a thorough evaluation of titles and abstracts from five initial articles chosen by the lead researcher aided in this process. The search strategy also drew insights from search strings utilized in prior published reviews (Akbari et al., 2023; Clemson et al., 2023; Hajek et al., 2021; Kendrick et al., 2014) and underwent refinements based on feedback from another librarian who conducted an independent assessment using the PRESS checklist (McGowan et al., 2016). The initial search string was formulated for MEDLINE on April 28, 2023 (as illustrated in Table 1), and it will be adjusted accordingly for the remaining four databases, adhering to review guidelines (Joanna Briggs Institute, 2015).

When possible, subject headings from controlled vocabularies (e.g., MeSH) were used in the search. To increase sensitivity, concepts were also entered in the search string as keywords, with truncation (e.g., personalit*), and proximity operators (e.g., adj5) used when

appropriate. Boolean operators connected subject headings and keywords. No limits were placed on publication date, though results were limited to work written in English.

Stage 3: Study Selection

The records will be managed using an online systematic review manager such as Covidence and reference management software like EndNote. After duplicates have been removed, two reviewers (IA and HA) will individually screen the titles and abstracts of the retrieved articles and exclude any that do not meet the inclusion criteria. If it is unclear from the title and abstract whether an article meets the criteria for inclusion or not, it will proceed to the next stage of full-text screening. In the subsequent step, two reviewers (OA and HN) will independently screen the full-text articles to ensure uniform application of the inclusion criteria. Any conflicts that arise during the screening process will be resolved by a third member of the research team (Peters et al., 2020).

Stage 4: Charting the Data

The research team will meet and develop the data form which captures relevant information to the research questions (Joanna Briggs Institute, 2015). The following information will be extracted: population, concept, and context (PCC) information, citation details, study approach/methodology, key results, a summary of key findings, study limitations, and identified knowledge gaps. All authors will contribute to the interpretation of the information extracted, and any modifications to the charting forms or process will be detailed in the full scoping review.

Stage 5: Collating, Summarizing, and Reporting the Results

Descriptive presentations in the form of figures, tables, and text will be used to report the results of the scoping review. A flow diagram will be used to present the results of the database searches and screening process (Joanna Briggs Institute, 2015). A summary of the process will be provided in the text. The characteristics of all included studies will be described

in a table format and presented using textual data. Additionally, the main findings will be presented for each research question using a descriptive synthesis approach to highlight study limitations, knowledge gaps, and areas for future research relevant to the scoping review topic. A completed PRISMA-ScR checklist is included as supporting information (see Appendix A).

4.4 DISCUSSION

Understanding the role of personality in falls and FRPC is essential for developing effective fall prevention strategies and interventions. Personality, including factors such as neuroticism (emotional instability) and extraversion, have been identified as important predictors of behaviours associated with falls. However, the integration of personality into current fall prevention programs is often limited, creating a research gap in this area. The scoping review aims to provide a comprehensive examination of the existing literature, mapping out the relationship between personality and falls, as well as FRPC in adults. By conducting this review, the authors seek to identify research gaps and generate a foundation for further inquiry and understanding of how personality influence falls and related psychological concerns. The findings of this review have the potential to inform the development of personalized fall prevention strategies that consider individual differences in personality, ultimately improving outcomes and reducing fall risk in adults. As per scoping review guidelines, critical appraisals will not be performed on eligible studies (Peters et al., 2020), but a summary of their strengths and limitations will be reported in the discussion. Ethics approval is not required for this scoping review.

4.5 CONCLUSION

The proposed scoping review will provide a valuable contribution to the existing literature by being the first to explore and present a descriptive synthesis of the relationship between personality, falls, and FRPC in adults. The results of the review can prompt future systematic reviews and meta-analyses that can uncover connections and clarify mechanisms.

The completed scoping review will be submitted for publication in a scientific, peer-reviewed journal and will be presented at relevant conferences to inform future research studies.

Authors Contributions

Henrietha Adandom: Conceptualization (lead); writing – original draft (lead); writing – review and editing (equal); Methodology – search strategy (supporting). Henry Nwankwo: Writing – review and editing (equal). David Scott: Methodology – search strategy (lead); writing – review and editing (equal); Israel Adandom: Writing – review and editing (equal). Olayinka Akinrolie: Writing – review and editing (equal). Adesola Odole: Supervision (supporting); Writing – review and editing (equal). Oluwagbohunmi Awosoga: Supervision (lead); Writing – review and editing (equal).

Acknowledgement

Henrietha Adandom acknowledges her supervisory committee members affiliated with the University of Lethbridge for their guidance and commitment to the project.

Conflict of Interest Statement

The authors declare no conflict of interest.

Funding

The authors declare that no funding is available for this study.

Ethical Considerations

We acknowledge the importance of upholding ethical principles related to data usage, copyright compliance, and data privacy. We are committed to appropriately attributing sources, respecting copyright laws, and safeguarding data privacy. Even in the absence of direct involvement with human subjects, we will maintain transparency and ethical conduct in our research practices.

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CHAPTER 5: MANUSCRIPT TWO

Under review at Health Science Report (HSR)

Personality traits and their association with falls and fall-related psychological concerns in adults aged 50 and older: a scoping review

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Running Title: Personality Traits and Their Association with Falls and Fall-Related Psychological Concerns in Adults Aged 50 and Older

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5.1 ABSTRACT

Background and aims

Falls remain a major health challenge in aging, yet little is known about how personality traits influence falls risk and related psychological outcomes. This scoping review mapped existing evidence on relationships among personality traits, falls, fear of falling (FOF), and fall self-efficacy (FSE) in older adults to identify key associations and research gaps.

Methods

A comprehensive search of five databases (MEDLINE, APA PsycINFO, Web of Science, CINAHL, SPORTDiscus) was conducted from inception through December 2024. Eligible studies examined personality traits, assessed with validated instruments, in relation to falls, FOF, or FSE in older adults (≥50 years). All empirical designs were included. Data extraction followed PRISMA-ScR guidance, and findings were synthesized descriptively.

Results

Of 8,060 records screened, eight studies met inclusion criteria (three longitudinal, five cross-sectional). Low emotional stability (high neuroticism) and low conscientiousness were the most consistently associated with greater fall risk and higher FOF. Extraversion showed generally protective associations with FOF, while Type A behavior predicted higher fall incidence among men but not women. Openness and agreeableness showed no consistent patterns. Evidence on FSE was limited to one study, and none addressed balance confidence. Measurement heterogeneity across personality and fall-related constructs constrained synthesis.

Conclusion

Personality traits, particularly emotional instability and conscientiousness, appear relevant to fall risk and psychological concerns, though evidence remains sparse. Key gaps include limited work on FSE and balance confidence, under-representation of clinical populations,

and inconsistent measurement approaches. Future studies should use standardized instruments, longitudinal designs, and broader personality frameworks to inform personalised fall prevention strategies.

Scoping review registration: Open Science Framework (OSF).

https://doi.org/10.17605/OSF.IO/KR74X.

Keywords: “Personality;” “Five-Factor Model;” “Accidental Falls;” “Self-efficacy.”

Key Points

- Neuroticism (emotional instability) and conscientiousness are consistently linked to fall risk and fear of falling in older adults.
- Extraversion shows a generally protective association with fear of falling, though evidence remains limited in scope.
- Standardized personality and fall-related assessments are needed to guide personality-informed fall-prevention interventions.

5.2 INTRODUCTION

Falls among older adults pose significant health and economic challenges, contributing to injuries, reduced mobility, and increased healthcare costs (Ambrose et al., 2013; Florence et al., 2018; World Health Organization, 2021). Decades of research have identified a wide range of intrinsic and extrinsic risk factors, including frailty, multimorbidity, and environmental hazards (Jepsen et al., 2022; Joseph & Zhang, 2021; Mielenz et al., 2017; Rolison et al., 2014; Xue, 2011). Recent biomechanical research further demonstrates that factors such as fall direction, impact velocity, and protective responses influence the likelihood and severity of injury (Traverso et al., 2024), underscoring that falls are multidimensional events shaped by interacting biological, psychological, and environmental factors.

Alongside physical and mechanical dimensions, psychological concerns play an important role in fall risk and recovery. Fear of falling (FOF) and low fall self-efficacy (FSE) are well-established predictors of restricted mobility, loss of confidence, and recurrent falls (Byun et al., 2021; Hughes et al., 2015; Schoene et al., 2019). However, psychological concerns do not fully explain why some older adults develop intense fear or avoidance behaviors without prior falls, while others remain confident and active even after experiencing falls. This variation suggests that deeper, individual-level characteristics, such as personality traits, may influence how older adults perceive, interpret, and respond to fall-related events (Kloseck et al., 2008).

Falls are increasingly recognized understood as a multifactorial phenomenon shaped by biological, psychological, social, and biomechanical factors. The Biopsychosocial Model (Engel, 1997) provides a useful framework for understanding these complex interactions. Within this model, personality traits may act as a filter that shapes fall-related perceptions and behaviors. For example, higher neuroticism, characterized by emotional instability and

anxiety, has been associated with greater fall-risk and heightened FOF (Canada et al., 2020; Mann et al., 2006). Conversely, higher conscientiousness, reflecting self-discipline and cautious behavior, has been linked to lower fall risk (Canada et al., 2020; Joseph & Zhang, 2021). Other traits, such as extraversion and agreeableness, may influence activity levels, social engagement, and risk-taking behavior, indirectly affecting fall risk (Kloseck et al., 2007; Rolison et al., 2014).

Despite these emerging insights, research on personality and falls remains fragmented. Most fall prevention approaches prioritize physical and biomechanical risk factors, with limited attention to personality-driven variability in fall outcomes. No existing reviews have systematically synthesized evidence on the interplay among personality traits, falls, and fall-related psychological concerns. This represents an important gap, as understanding these relationships could explain why individuals with similar biomechanical or health profiles respond differently after a fall and could inform more personalized prevention strategies.

To address this gap, this present scoping review synthesizes available evidence on the relationships among personality traits, falls, and fall-related psychological concerns in older adults. Specifically, it asks: a) What is the current understanding of the relationship among personality traits and falls or fall-related psychological outcomes? and b) What mediating factors influence this relationship across diverse populations and environments? By mapping the state of knowledge, this review highlights personality as an underexplored determinant of fall risk and adaptation, offering new insights for clinicians, researchers, and policymakers seeking to design multidimensional and tailored fall prevention strategies.

5.3 METHODS AND MATERIALS

Protocol and Registration

The methodology adhered to Arksey and O'Malley's five-stage framework and incorporated methodological extensions by the Joanna Briggs Institute (JBI) (Arksey & O'Malley, 2005; Joanna Briggs Institute, 2015). Reporting was guided by the Preferred Reporting Items for Systematic Reviews and Meta-Analyses extension for Scoping Reviews (PRISMA-ScR) checklist (Appendix B) (Munn et al., 2018; Tricco et al., 2018). The protocol was registered on the open science framework and has been published (Adandom et al., 2024).

Eligibility Criteria

Studies were eligible if they were published in English from database inception through December 2024 and examined the relationship between personality traits and falls or fall-related psychological concerns (FOF, FSE, or BC) in older adults, consistent with how this population was defined within the included studies. Across the evidence base, the youngest participants were aged 50 years (e.g., SHARE dataset), so the findings reflect populations aged 50 and older. Both community-dwelling and hospitalized populations were considered. All empirical study designs were eligible, including cross-sectional, longitudinal, and mixed methods approaches, provided personality traits were assessed with a validated psychological measure.

Studies were excluded if they (a) focused exclusively on psychological conditions or disorders unrelated to falls or FRPC (e.g., depression without reference to falls or FOF); (b) investigated functional outcomes (e.g., ADL/IADL limitations, homebound status) without assessing falls or FRPC; (c) were conceptual or theoretical papers without empirical data; (d) were conference abstracts not available as full-text; or (e) were not available in English. Although searches were conducted from database inception (1945) through December 2024,

the earliest eligible study identified and included was published in 2004, as no earlier publications met the eligibility criteria. Similarly, no eligible mixed-methods or qualitative-only studies that examined personality in relation to falls or FRPC were identified during screening.

Information Sources and Search

A health sciences librarian (DS) conducted the initial search on June 30, 2023, across five databases: MEDLINE, APA PsycINFO, Web of Science, CINAHL, and SPORTDiscus, selected for their comprehensive coverage of health, psychology, and falls research (Beyer & Wright, 2013), Manual reference list checks of included studies were also completed to capture additional records (Bramer et al., 2017).

The search strategy combined controlled vocabulary (e.g., MeSH terms such as "Personality" and "Accidental Falls") with free-text keywords (e.g., "Big Five," "fear of falling," "self-efficacy," "concerns about falling") to maximize retrieval. Additional terms related to frailty and aging were incorporated to enhance sensitivity, which broadened retrieval substantially. However, many records identified through these expanded terms were later excluded at the full-text stage because they examined related constructs (e.g., depression or anxiety) without assessing personality in relation to falls or FRPC.

The inclusion criteria were deliberately broad to capture any empirical study, quantitative or qualitative, that examined associations between validated personality measures and falls or fall-related psychological concerns. The relatively small number of eligible studies therefore reflects a genuine scarcity of research directly integrating personality and fall outcomes rather than restrictive methodological parameters.

Search strings were adapted from prior reviews (Akbari et al., 2023; Clemson et al., 2023; Hajek et al., 2021; Kendrick et al., 2014) and independently peer-reviewed using the

PRESS checklist (McGowan et al., 2016). Figure 5.2 presents the full electronic search strategy for MEDLINE, with detailed strategies for other databases in Appendix B.

Figure 1. MEDLINE Search Strategy

1. exp Personality/ [MeSH]
2. (personalit* or extraver* or extrover* or introver* or agreeab* or conscientious* or neuroti* or openness).tw.
3. (emotion* adj5 stab*).tw.
4. ("big five" or "five factor").tw.
5. or/1-4
6. Accidental Falls/ [MeSH]
7. Frailty/ [MeSH]
8. Frail Elderly/ [MeSH]
9. falls or faller* or frail*).tw.
10. ((fear* or fright* or afraid or concern* or efficacy) adj5 fall*).tw.
11. (ptophob*).tw.
12. (balanc* adj5 confiden*).tw.
13. or/6-12
14. 5 and 13
15. limit 14 to English

Note. MeSH = medical subject heading; exp = used with a MeSH term to include all narrower MeSH terms; .tw. = field codes for text word; adj# = search for records with terms within # words of each other; quotation marks (e.g., "five factor") indicate a phrase search; * after keyword indicates truncation (e.g., fall* will retrieve "fall", "falls", "falling", etc.

Figure 5.1: MEDLINE search strategy

Selection of Source of Evidence

Records were imported into EndNote, where duplicates were removed manually and electronically. Deduplicated records were uploaded into Covidence (https://www.covidence.org) for screening. Two reviewers (IA and HA) independently screened titles and abstracts. Conflicts were resolved through discussion. Full-text screening was conducted independently by two reviewers (OA and HA), with disagreements adjudicated by a third reviewer (HN). Reasons for exclusion at the full-text stage (n = 14) are provided as supplementary file (see Appendix C)

Data Charting Process

The data extraction process was overseen by the lead author (HA), with a second author (IA) independently verifying 100% of extracted data for accuracy. The standardized charting form captured: (a) study details (author, year, country); (b) population characteristics (sample size, demographics); (c) study methodology (design, setting, measures of personality, falls, and FRPC); and (d) key findings (associations between personality and falls/FOF/FSE). Discrepancies were resolved by consensus.

Data Items

Primary outcomes were falls and fall-related psychological concerns, including FOF and FSE, informed by prior conceptual work (Payette et al., 2016). Table 5.1 defines all extracted variables.

Synthesis of Results

The findings were synthesized using two complementary approaches: (a) a descriptive numerical analysis to map the distribution of studies by geographical location, study design, and outcomes examined; and (b) a narrative summary to collate key findings. The narrative synthesis focused on two aspects: (i) the relationship between personality traits and falls or fall-related psychological concerns, and (ii) factors that mediated these relationships.

Table 5.1

Definitions of key constructs examined in included studies

Outcomes/variables	Description
Falls	A fall is an event that results in a person coming to rest unintentionally on the ground or other lower level, not as a result of a major intrinsic event such as a stroke, seizure or loss of consciousness (Appeadu & Bordoni, 2023).
Fear of falling	Fear of falling (FOF) is a psychological concern characterized by a sense of anxiety or fear experienced by an individual when faced with the prospect of falling or losing balance while standing, walking, or performing daily activities (MacKay et al., 2021).
Fall self-efficacy	Refers to an individual's confidence in their ability to avoid falls or to minimize the impact of falls if they occur. It encompasses an individual's belief in their ability to perform activities of daily living without falling (Schepens et al., 2012; Soh et al., 2021).
Personality traits	Primarily defined according to the FFM (Digman, 1990) which includes neuroticism (emotional instability), extraversion, conscientiousness, agreeableness, and openness. To capture the broader range of evidence linking personality and falls, studies employing other validated constructs, such as the Type A behavior pattern (Maeda, 1985), were also included.

Table 5.2

Author (Year)	Country	Design	Population/Setting	Personality and Fall-Related Psychological Measures	Study Aim	Main Findings	Identified Gaps
Mann et al.(2006)	UK	Cross-sectional	n= 1691; community-dwelling female (≥70 years), mean age = 77.5 (SD 4.76)	Eysenck Personality Inventory (Neuroticism); FOF (6-point Likert scale item)	Examine the relationship between FOF and neuroticism in older adults.	Higher neuroticism (OR 1.47 per SD increase, $p<0.001$) and history of falls (OR 1.57, $p<0.001$) were significant predictors of FOF.	Limited studies examining personality and FOF relationships; variability in FOF measurement.
Kloseck et al.(2007)	Canada	Cross-sectional	n = 199 community-dwelling older adults (mean age 78.9, SD 7.12, 70-85 years); 76% females.	Falls Efficacy Scale; General questions (FOF); Personality based on descriptions by McCrae and Costa (1987).	Investigate the influence of personality, confidence, health, and well-being on engagement in daily activities among older adults	Higher neuroticism and lower conscientiousness were associated with increased fall risk; extraversion was linked to greater community engagement.	Limited studies on personality and self-efficacy; measurement inconsistencies.
Bower et al.(2020)	US	Longitudinal prospective	n = 263; aged 60+ with recent hip fracture, recruited from 8 hospitals (mean age 77.54, SD 8.78 years); 75.3% female.	4-item neuroticism subscale (Mini IPIP); Short Falls Efficacy Scale International (Short FES-I).	Explore physical and psycho-social risk factors of chronic FOF after hip fracture.	Higher neuroticism was associated with greater and persistent FOF post-fracture.	Limited clinical population studies.

Canada et al.(2020)	US	Longitudinal	n = 4,759; aged 65–99 years (mean 73.58; SD 6.5); 54.9% females (Health and Retirement Study).	26-item Midlife Development Inventory (MIDI)	Examine personality and falls, exploring mediation effects of health-risk behaviours.	Neuroticism and conscientiousness predicted fall risk; mediation via inactivity, disease burden, smoking, depressive symptoms.	Lack of causal data; need for longitudinal validation
Hajek & König (2021)	Europe/Israel	Cross-sectional	n = 69,846 older adults (mean age 68.3, SD 9.5, 50-105 years) 57% female from SHARE	10-item Big Five Inventory (BFI-10)	Identify personality factors increasing fall risk	Low conscientiousness decreased fall risk (OR = 0.89); high neuroticism increased fall risk (OR = 1.16)	Need for population-specific studies
Turunen et al.(2022)	Finland	Cross-sectional	n = 314 community-dwelling older adults (mean age 74.5, SD 3.8; 70-85 years) 60% females	Eysenck Personality Inventory; Falls Efficacy Scale-International (FES-I)	Investigate neuroticism, FOF, and falls, including potential mediation	Neuroticism influenced indoor falls via depressive symptoms and FOF	Limited research explores the link between personality traits and falls, especially how psychological factors mediate this relationship.

Zhang et al.(2004)	China	Longitudinal prospective	n = 879 community-dwelling older adults (≥60 years; mean age ~67.5; 434 men, 445 women) from 3 urban communities in Nanjing	Personality: Type A Behavior Pattern (Maeda's Type A Scale, 12 items, cutoff ≥17 = Type A). Falls: 1-year fall diaries + monthly follow-up (definition: "falling to the ground or hitting an object	Examined whether Type A behavior is associated with fall incidence and to compare prevalence, reasons, locations, injuries, and frequency of falls between Type A and non-Type A older adults.	Fall incidence was higher in Type A vs. non-Type A (27.2% vs. 19.4%); significant in men (AOR = 2.06, p = .005) but not women. Slipping/tripping more common in Type A men; no differences in injury severity	The Type A scale was developed for coronary heart disease, not falls; mechanisms such as risk-taking and environmental challenges require further study.
Fan et al.(2024)	China	Cross-sectional	n = 407 hospitalized older adults (52.6% males; median 71; 65-77)	Chinese Big Five Personality Inventory Brief Version (CBF-PI-B); Short FES-I	Examine concerns about falling and personality	Neuroticism increased FOF (β=0.158, p=0.005); extraversion reduced FOF via subjective age (β=−0.08, p=0.03)	Need for diverse cultural validation

Note. FOF = Fear of Falling; FES-I = Falls Efficacy Scale-International; BFI-10 = Big Five Inventory; CBF-PI-B = Chinese Big Five Personality Inventory Brief Version; EPI = Eysenck Personality Inventory; MIDI = Midlife Development Inventory; IPIP = International Personality Item Pool; OR = Odds Ratio; AOR = Adjusted Odds Ratio; SD = Standard Deviation; n = Total number of participants in each study; SHARE = Survey of Health, Ageing and Retirement in Europe; p = P-value; β = standardized regression coefficient.

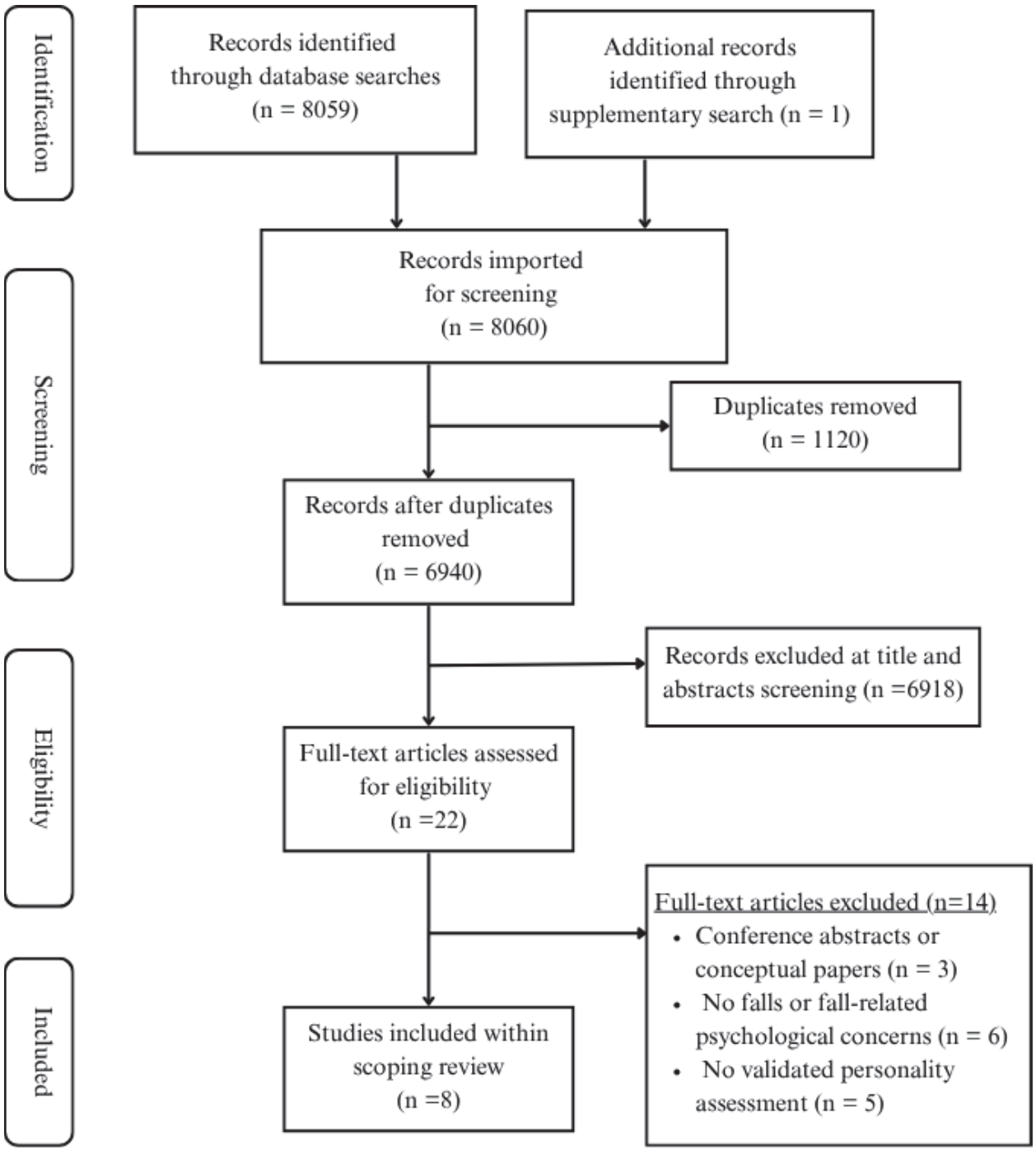

Figure 5.2: PRISMA flow diagram of study selection process

5.4 RESULT

Study Selection

From 8,060 records identified through database and supplementary searches, eight studies met the eligibility criteria and were included in this review (Figure 5.1). The included studies were published between 2004 and 2024, although the search window spanned 1945–2024. Reasons for full-text exclusions (n = 14) are provided as supplementary file (Appendix C)

Study Characteristics

The eight included studies comprised three longitudinal studies (Bower et al., 2020; Canada et al., 2020; Zhang et al., 2004)) and five cross-sectional designs (Fan et al., 2024; Hajek & König, 2021; Kloseck et al., 2007; Mann et al., 2006; Turunen et al., 2022), conducted across North America, Europe, and Asia (Table 5.2). Collectively, they examined relationships between personality traits and falls or FRPC such as (FOF, FSE). Sample sizes ranged from 199 to 69,846 participants, with mean ages between 67 and 79 years. All studies included adults aged ≥ 50 years, consistent with populations targeted in large-scale cohorts such as SHARE, thereby shaping the scope of available evidence.

Among the longitudinal studies, Canada et al.(2020) examined 4,759 community-dwelling older adults (mean age = 73.6) from the U.S. Health and Retirement Study to assess associations between personality traits and falls, including potential mediation by health behaviors. Bower et al. (2020) followed 263 hip fracture patients (mean age = 77.5) recruited from eight hospitals to identify physical and psychosocial risk factors related to persistent FOF. Zhang et al. (2004) studied 879 community-dwelling older adults (mean age = 67.5) in China, using Maeda's Type A behavior pattern scale to prospectively examine fall incidence over twelve months.

The five cross-sectional studies were conducted in varied settings. Hajek and König (2021) analyzed data from 69,846 adults (mean age = 68.3) across several European countries and Israel using the Survey of Health, Ageing, and Retirement in Europe (SHARE) survey to evaluate Big Five personality traits in relation to falls. Mann et al. (2006) surveyed 1,691 women aged ≥ 70 years in the United Kingdom to examine the link between neuroticism (emotional instability) and FOF. Turunen et al. (2022) investigated 314 community-dwelling older adults in Finland, focusing on neuroticism (emotional instability), FOF, and falls, with depressive symptoms analysed as potential mediators. Fan et al. (2024) studied 407 hospitalized older adults in China, exploring associations between personality traits and concerns about falling, including the role of subjective age. Finally, Kloseck et al. (2007) studied 199 community-dwelling Canadian to explore how personality, self-efficacy, and perceptions of health influenced engagement in daily activities.

Across studies, neuroticism (tendency toward anxiety and worry) and conscientiousness (cautiousness and self-discipline) were the most examined traits, while extraversion, openness, agreeableness, and Type A pattern received less consistent attention. FRPC were assessed using both standardized scales (e.g., Falls Efficacy Scale–International, Short FES-I) and single-item questions, reflecting heterogeneity in measurement approaches. Although a formal quality appraisal was not undertaken, most included studies clearly described their samples and used validated personality and fall-related instruments, while longitudinal evidence remains limited.

Table 5.3

Personality assessment tools used in included studies

Study (Author, Year)	Instrument	Traits/Constructs Measured	Format / Items	Notes / Limitations
Canada et al. (2020)	Midlife Development Inventory (MIDI)	Big Five traits	26 items, self-report	Comprehensive measure; well-validated, but longer format.
Bower et al. (2020)	Mini International Personality Item Pool (Mini IPIP)	Neuroticism	4-item subscale, self-report	Brevity limits depth: only one trait captured.
Hajek & König (2021), Fan et al. (2024)	Big Five Inventory–10 (BFI-10) / Chinese BFI Brief	Big Five traits	10 items (2 per trait)	Very brief; reduced reliability, especially for openness and agreeableness.
Mann et al. (2006), Turunen et al. (2022)	Eysenck Personality Inventory (EPI)	Neuroticism	Multi-item questionnaire	Older tool; limited comparability with Big Five frameworks.
Kloseck et al. (2007)	General trait questions (McCrae & Costa, 1987)	Big Five constructs (general)	Non-standardized, descriptive	Lower reliability; difficult to compare across studies.
Zhang et al. (2004)	Type A Behavior Pattern Scale (Maeda, 12 items)	Type A behavior pattern	12 items, cutoff ≥17 = Type A	Designed for coronary heart disease; not validated for fall risk.

Personality and Fall-Related Assessments

Personality traits were assessed using several validated instruments (Table 5.3), illustrating substantial methodological variation. Instruments included the 10-item *Big Five Inventory* (BFI-10) (Fan et al., 2024; Hajek & König, 2021), the *Mini International Personality Item Pool* (IPIP) (Bower et al., 2020), the *Eysenck Personality Inventory* (Mann et al., 2006; Turunen et al., 2022), and the *Midlife Development Inventory* (MIDI) (Canada et al., 2020). Kloseck et al. (2007) applied general descriptors from McCrae and Costa whereas Zhang et al. (2004) used Maeda's Type A Behavior Pattern Scale, originally designed for coronary heart disease research.

FRPC, including FOF and FSE, were primarily assessed using the Falls Efficacy Scale International (FES-I) in four studies (Bower et al., 2020; Fan et al., 2024; Kloseck et al., 2007; Turunen et al., 2022). Two studies used single-item general questions to assess FOF (Kloseck et al., 2007; Mann et al., 2006). Falls were captured across all studies through self-reported questionnaires or diaries, with recall periods ranging from 12 months (Zhang et al., 2004) to multiple years (Canada et al., 2020).

As summarized in Table 5.3, personality instruments ranged from comprehensive inventories such as the MIDI to brief screening tools like the BFI-10, and in one case, a health-specific measure (Type A Scale). The variation underscores the limited standardization of personality measurement across studies and highlights the need for consistent use of validated tools in future research.

Relationship Among Personality, Falls, and Fall-Related Psychological Concerns (FRPC)

Across studies, higher scores represented greater expression of each trait as defined by the respective instrument. For example, higher neuroticism indicated greater emotional

instability, higher conscientiousness reflected stronger organization and caution, and higher extraversion reflected greater sociability and energy. Although scoring formats varied slightly, the interpretation of high and low levels was consistent across studies

Higher neuroticism (lower emotional stability) was consistently associated with an increased likelihood of falls, including indoor, outdoor, and recurrent events (Canada et al., 2020; Hajek & König, 2021; Kloseck et al., 2007; Turunen et al., 2022). Conscientiousness (reflecting cautiousness and self-discipline) was inversely associated with falls, with lower scores linked to greater fall risk (Canada et al., 2020; Kloseck et al., 2007). No consistent associations were observed for extraversion, openness, or agreeableness and falls. Zhang et al. (2004) uniquely assessed the *Type A behavior pattern*, reporting a higher fall incidence among Type A men compared with non-Type A men (25.3% vs. 14.2%; adjusted OR = 2.06, p = .005), with no significant association among women.

Higher neuroticism (lower emotional stability) was also linked to greater FOF (Bower et al., 2020; Fan et al., 2024; Kloseck et al., 2007; Mann et al., 2006; Turunen et al., 2022). Findings for extraversion were consistent across studies, with lower extraversion associated with greater FOF (Kloseck et al., 2007) and higher extraversion linked to reduced concerns about falling (Fan et al., 2024). Evidence linking personality traits and FSE was limited to a single study (Kloseck et al., 2007), where extraversion was positively correlated with community engagement, while agreeableness and neuroticism (emotional instability) were linked to lower self-efficacy, particularly for activities performed at home.

Mediating Factors in the Relationship

Several studies examined variables that may link personality traits and fall outcomes In Canada et al. (2020), the associations of conscientiousness and neuroticism (emotional

instability) with falls were partly explained by disease burden, depressive symptoms, physical inactivity, smoking status, and handgrip strength. After adjustment, conscientiousness remained significant, whereas neuroticism (emotional instability) was no longer associated with falls. Cognitive functioning was also assessed as a potential mediator but did not account for the associations between personality and fall outcomes.

Turunen et al. (2022) identified FOF and depressive symptoms as mediators between neuroticism (emotional instability) and indoor/outdoor falls. Fan et al. (2024) reported that subjective age mediated the associations between openness, agreeableness, and FOF, and partially mediated the link between extraversion and FOF. Kloseck et al. (2007) found that perceptions of health and age were associated with both personality traits (particularly emotional instability and extraversion) and fall self-efficacy, although mediation was not formally tested.

In clinical contexts, Bower et al. (2020) found that hip fracture patients higher in neuroticism (lower emotional stability) were more likely to report persistent FOF during rehabilitation. Conversely, Hajek & König (2021) and Zhang et al. (2004) observed direct relationships between personality and falls without analysing potential mediators. Overall, mediators assessed across studies included psychological constructs (fear of falling, depressive symptoms, subjective age) and health-related factors (chronic disease, physical activity, smoking, handgrip strength). The variability in analytic approaches limits comparability but demonstrates growing attention to indirect associations between personality and fall-related outcomes.

Findings from Studies on Specific Populations

Two studies focused on distinct older adult subgroups. Bower et al. (2020) investigated adults ≥65 years) with hip fracture and reported that higher neuroticism (lower emotional

stability) was associated with greater FOF following rehabilitation. Mann et al. (2006) examined women aged ≥70 years and observed that lower emotional stability (higher neuroticism) was linked to FOF. These subgroup findings highlight how population characteristics and health status may influence the observed associations between personality and fall-related outcomes.

5.5 DISCUSSION

This scoping review synthesized evidence on the relationship among personality traits, falls, and FRPC in older adults. Across the eight included studies, neuroticism (emotional instability) and conscientiousness were the traits most consistently associated with fall-related outcomes. In general, higher neuroticism (lower emotional stability) was linked to greater fall risk and higher FOF, whereas lower conscientiousness was related to increased fall risk (Canada et al., 2020; Kloseck et al., 2007; Mann et al., 2006). Evidence for extraversion was consistent, with lower levels linked to greater FOF and higher levels linked to reduced FOF (Fan et al., 2024; Kloseck et al., 2007). Type A behavior was related to higher fall incidence among men only (Zhang et al., 2004), while openness and agreeableness showed little consistent association. Collectively, these findings position personality as a meaningful yet under-explored correlate of fall risk and fall-related psychological concerns. These patterns align with broader evidence in gerontology linking personality to health behaviour, resilience, and successful aging (Merchant et al., 2022; Pocnet et al., 2020). Such findings suggest that traits influencing adaptation and motivation may similarly shape fall-related behaviours in later life.

Beyond direct associations, the included studies point to several indirect or contextual pathways through which personality traits may influence fall-related outcomes. Health and behavioural mediators such as disease burden, depressive symptoms, inactivity, smoking, and handgrip strength were reported to partially explain associations between conscientiousness,

emotional stability, and falls (Canada et al., 2020). Psychological factors including FOF, depressive symptoms, and subjective age also emerged as potential mediators (Fan et al., 2024; Turunen et al., 2022). Perceived health and age were linked with both personality and self-efficacy, suggesting that older adults' interpretations of health and capability may shape these associations (Kloseck et al., 2007). These pathways echo principles of social-cognitive and health-belief models, where perceived control, self-efficacy, and affective regulation mediate behavioural outcomes (Curtis et al., 2015; Ellmers et al., 2023). Personality traits such as conscientiousness and emotional stability may therefore influence fall-related behaviours partly through their effects on perceived capability and motivation.

Evidence from clinical contexts similarly identified personality–psychological interactions. Among hip-fracture patients, higher neuroticism (lower emotional stability) was associated with persistent FOF during rehabilitation (Bower et al., 2020). In contrast, large-scale population studies mainly demonstrated direct associations between personality and falls without testing mediators (Hajek & König, 2021; Mann et al., 2006; Zhang et al., 2004). Overall, current evidence indicates that personality may interact with both psychological and health-related processes, but the diversity of analytical approaches limits comparability and precludes firm conclusions.

Implications for Practice and Research

These findings also align with current movements toward age-friendly and person-centred care, which emphasize tailoring interventions to "what matters" to older adults while supporting mobility, mentation, and meaningful engagement (Zisberg et al., 2024; Lesser et al., 2022). Understanding personality can inform fall-prevention strategies tailored to behavioural tendencies and emotional responses. Older adults with low emotional stability may benefit from

psychological interventions (e.g., cognitive–behavioural therapy) to address anxiety and FOF (Curtiss et al., 2021). Those lower in conscientiousness might respond better to structured education, goal-setting, or environmental prompts encouraging safe behaviour. Wearable activity monitors and other feedback-based technologies may enhance self-awareness and adherence to fall-prevention recommendations, particularly for individuals prone to avoidance or reduced confidence (Warrington et al., 2021). Socially oriented programs could also be tailored, group formats for more extraverted individuals and gradual, confidence-building interventions for those less socially inclined.

Methodological variability was evident across studies. Personality was measured using diverse instruments, from comprehensive inventories such as the MIDI to brief versions like the BFI-10, and in some cases with scales developed for unrelated contexts (e.g., the Type A scale). FRPCs were likewise measured inconsistently. Adopting standardized, validated measures of both personality and FRPC will improve comparability and meta-analytic potential. Future work should also address current gaps: (a) the scarcity of research on FSE and BC; (b) the under-representation of hospitalized and post-fracture populations; and (c) the limited number of longitudinal designs capable of clarifying temporal relationships. Incorporating broader personality models such as HEXACO (Ashton & Lee, 2007) may further expand understanding by capturing traits beyond the traditional Big Five.

Limitations

Only eight studies met the inclusion criteria, despite more than 8,000 records screened, reflecting a genuine evidence gap rather than restrictive eligibility parameters. The search strategy was intentionally broad, covering five major databases and an extended time frame (1945–2024) to maximize sensitivity. It also included terms such as frailty to capture related

constructs. Many excluded papers examined associated factors (e.g., depression, anxiety) without employing validated personality assessment or existed only as conference abstracts. Thus, the small number of eligible studies mirrors the scarcity of research directly integrating personality and fall outcomes rather than methodological limitation.

Consistent with PRISMA-ScR guidance, no formal critical appraisal was conducted, limiting conclusions about evidence strength (Munn et al., 2018). Substantial heterogeneity across personality and FRPC measures further constrained synthesis. Most studies were cross-sectional and focused on community-dwelling adults, limiting insight into causal relationships and clinical populations. Notably, evidence on fall self-efficacy and balance confidence remains minimal, highlighting a key area for future inquiry.

5.6 CONCLUSION

This scoping review mapped current evidence on the relationship between personality traits and fall-related outcomes among older adults. Across the eight included studies, neuroticism (emotional instability) and conscientiousness were most consistently associated with falls and FOF, whereas extraversion showed a generally protective association with FOF, and Type A behavior was significant only among men. Research on openness, agreeableness, FSE, and BC remains limited. The small number of eligible studies and the heterogeneity of personality and fall-related measures underscore the need for standardized assessment tools and expanded research across diverse populations and contexts. Overall, the findings position personality as an underexplored but potentially important determinant of fall risk and adaptation in aging, warranting further investigation through longitudinal and clinically focused studies.

Authors Contributions

Henrietha Adandom: Conceptualization (lead); writing – original draft (lead); writing – review and editing (equal); Methodology – search strategy (supporting). Henry Nwankwo: Writing – review and editing (equal). David Scott: Methodology – search strategy (lead); writing – review and editing (equal); Israel Adandom: Writing – review and editing (equal). Olayinka Akinrolie: Writing – review and editing (equal). Adesola Odole: Supervision (supporting); Writing – review and editing (equal). Lisa Cook: Supervision (supporting); Writing – review and editing (equal). Gongbing Shan: Supervision (supporting); Writing – review and editing (equal). Oluwagbohunmi Awosoga: Supervision (lead); Writing – review and editing (equal).

All authors have read and approved the final version of the manuscript. Henrietha Adandom had full access to all the data in this study and takes complete responsibility for the integrity of the data and the accuracy of the data analysis.

Conflict of Interest Statement

The authors declare no conflict of interest.

Funding

The authors declare that no funding is available for this study.

Data Availability Statement

The data for this scoping review consists of published studies retrieved from [databases searched, e.g., MEDLINE, APA PsycINFO, Web of Science, CINAHL, SPORTDiscus]. The full search strategy, including databases, search terms, and inclusion/exclusion criteria, is provided in the manuscript and supplementary materials. No new primary data were collected, and all included sources are publicly accessible.

Transparency Statement

The lead author (HA) affirms that this manuscript is an honest, accurate, and transparent account of the study being reported; that no important aspects of the study have been omitted; and that any discrepancies from the study as planned (and, if relevant, registered) have been explained.

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CHAPTER 6: MANUSCRIPT THREE

Personality traits and health behaviors as predictors of fall among community-dwelling older adults: findings from the Canadian Longitudinal Study on Aging.

Citation:

Adandom, H. C., Alumona, C. J., Adandom, I. I., Odole, A. C., Cook, L. L., Shan, G., & Awosoga, O. A. (2025). Personality traits and health behaviors as predictors of fall among community-dwelling older adults: Findings from the Canadian Longitudinal Study on Aging. *Journal of Applied Gerontology, 0*(0). https://doi.org/10.1177/07334648251328427

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Running Head: Personality Traits and Health Behaviors as Predictors of Fall

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6.1 ABSTRACT

Objectives: To examine whether personality traits and health behaviors predict falls in community-dwelling older adults.

Methods: Longitudinal data from the Canadian Longitudinal Study on Aging (CLSA) at baseline (2011–2015) and follow-up two (2018–2021) were analyzed using logistic regression for 5,270 adults aged 65 and older, with an alpha level of 0.05.

Results: At baseline, participants' mean age was 72 years, with 51.1% female. Most identified as White (96.7%) and had education beyond secondary (81.5%). Increased physical activity (OR: 1.012, 95% CI: 1.01–1.014, decreased alcohol consumption (OR: 1.634, 95% CI: 1.419–1.883), and smoking cessation (OR: 2.8, 95% CI: 2.198–3.568) increased fall risk, while conscientiousness (OR: 0.832, 95% CI: 0.792–0.874) and openness (OR: 0.959, 95% CI: 0.922–0.998) were protective at follow-up two. Personality changes significantly influence falls.

Discussion: Findings highlight the complex interplay between personality traits, health behaviors, and falls, suggesting a one-size-fits-all approach to fall prevention may be insufficient.

What this paper adds to existing literature

- Findings highlight the complex relationship between smoking behaviors and falls. Notably, smoking cessation in later life significantly increases the likelihood of falls, possibly due to underlying health conditions.
- Moderate drinking demonstrates a protective effect against falls, whereas decreasing drinking or increasing physical activity slightly over time may elevate fall risk in older adults.
- Personality traits such as extraversion, agreeableness, and conscientiousness, along with their changes over time, significantly influence fall risk, providing fresh insights into the psychosocial determinants of physical health in aging populations.

Applications of study findings to gerontological practice, policy, and research

- Gerontological practitioners can leverage these findings to develop personalized fall prevention strategies, considering both personality traits and changes in health behaviors over time.
- Policies targeting fall prevention in older adults should include education on the potential benefits of moderate alcohol consumption and the risks associated with abrupt changes in physical activity or health behaviors.
- Researchers should explore personality-driven behavior interactions and their longitudinal changes to enhance understanding and development of effective fall prevention interventions for aging populations.

6.2 INTRODUCTION

Falls remain a pressing public health issue among older Canadians, with approximately one in three individuals over the age of 65 experiencing a fall each year (Parachute, 2022). The consequences are significant, leading to an estimated $5.6 billion annually in medical expenses associated with both fatal and non-fatal falls (Public Health Agency of Canada, 2022). These incidents not only contribute to loss of functional independence but also impose a substantial burden on healthcare systems and the economy (Florence et al., 2018; Parachute, 2022). Thus, understanding falls factors is critical for prevention and mitigation efforts.

The risk of falls is multifactorial, involving a combination of biological, environmental, and psychological contributors. Biological factors, such as muscle weakness, mobility issues, neurological impairments, and chronic conditions, play a significant role in increasing fall risk, alongside environmental hazards (Lee, 2021; Mielenz et al., 2017). Psychological factors, including depression and cognitive impairment, also substantially contribute to the likelihood of falls. Notably, depression and cognitive impairment often co-occur, compounding the overall risk (Iaboni & Flint, 2013; Stubbs et al., 2016). For example, aging-related declines in multitasking abilities can lead to confusion and attentional conflicts. Depression may exacerbate these cognitive challenges, further reducing an individual's ability to prevent falls (Fischer et al., 2014; Iaboni & Flint, 2013). While research has extensively explored the biological and environmental contributors to fall risk, the complex interplay between health behaviors, personality traits, and falls remains underexplored.

According to the Health Belief Model (HBM), an adult's perception of falls—such as perceived susceptibility and severity—and their beliefs about the benefits and barriers to engaging in preventive health behaviors, such as physical activity, may influence fall prevention

efforts (Vincenzo et al., 2022). Personality traits can shape these perceptions and the likelihood of engaging in health-promoting behaviors and outcomes, as they are relatively stable characteristics that influence how individuals perceive, interact with, and respond to their environment (Milad & Bogg, 2020; Sanchez-Roige et al., 2018). While this stability may provide a consistent foundation for behavioral patterns, decision making, and coping strategies, individual differences in personality are not perfectly stable overtime, as some persons may experience major live events like a fall, leading to small changes across the lifespan (Bühler et al., 2024; Harris et al., 2016).

The relationship between personality traits and falls has been further explored in research. Canada et al. (2020) conducted a longitudinal cohort study on older adults aged 65–99 years to investigate the relationship between the "big five" personality traits and fall risk. The study found that changes in personality traits, particularly neuroticism and conscientiousness, are significant predictors of falls over time (Canada et al., 2020). Neuroticism, also known as low emotional stability or negative emotions, involves levels of anxiety and emotional instability. A lack of emotional stability may increase fear of falling and heighten falls (Kloseck et al., 2008; Mann et al., 2006). In contrast, extraversion, associated with sociability and assertiveness, has been linked to increased engagement in physical activities, which can elevate the risk of falling (Kloseck et al., 2007, 2008). Conscientiousness, characterized by responsibility and self-discipline, generally correlates with cautious behavior, reducing falls (Canada et al., 2020; Rolison et al., 2014). Meanwhile, agreeableness, reflecting cooperativeness, and empathy may predispose individuals to prioritize others' needs, potentially increasing their susceptibility to falls (Kloseck et al., 2008; Rolison et al., 2014). Lastly, openness, denoting a preference for new experiences, has been associated with high-risk behaviors (Digman, 1990; Rolison et al., 2014).

Health behaviors, such as tobacco use, alcohol consumption, and physical activity or inactivity, are well-documented determinants of health outcomes (Ding et al., 2015; Feldman & Chaudhury, 2008). Smoking is linked to decreased bone density and poorer overall health, which can increase the risk of falls (Thorin et al., 2016). Physical inactivity contributes to muscle weakness and impaired balance, further raising the risk of falling (Smith et al., 2019; Van Gameren et al., 2022). Alcohol consumption impairs motor function and reaction time, adding to the likelihood of falls (Qian et al., 2021). Unlike personality traits, these behaviors are not inherently stable as individuals may start, stop, or modify these behaviors over time due to life events, interventions, or changing circumstances (Chai et al., 2024). Understanding how these modifiable behaviors contribute to falls in older adults is essential for developing personalized fall prevention strategies, as such insights can empower them to adopt safer behaviors and maintain their independence. In this study, we used data from the Canadian Longitudinal Study on Aging (CLSA) to examine the impact of personality traits and health behaviors on falls among community-dwelling older adults. We hypothesized that (i) personality traits (emotional stability, conscientiousness, openness, extraversion, and agreeableness) and health behaviors (physical activity, alcohol consumption, and tobacco use) predict falls and (ii) that changes in these behaviors over time are associated with the likelihood of falls.

6.3 METHODS

Study Design

The study was a secondary longitudinal analysis of the Canadian Longitudinal Study on Aging (CLSA) data at baseline and follow-up two. The CLSA is an ongoing national study that began in 2011, following over 50,000 individuals aged 45–85 at recruitment. Participants were divided into a tracking cohort of 21,241 individuals and a comprehensive cohort of 30,097

individuals (Raina et al., 2009). The CLSA excluded individuals who (1) had cognitive impairment at baseline/recruitment, (2) were full-time members of the Canadian Armed Forces, (3) lived in long-term care facilities at baseline/recruitment and on Federal First Nations reserves or settlements in the Canadian territories, and (4) were unable to communicate in English or French (Raina et al., 2009). We selected 5270 participants from the comprehensive cohort who were 65 years and older at the baseline and completed data collection at baseline (2011–2015), follow-up one (2015–2018), and follow-up two (2018–2021). Figure 6.1 provides the characteristics of the excluded participants. The study was approved by the Research Ethics Board of University of Alberta (reference number: Pro00129373). For more information about the CLSA, visit https://www.clsa-elcv.ca.

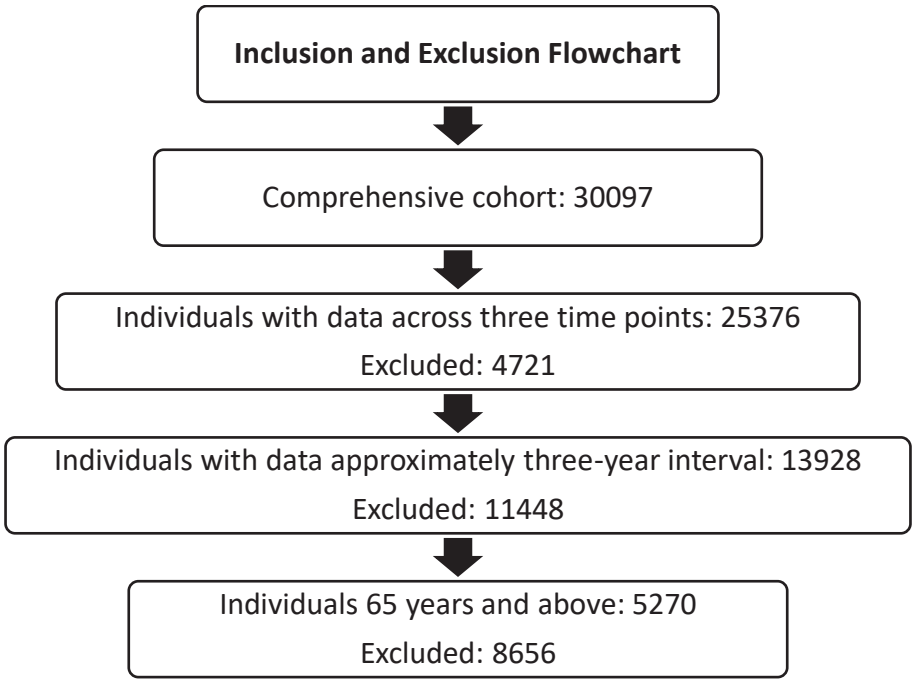

Figure 6.1: Characteristics of excluded participants

Outcome Variable

Fall Status

Participants were asked to recall falls in the previous year that resulted in limitations to their normal activities using the following question: “In the past 12 months, did you have any falls?” The response options were yes, or no. Based on their responses, participants were classified as non-fallers (no) if they had not experienced any falls and fallers (yes) if they had experienced one or more falls.

Explanatory Variables

Personality Traits

The Ten-Item Personality Inventory (TIPI) was used to measure the five personality traits: openness, conscientiousness, extraversion, agreeableness, and emotional stability. The questionnaire was a 7-point Likert scale containing 10 items, with two paired items for each trait. Five of the ten items were reversed-scored, added to their matching pair in the relevant “Big Five” traits, and averaged to provide a single score (range 1 to 7) for each trait (Satia et al., 2022). There was no data for personality traits at follow-up two.

Physical Activity

A modified version of the Physical Activity Scale for the Elderly (PASE) was used to measure typical weekly levels of physical activity (Canadian Longitudinal Study on Aging, 2024). The questionnaire asked about the frequency and duration of physical activity in light, moderate, and high-intensity sports, as well as strength training and walking. The response options for the frequency of activity were (0 days), seldom (1 to 2 days), sometimes (3 to 4 days), and often (5 to 7 days), while duration was categorized into less than 30 minutes, 30 minutes to less than one hour, one hour to less than 2 hours, two hours to less than four hours,

and four hours or more. The total weekly hours of physical activity were estimated by multiplying the midpoints of the frequency and duration response category except for the ≥4-hour category, which was coded as 4 hours and then summing the results of each activity (Putman et al., 2023). The PASE is a valid and reliable instrument for the assessment of physical activity for use in epidemiology studies in older adults with a test–retest reliability coefficient of 0.75 (Washburn et al., 1993). It also showed good validity when compared with digital technologies like Actigraphy data with a statistically significant Spearman correlation of 0.43 ($p < .01$) (Dinger et al., 2004).

Alcohol Consumption

Participants were asked to report their frequency of alcohol consumption over the past 12 months. Response options included almost every day (6–7 times a week), 4–5 times a week, 2–3 times a week, once a week, 2–3 times a month, about once a month, less than once a month, or never. For analysis, participants were categorized as non-drinkers if they reported no alcohol consumption in the past 12 months, regular drinkers if they drank once or more per month, and occasional drinkers if they drank less often than once a month (Canadian Longitudinal Study on Aging, 2021).

Smoking History

Participants indicated their smoking history by choosing one of the three responses: yes (I currently smoke), former (I don't smoke now, but I have in the past), and no (I don't smoke, and I never have).

Covariates

The covariates were sex, age, marital status, education, residence, cultural identity, presence of chronic condition, depression, and cognition. Depression was measured using the

Center for Epidemiologic Studies Depression scale (CESD10). It contained 10 items covering depressive symptoms experienced in the past week with four response categories ranging from "zero for rarely" to "four for all of the time." Scores range from 0 to 30, with <10 or ≥10 indicating negative or positive for depressive symptoms, respectively (Grant et al., 2021). Cognitive function was assessed using two domains from the CLSA: executive function and psychomotor speed. Executive function, measured by the mental alternation test (MAT) and the Stroop test (Victoria version), involves complex behaviors such as planning, decision-making, attention, and problem-solving. Psychomotor speed, assessed by the choice reaction time (CRT) task, involves the coordination of physical movement to react quickly and accurately to external stimuli. Impairments in these cognitive processes can increase falls by compromising the ability to perform daily tasks safely and confidently (Holtzer et al., 2007). Appendix D provides details on the range of scores, measurement methods, and characteristics of each cognitive measure used in the analysis. Z-scores for each cognitive measure were used in this analysis (O'Connell et al., 2022).

Variable Description

Continuous variables: age (years), physical activity, depression, Stroop, mental alternation test, choice reaction time, extraversion, agreeableness, conscientiousness, emotional stability, and openness. Categorical variables: fall status (no, yes), sex (female, male), marital status (have partner, do not have a partner), cultural identity (Whites, non-Whites), residence (rural, urban), chronic condition (no, yes), alcohol consumption (non-drinkers, occasional drinkers, regular drinkers), and smoking history (never smoked, current smoker, former smoker). Changes in categorical variables from baseline to follow-up two were categorized as follows: marital status (unchanged/have no partner now, have partner now), smoking history (maintained

status, quit smoking, began smoking), alcohol consumption (maintained status, decreased drinking, increased drinking), and chronic condition (no, yes). For all continuous variables, we compared the baseline value to the corresponding value at follow-up two to determine changes in status over time.

Data Analysis

All analyses were performed using the Statistical Package for Social Sciences (SPSS) version 28, and the alpha level was set at 0.05. According to CLSA guidelines, weights were applied to the dataset. The variables were summarized using descriptive statistics of frequency, percentage, mean, and standard deviation. Prior to inferential statistics, multivariate outliers were assessed using Cook's distance (Vatcheva et al., 2016). Missing data for the variables were minimal (<5%) and were excluded listwise. Bivariate logistic regression assessed individual associations between each predictor and the outcome, while multivariate logistic regression examined adjusted associations by including all predictors simultaneously, adjusting for others using the forced entry method. Adjusted odds ratios (ORs) and 95% confidence intervals (CIs) were calculated to quantify the strength and direction of associations. Model fit statistics, including −2 Log Likelihood and pseudo-R-squared values (Cox & Snell & Nagelkerke), were reported.

6.4 RESULTS

Participant's Characteristics

At baseline, the average participant age was 72 years, with a slightly higher proportion of females (51.1%) than males. The majority were Whites (96.7%) and had an education level above secondary (81.5%). Table 1 shows a significant difference in participants' fall status between baseline and follow-up two ($\chi^2 = 54.93$, $p < .001$), with a high proportion of participants

becoming fallers at follow-up two. Significant differences were also observed for smoking history ($\chi^2 = 19.61$, $p < .001$) and alcohol consumption ($\chi^2 = 61.66$, $p < .001$), with higher proportions of participants currently smoking and being regular drinkers at baseline. There were significant differences in physical activity and personality traits, with a decline in extraversion, agreeableness, emotional stability, and openness at follow-up two (Table 6.2).

Table 6.1

Participants' characteristics.

	Percentage (%)			
Variable	Baseline	Follow up2	χ^2	*p*-value
Marital status			37.413	<0.001*
Do not have a partner	1900 (36.1)	2205 (41.9)		
Have partner	3369 (63.9)	3061(58.1)		
Residence			22.904	<0.001*
Rural	414 (7.9)	290 (5.5)		
Urban	4856 (92.1)	4960 (94.5)		
Smoking history			19.612	<0.001*
Never smoked	2678 (50.8)	2507 (48.7)		
Former smoker (Quit)	2356 (44.7)	2478 (48.1)		
Current smoker	235 (4.5)	165 (3.2)		
Alcohol consumption			61.664	<0.001*
Non drinkers	624 (12.2)	910 (17.3)		
Occasional drinkers	618 (12.0)	683 (13.0)		
Regular drinkers	3892 (75.8)	3668 (69.7)		
Chronic Conditions			318.501	<0.001*
No	364 (6.9)	18 (0.7)		
Yes	4886 (93.1)	5132 (99.3)		
Fall status			54.932	<0.001*
No	5002 (94.9)	4808 (91.3)		
Yes	268 (5.1)	461 (8.7)		

*$p < .05$. χ^2 = Chi-square statistics.

Table 6.2

Paired sample T-test for scale variables

	Baseline	Follow-up 2		
Variable	M ± SD	M±SD	T-statistic	p-value
Age (years)	72.62 ± 5.52	78.44 ± 5.55	847.180	<0.001*
Physical activity (PASE score)	24.92 ± 24.71	32.20 ± 26.18	21.572	<0.001*
Depression (CES-D-10, 0–30)	4.78 ± 4.17	4.79 ± 4.46	0.169	0.866
Stroop (s)	2.25 ± 0.63	2.27 ± 0.84	1.532	0.126
Mental alternation test (0-51)	25.44 ± 8.45	23.60 ± 7.60	-16.704	<0.001*
Choice reaction time (ms)	814.34 ± 190.722	869.544 ± 151.99	11.981	<0.001*
ǂ Extraversion	4.35 ± 1.72	4.21 ± 1.74	-7.431	<0.001*
ǂ Agreeableness	5.94 ± 1.09	5.79 ± 1.14	-9.923	<0.001*
ǂ Conscientiousness	6.21 ± 1.10	6.22± 1.05	0.387	0.699
ǂ Emotional stability	5.93 ± 1.29	5.78 ± 1.31	-9.127	<0.001*
ǂ Openness	5.36 ± 1.40	5.23 ± 1.4	-7.056	<0.001*

Note. *p < .05. ǂ Analysis was completed with values at baseline and follow-up one. Personality traits measured using the Ten-Item Personality Inventory (TIPI); unitless, higher scores = greater trait expression. Physical activity measured using the Physical Activity Scale for the Elderly (PASE); unitless composite index (frequency × duration of activities in the past 7 days), higher scores = greater activity. Depression measured using CES-D-10; scores range 0–30, higher scores = more depressive symptoms.

Table 6.3

Bivariate binary logistic regression for the association between fall status and predictors at baseline and follow-up 2

	Baseline				Follow-up 2			
			95% C.I.				95% C.I.	
Variable	*p*-value	Odds Ratio	Lower	Upper	*p*-value	Odds Ratio	Lower	Upper
Smoking history								
Never smoked	<0.001*	1.192	1.112	1.277	<0.001*	0.753	0.718	0.789
Current smoker	<0.001*	0.651	0.542	0.784	<0.001*	0.392	0.325	0.473
Former smoker (quit)	0.003*	0.899	0.839	0.964	<0.001*	1.448	1.381	1.517
Alcohol consumption								
Non drinkers	0.181	0.935	0.847	1.032	<0.001*	1.322	1.251	1.397
Occasional drinkers	<0.001*	0.747	0.666	0.838	0.468	1.025	0.959	1.094
Regular drinkers	<0.001*	1.215	1.121	1.317	<0.001*	0.795	0.758	0.834
Physical activity (unit increase)	0.359	1.001	0.999	1.002	<0.001*	0.996	0.995	0.997
ǂ Extraversion (unit increase)	<0.001*	1.133	1.110	1.157	<0.001*	1.113	1.098	1.129
ǂ Agreeableness (unit increase)	<0.001*	1.116	1.079	1.154	<0.001*	0.915	0.897	0.934
ǂ Conscientiousness (unit increase)	<0.001*	1.071	1.035	1.107	<0.001*	0.906	0.887	0.926
ǂ Emotional stability (unit increase)	<0.001*	1.061	1.032	1.091	<0.001*	0.920	0.905	0.935
ǂ Openness (unit increase)	<0.001*	1.173	1.143	1.204	<0.001*	1.120	1.101	1.140

*$p < .05$. ǂ = Analysis was completed with values at baseline and follow-up one

Bivariate Analysis

Personality traits and health behaviors demonstrated significant associations with falls at baseline and follow-up assessments (Table 3). At baseline, having no history of smoking (OR: 1.192, 95% CI: 1.112–1.277) and being a regular drinker (OR: 1.215, 95% CI: 1.121–1.317) were significantly associated with higher odds of experiencing falls, while being a current smoker (OR: 0.651, 95% CI: 0.542–0.784), former smoker (OR: 0.899, 95% CI: 0.839–0.964), and occasional drinker (OR: 0.747, 95% CI: 0.666–0.838) were linked to lower odds of falling. Higher levels of all personality traits (extraversion: OR: 1.133, 95% CI: 1.110–1.157; agreeableness: OR: 1.116, 95% CI: 1.079–1.154; conscientiousness: OR: 1.071, 95% CI: 1.035–1.107; emotional stability: OR: 1.061, 95% CI: 1.032–1.091; openness: OR: 1.173, 95% CI: 1.143–1.204) were significantly associated with higher odds of falling.

In follow-up two, being a former smoker (OR: 1.448, 95% CI: 1.381–1.517), being a non-drinker (OR: 1.322, 95% CI: 1.251–1.397), higher extraversion levels (OR: 1.113, 95% CI: 1.098–1.129), and higher openness levels (OR: 1.120, 95% CI: 1.101–1.140) were significantly associated with higher odds of falling. Conversely, being a non-smoker (OR: 0.753, 95% CI: 0.718–0.789), current smoker (OR: 0.392, 95% CI: 0.325–0.473), and regular drinker (OR: 0.795, 95% CI: 0.758–0.834), and higher levels of physical activity (OR: 0.996, 95% CI: 0.995–0.997), agreeableness (OR: 0.915, 95% CI: 0.897–0.934), conscientiousness (OR: 0.906, 95% CI: 0.887–0.926), and emotional stability (OR: 0.920, 95% CI: 0.905–0.935) were linked to lower odds of falling.

Multivariate Analysis

Our multivariate analysis revealed complex relationships between falls, personality traits, and health behaviors over time (Table 4). Participants who smoked at baseline (OR: 1.639, 95%

CI: 1.171–2.295) had a 63.9% higher likelihood of falling at follow-up two than those who never smoked. Compared to those who maintained their smoking history from baseline, participants who either quit (OR: 2.8, 95% CI: 2.198–3.568) or began smoking (OR: 1.936, 95% CI: 1.291–2.903) by follow-up two had increased odds of falling, with those who quit experiencing the highest increase. Regarding alcohol consumption, compared to non-drinkers at baseline, occasional drinkers were 67.9% less likely to fall at follow-up two (OR: 0.321, 95% CI: 0.268–0.385), and regular drinkers were 61.4% less likely to fall (OR: 0.386, 95% CI: 0.335–0.444). However, participants who decreased drinking (OR: 1.634, 95% CI: 1.419–1.883) by follow-up two had a 63.4% higher likelihood of falling than those who maintained their drinking status. Participants with higher physical activity levels at baseline (OR: 1.014, 95% CI: 1.012–1.016) were associated with a slightly (1.4%) higher likelihood of falling at follow-up two. Interestingly, increased physical activity from baseline to follow-up two (OR: 1.012, 95% CI: 1.010–1.014) was associated with higher odds of falling at follow-up two.

Regarding personality traits, higher levels of extraversion and agreeableness at baseline were associated with a 13.6% (OR: 1.136, 95% CI: 1.103–1.17) and 11.4% (OR: 1.114, 95% CI: 1.053–1.178) higher likelihood of falling, respectively, at follow-up two. Decreases in extraversion from baseline to follow-up two significantly increased the odds of falling by 29.9% (OR: 1.299, 95% CI: 1.247–1.352). Higher levels of conscientiousness and openness at baseline reduced the odds of falling by 16.8% (OR: 0.832, 95% CI: 0.792–0.874) and 4.1% (OR: 0.959, 95% CI: 0.922–0.998), respectively. Changes in conscientiousness (increase) and emotional stability (decrease) from baseline to follow-up two were linked to a 12% (OR: 0.88, 95% CI: 0.835–0.927) and 11.9% (OR: 0.881, 95% CI: 0.843–0.922) reduced likelihood of falling, respectively (see Table 4).

Table 6.4

Multivariate binary logistic regression for the association between fall status and predictors at baseline and follow-up 2

Variable	Baseline (BL)				Follow Up 2 (FU2)			
			95% C.I.				95% C.I.	
	p-value	Odds Ratio	Lower	Upper	*p*-value	Odds Ratio	Lower	Upper
Baseline characteristics								
Age (increase in years)	<0.001*	1.018	1.01	1.025	0.807	1.001	0.992	1.011
Sex at birth (ref: female)	<0.001*	0.72	0.659	0.787	<0.001*	0.69	0.618	0.769
Education (ref: secondary and below)	0.160	1.062	0.977	1.154	<0.001*	1.817	1.638	2.016
Cultural Identity (ref: non-Whites)	0.018*	1.379	1.056	1.802	0.001*	1.798	1.265	2.556
Marital status (ref has no partner)	<0.001*	0.61	0.561	0.663	<0.001*	0.39	0.352	0.433
Residence (ref: rural)	<0.001*	0.44	0.381	0.509	<0.001*	0.473	0.404	0.553
Smoking history (ref: never smoked)								
Current smoker	0.879	0.985	0.811	1.196	0.004*	1.639	1.171	2.295
Former smoker (quit)	0.124	0.939	0.867	1.017	0.519	0.86	0.543	1.361
Alcohol consumption (ref: Non-drinkers)								
Occasional drinkers	<0.001*	0.758	0.649	0.885	<0.001*	0.321	0.268	0.385
Regular drinkers	0.514	0.964	0.865	1.075	<0.001*	0.386	0.335	0.444
Chronic conditions (ref: no)	<0.001*	0.627	0.553	0.711	0.053	0.449	0.2	1.011
Physical activity (unit increase)	0.611	1	0.999	1.002	<0.001*	1.014	1.012	1.016
Depression (unit increase)	<0.001*	1.039	1.029	1.048	0.005*	0.979	0.964	0.994
Stroop (unit increase)	0.582	1.016	0.96	1.075	0.165	0.942	0.866	1.025
Mental alternation test (unit increase)	<0.001*	1.015	1.01	1.02	<0.001*	1.016	1.008	1.023

Choice reaction time (unit increase)	0.116	1	1	1	<0.001*	1.001	1	1.001
Extraversion (unit increase)	<0.001*	1.114	1.087	1.141	<0.001*	1.136	1.103	1.17
Agreeableness (unit increase)	<0.001*	0.939	0.906	0.974	<0.001*	1.114	1.053	1.178
Conscientiousness (unit increase)	<0.001*	1.131	1.086	1.176	<0.001*	0.832	0.792	0.874
Emotional stability (unit increase)	<0.001*	1.161	1.119	1.203	0.146	1.037	0.987	1.089
Openness (unit increase)	<0.001*	1.134	1.1	1.168	0.040*	0.959	0.922	0.998
Change in characteristics								
Marital status change (ref: unchanged/have no partner)	-	-	-	-	<0.001*	1.612	1.37	1.897
Smoking history change (ref: unchanged)								
Began smoking	-	-	-	-	0.001	1.936	1.291	2.903
Quit/stopped smoking	-	-	-	-	<0.001*	2.8	2.198	3.568
Alcohol consumption change (ref: unchanged)								
Decreased drinking	-	-	-	-	<0.001*	1.634	1.419	1.883
Increased drinking	-	-	-	-	0.108	1.146	0.97	1.354
Chronic conditions change (ref: no)	-	-	-	-	0.008*	0.327	0.142	0.751
Physical activity change (unit increase)	-	-	-	-	<0.001*	1.012	1.01	1.014
Depression change (unit increase)	-	-	-	-	<0.001*	1.023	1.009	1.037
Stroop change (unit increase)	-	-	-	-	0.037*	1.084	1.005	1.169
Mental alternation test change (unit decrease)	-	-	-	-	0.854	1.001	0.992	1.009
Choice reaction time change (unit increase)	-	-	-	-	<0.001*	1.001	1.001	1.001

ǂ Extraversion change (unit decrease)	-	-	-	-	<0.001*	1.299	1.247	1.352
ǂ Agreeableness change (unit decline)	-	-	-	-	0.686	0.99	0.944	1.039
ǂ Conscientiousness change (unit increase)	-	-	-	-	<0.001*	0.88	0.835	0.927
ǂ Emotional stability change (unit decrease)	-	-	-	-	<0.001*	0.881	0.843	0.922
ǂ Openness change (unit decline)	-	-	-	-	0.523	0.988	0.95	1.026
Model summary	χ^2 (20) = 843.495. p < 0.001*				χ^2 (37) = 1851.816. p < 0.001*			
-2 Log Likelihood	22809.710				14933.384			
Cox & Snell & Nagelkerke R Square	0.012; 0.042				0.058; 0.139			

BL = Baseline. FU2 = Follow-up two. *p < .05. ǂ = Analysis was completed with change between BL and follow-up 1.

6.5 DISCUSSION

Our study examined the influence of personality traits and health behaviors on falls among community-dwelling older adults using data from the CLSA. Findings support the hypothesis that these behaviors are significant predictors of falls and that changes in these behaviors over time contribute to the likelihood of falling.

Smoking history emerged as a significant predictor, with participants who smoked showing a 63.9% higher likelihood of falling than those who never smoked. This aligns with evidence linking smoking to poorer balance, muscle strength, and bone density (Al-Bashaireh et al., 2018; Guo et al., 2023). Interestingly, individuals who quit smoking by the follow-up period had significantly higher odds of falling (OR = 2.8) than those who maintained their smoking history or began smoking during the same period. This finding suggests that those who quit smoking may experience other health challenges, such as declining physical health or frailty, that elevate fall risk (Cho et al., 2024; Fahey et al., 2023; Faulkner et al., 2009). Importantly, this association persisted even after adjusting for chronic conditions, indicating that smoking cessation may also reflect unmeasured health transitions (e.g., subclinical decline, functional loss) not fully explained by chronic disease burden.

Alcohol consumption showed a protective association, with occasional and regular drinkers having 67.9% and 61.4% reduced odds of falling, respectively, compared to non-drinkers. This may reflect the potential health and social benefits of moderate alcohol consumption, such as improved cardiovascular health, mood regulation, and social engagement, which may reduce fall risk (Reas et al., 2016; Zhang et al., 2020). However, the higher fall risk among participants who decreased their drinking by follow-up two may indicate underlying

health changes, frailty, or mobility issues, as well as age-related physiological sensitivity to alcohol, which can impair balance and coordination (White et al., 2023).

The association between increased physical activity and a slight 1.4% higher fall risk aligns with research highlighting the dual-edged nature of physical activity in older adults. While physical activity improves balance, strength, and mobility, it also increases exposure to fall hazards due to greater engagement in potentially risky environments or activities (Kwok et al., 2024; Yuan et al., 2022). This modest increase may reflect a transitional phase in which individuals adopting more active lifestyles encounter temporary risks before realizing full functional benefits. Additionally, significant changes in physical activity levels, particularly abrupt increases, may contribute to short-term increases in fall risk.

Personality traits also demonstrated a complex relationship with falls. Higher levels of extraversion and agreeableness were associated with increased fall risk, likely due to behaviors such as greater social engagement or riskier activities that heighten exposure to fall hazards (Fan et al., 2024; Stephan et al., 2014). The 29.9% increase in fall odds associated with decreased extraversion suggests that social withdrawal and reduced physical activity may also contribute to fall risk (Thomas et al., 2022). Conscientiousness, a trait linked to cautious behavior, was protective against falls (Canada et al., 2020). Interestingly, a decrease in emotional stability (higher neuroticism) reduced the odds of falling, contradicting prior findings (Canada et al., 2020; Stephan et al., 2014). This unexpected result may reflect compensatory behaviors, such as increased vigilance or avoidance of hazardous situations, among individuals with low emotional stability (higher neuroticism) (Weston & Jackson, 2018). Lastly, openness was associated with a modest 4.1% reduction in fall risk, suggesting that exploratory behaviors may have a limited role in fall prevention.

Strengths and Limitations

The main strength of our paper lies in its large, representative sample from the Canadian Longitudinal Study on Aging (CLSA), enhancing the generalizability of findings on falls among community-dwelling older adults. Its longitudinal design allows for tracking behavioral changes over time, offering dynamic insights into their impact on falls. By examining both psychological factors, such as personality traits, and health behaviors, including smoking, alcohol use, and physical activity, the study provides a holistic understanding of fall risk. Focusing specifically on significant falls, those limiting normal activities, ensures clinically meaningful results, relevant to fall prevention strategies. Nonetheless, some observed associations, although statistically significant, were small in magnitude (e.g., openness, changes in physical activity) and may have limited clinical relevance. This distinction underscores the importance of interpreting statistical findings within a practical, real-world context. Robustness is further enhanced by controlling for potential confounders, enabling accurate associations between personality, behaviors, and falls.

However, limitations exist. Self-reported data for falls and health behaviors may introduce biases, potentially affecting measurement accuracy (Althubaiti, 2016). The complexity of interactions between personality traits and behaviors poses challenges to disentangle their influences fully. Falls were measured using a dichotomous yes/no response over the past year, which, while consistent with epidemiological practice, does not capture fall frequency or severity and may be subject to recall bias. Additionally, the inability to distinguish single falls from multiple falls limits insights into predictors of recurrent falls, which may differ from single fall predictors (Pérez-Ros et al., 2019). Finally, attrition bias, common in longitudinal studies, may impact results if follow-up participants differ systematically in fall-related characteristics (Gustavson et al., 2012).

6.6 CONCLUSION

Our study highlighted the multifaceted relationships between personality traits, health behaviors, and falls in older adults aged 65 years and above. While each factor—smoking, alcohol use, physical activity, and personality—individually influences falls, our findings underscore the importance of considering how these factors interact over time. Personality traits, such as extraversion, conscientiousness, emotional stability, and agreeableness, may drive behavioral changes that either increase or mitigate the likelihood of falls, illustrating the complex interplay between psychological and behavioral domains. Our findings suggest that effective fall prevention strategies for older adults should move beyond addressing individual behaviors in isolation. Instead, interventions should adopt a holistic approach that incorporates personality-driven tendencies and potential behavioral adjustments over time.

Declaration of Conflicting Interests

The author(s) declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

Funding

The author(s) disclosed receipt of the following financial support for the research, authorship, and/or publication of this article: This research was made possible using the data/biospecimens collected by the Canadian Longitudinal Study on Aging (CLSA). Funding from the Canadian Longitudinal Study on Aging (CLSA) is provided by the Government of Canada through the Canadian Institutes of Health Research (CIHR) under grant reference: LSA 94473, the Canada Foundation for Innovation, as well as the following provinces: Newfoundland, Nova Scotia, Quebec, Ontario, Manitoba, Alberta, and British Columbia. This research has been conducted using the CLSA Baseline Comprehensive Dataset version 7.0, Follow-up 1 Comprehensive Dataset version 4.0, and Follow-up 2 Comprehensive Dataset version 2.0, under Application ID 2209014. The CLSA is led by Drs. Parminder Raina, Christina Wolfson, and Susan Kirkland. The lead author, a doctoral candidate, was provided with the CLSA data for free through the CLSA trainee fee waiver. She is thankful to the CLSA, her supervisor, and all the members of her supervisory committee.

Ethical Statement

Ethical Approval

The Health Research Ethics Board of the University of Alberta approved the study protocol for this CLSA secondary analysis (reference number: Pro00129373). The original CLSA protocol was reviewed and approved by 13 university-based ethics committees across Canada (Raina et al., 2009).

Informed Consent

The CLSA obtained informed consent from study participants before data collection (Raina et al., 2009). We did not have access to identifiable information of the participants. Details about the study are available at https://www.clsa-elcv.ca/data-collection (accessed on 06 January 2024).

Data Availability Statement

The data are available from the Canadian Longitudinal Study on Aging (https://www.clsa-elcv.ca/) for researchers who meet the criteria for access to de-identified CLSA data. The datasets used in the present study were Baseline Comprehensive Dataset (version 7.0), Follow-up 1 Comprehensive Dataset (version 4.0), and Follow-up 2 Comprehensive Dataset (version 2.0).

Supplemental Material

Supplemental material for this article is available online.

Note

Disclaimer: The opinions expressed in this manuscript are the authors' own and do not reflect the views of the Canadian Longitudinal Study on Aging.

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CHAPTER SEVEN: MANUSCRIPT FOUR

Personality traits and coping with fear of falling: An interpretive description study of older adults in Canada

Citation:

Adandom, H. C., Damag, S., Kalu, M. E., Adandom, I. I., Odole, A. C., Cook, L. L., Shan, G., & Awosoga, O. A. (2025). Personality traits and coping with fear of falling: An interpretive description study of older adults in Canada. *Journal of Health Psychology.* https://doi.org/10.1177/13591053251392358.

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7.1 ABSTRACT

Fear of falling (FOF) can disrupt older adults' mobility, autonomy, and emotional well-being. While psychological correlates are increasingly recognized, little is known about how personality traits shape coping responses to FOF as lived experience. This study used interpretive description informed by the transactional model of stress and coping to explore personality-linked coping orientations. Fifteen community-dwelling older Canadians (aged 65–84) completed in-depth interviews and a brief personality inventory. Reflexive thematic analysis revealed three coping orientations: cautious behavior as a meaning-making strategy, self-reliance and threats to autonomy, and adaptive engagement with support systems. Traits like conscientiousness and emotional stability influenced appraisals of control, while low extraversion tended to involve selective, trust-based support-seeking. Findings suggest that coping with FOF is not merely behavioral but reflects the dynamic interplay of personality, appraisal, and identity. These insights support the development of tailored, psychologically informed FOF interventions.

Keywords

Fear of falling, personality traits, social support, coping, older person, qualitative methods

7.2 INTRODUCTION

Fear of falling (FOF) is a pervasive concern among older adults, emerging not only from past experiences of falling but also from perceived physical vulnerability (Whitmore et al., 2024). Although fear may serve as a self-protective instinct, it often evolves into a source of psychological distress, functional restriction, and reduced quality of life (Schoene et al., 2019). Older adults living with FOF frequently limit physical and social engagement, risking deconditioning and further increasing their risk of falling, thus perpetuating a cycle of avoidance and vulnerability (Lee & Tak, 2023; MacKay et al., 2021). As populations continue to age globally, addressing FOF has become essential to promoting autonomy and healthy ageing.

Personality traits may play an important yet underexplored role in how older adults interpret and respond to FOF. According to the FFM (McCrae & Costa, 2008), personality comprises relatively stable traits, neuroticism (emotional instability), conscientiousness, extraversion, openness, and agreeableness, that shape emotional tone, cognitive appraisal, and interpersonal tendencies. For instance, neuroticism also known as emotional instability, has been linked to heightened fear and avoidance (Mann et al., 2006); conscientiousness to proactive planning; and openness and extraversion to adaptive coping and support-seeking (Amestoy et al., 2023; Chen et al., 2022). Despite these connections, the lived experience of how personality influences fall-related coping remains poorly understood.

While quantitative studies have identified trait-based associations with FOF (Fan et al., 2024; Mann et al., 2006), few have explored how older adults make sense of, and adapt to, fall-related fear in their daily lives. Existing research has largely focused on how personality traits correlate with outcomes such as fall risk, avoidance behaviors, or anxiety (Adandom et al., 2025; Brandes & Bienvenu, 2006; Sep et al., 2019), often overlooking the meaning-making processes

through which older adults negotiate vulnerability, agency, and support. Personality traits may influence not only what older adults do in response to FOF, but how they interpret risk and construct strategies for maintaining independence and emotional security (Pocnet et al., 2021; Troisi et al., 2024).

The transactional model of stress and coping (TMSC) (Lazarus and Folkman 1984) offers a valuable framework for exploring these dynamics. Rather than treating FOF as a static response to risk, TMSC conceptualizes stress as a product of ongoing cognitive appraisal and coping. Under this model, older adults assess fall-related threat (primary appraisal) and evaluate their perceived capacity to manage it (secondary appraisal), drawing on personality traits, social supports, and environmental context (Dong et al. 2022). Although widely used in chronic illness and caregiving research (Shavaki et al., 2020; Yuan et al., 2024), TMSC remains underutilized in the context of FOF. To address this gap, we conducted a qualitative study to examine how community-dwelling older adults in Canada experience and respond to FOF considering their personality traits. Guided by interpretive description (Thorne, 2016), this qualitative study focused on how personality traits influence individuals' cognitive appraisals, coping strategies, and the perceived value of support in everyday life. The central research question was: how do older adults in Canada cope with FOF, and how are these coping responses shaped by their personality traits?

7.3 STUDY DESIGN

We adopted interpretive description as our guiding methodological approach, rooted in an applied qualitative paradigm that bridges clinical knowledge with experiential accounts (Thorne, 2016). While interpretive description is grounded in a constructivist epistemology, acknowledging that knowledge is co-constructed between researcher and participant, shaped by

both clinical reasoning and inductive insight, our study was further anchored in a critical realist ontology. This ontological stance assumes that while falls and FOF are real events with observable consequences, the meanings, coping responses, and psychological adaptations attached to these experiences are shaped by social, cultural, and individual contexts (Willis, 2022).

Our goal was to develop practice-relevant understanding of how personality shapes coping with FOF, while also contributing to theoretical insights into the interplay between personality traits, stress appraisal, and adaptation in later life. Interpretive description is particularly suited for this aim, as it supports analytic flexibility and iterative theorization while remaining grounded in participants lived experiences and the real-world contexts of care. This approach enabled us to capture both the psychological depth and practical meaning of coping responses, offering insights that can inform person-centered intervention design. Rather than seeking theme saturation as a fixed endpoint, we prioritized information richness and interpretive sufficiency, aligning with Thorne's interpretive description's emphasis on coherent conceptualization over thematic enumeration (Thorne, 2016). Throughout the study, we recognized that our own professional and cultural lenses shaped the co-construction of meaning with participants, and we maintained a reflexive stance to engage critically with our interpretations.

Study Setting

This study was conducted in southern Alberta, a region known for its mix of urban and rural communities, with Lethbridge serving as one of its central urban hubs. The area has a growing population of older adults and a well-established network of senior-serving organizations. Most participants were recruited from Lethbridge and surrounding communities

within a 40-kilometer radius (approximately a 30-minute drive). This geographical context provided access to a diverse population of community-dwelling older adults while allowing interviews to be conducted in settings that ensured participant comfort and privacy.

Recruitment and Sampling

Participants were recruited using a combination of recruitment materials and snowballing techniques. Recruitment materials, such as posters and flyers, were displayed in high-traffic areas at Lethbridge Senior Citizens Organization (LSCO), and other community centers serving older adults, including the Nord-Bridge Seniors Centre. Snowball sampling occurred as initial participants referred others who met the study criteria. This approach was particularly useful in accessing a wider range of perspectives, including those who may not have responded to public advertisements.

We employed a criterion-based purposive strategy, where we selected participants based on specific characteristics relevant to the study's objectives. The inclusion criteria were as follows: (i) be aged 65 years or older, (ii) live independently in the community, (iii) self-identify as having experienced a fall or being at risk of falling, (iv) have no cognitive impairments that would hinder participation. Cognitive eligibility was based on self-report and researcher assessment of participants' ability to engage meaningfully with study concepts and interview questions. Participants not meeting these criteria were excluded.

Nineteen individuals expressed interest; 17 met eligibility criteria, and 15 completed interviews. Two eligible participants were unable to participate due to scheduling conflicts or personal reasons. Sampling prioritized maximum variation across age, gender, fall experiences, and personality traits to surface diverse coping perspectives. Although participants were recruited primarily through senior-serving organizations, which may limit perspectives from

more isolated older adults, snowball sampling helped broaden outreach. Following Thorne's interpretive description methodology, we prioritized conceptual richness over demographic representation or numerical saturation (Thorne, 2016). The final sample size was deemed sufficient to support analytic depth and in-depth understanding of coping with FOF (Fusch & Ness, 2015).

Data Collection

All interviews (n = 15) were conducted in person between April and September 2024, either at the LSCO, a centrally located and well-frequented community center (n = 12), or in participants' homes (n = 3), depending on their preference. These familiar and accessible locations were chosen to encourage openness and facilitate rich, in-depth discussions about falls, coping, and support systems. Each one-on-one interview lasted between 30 and 50 minutes (average = 40 minutes) and followed a semi-structured guide. The interview guide (Appendix E) was developed and refined through iterative discussions with the supervisory committee, whose members have expertise in falls research among older Canadian adults. These consultations ensured that the questions were clear, relevant, and appropriate for the target population. Two researchers conducted the interviews: the lead author (HA) conducted 10 interviews, while SD conducted the remaining five.

Before each interview, participants provided written informed consent, answered brief demographic questionnaire (including age, gender, and living situation), and completed the Ten-Item Personality Inventory (TIPI) (Gosling et al., 2003). The TIPI (Appendix F) was included only to provide contextual background on participants' self-reported traits, supporting interpretation of coping narratives. While no formal pilot of the interview guide with older adults was conducted, its development drew on feedback from the research team with expertise in falls

and aging research, together with the interviewer's prior experience with this population, with minor refinements made during early interviews to ensure clarity and participant comfort. Participants were explicitly informed that interviews would be audio-recorded and transcribed using secure software, and all provided permission before recording began. HA reviewed and corrected all transcripts to ensure accuracy and maintain the integrity of participant narratives. Data collection continued until the research team judged that sufficient information richness and conceptual coherence had been reached, consistent with interpretive description's emphasis on interpretive sufficiency rather than fixed saturation (Thorne, 2016; Saunders et al., 2018).

Research Team and Reflexivity

HA (lead author) approached the study as a Nigerian-trained physiotherapist and doctoral researcher situated within the Canadian ageing research context. This dual positioning enabled sensitivity to cultural meaning-making while also requiring reflexive distancing from interpretive assumptions. The research team included the lead author and collaborators with expertise spanning rehabilitation sciences, kinesiology, gerontology, and falls research, as well as advanced training in qualitative methodologies. Reflexivity was actively maintained through journaling, analytic memo writing, and structured peer debriefing with collaborators. These practices supported critical interrogation of interpretive assumptions and surfaced alternative explanations during analysis.

MK and IA acted as analytic collaborators, providing direct input during coding and theme development. AO, LC, GS, and OA contributed feedback on research design and interpretive decisions, strengthening methodological integrity. The team's interdisciplinary composition enriched the analysis by integrating clinical, behavioural, and sociocultural perspectives, consistent with the interpretive goals of the study.

Data Analysis

We conducted reflexive thematic analysis (RTA) as described by Braun and Clarke (2019, 2022), situated within a constructivist paradigm and guided by interpretive description. The analysis emphasized co-construction of meaning, contextual sensitivity, and applied interpretive depth. HA led the analytic process, beginning with line-by-line inductive coding of participant narratives. MK and IA served as second readers, offering interpretive feedback to refine insights and challenge assumptions. Initial codes captured experiential fragments and recurring meanings grounded in participants' own words. The approach was primarily inductive, consistent with the principles of interpretive description (Thorne 2016). Codes were iteratively grouped through constant comparison and collaborative discussion, with additional input from the broader research team.

Rather than summarizing content, themes were developed as patterned interpretive constructs that captured how personality traits shaped appraisals of fear and coping responses. Once a coherent thematic structure was established, participant accounts were considered alongside their self-reported personality traits (TIPI). TIPI was used descriptively, providing contextual background on trait tendencies to enrich interpretation, not as a dataset for formal integration. This ensured that the study remained interpretive rather than convergent mixed methods in design. At a later stage of analysis, the TMSC was applied to contextualize how participants described threat and coping appraisals. This framework was introduced post-theme development to support conceptual integration and avoid shaping coding prematurely.

To ensure analytic rigor, multiple strategies: reflexive memo writing, an audit trail documenting coding decision, and repeated peer debriefings within the interdisciplinary research team, were employed (Appendix G). These debriefings supported reflexivity and generated

alternative interpretations. Illustrative quotes were selected to demonstrate thematic coherence, variation across personality traits, and participants' meaning-making processes. In keeping with interpretive description's applied focus, analytical decisions prioritized insight with practical relevance for fall prevention and coping support, rather than abstract typologies. Together, these strategies yielded a credible, transparent account of how personality filtered the lived experiences of FOF among older Canadian adults.

7.4 FINDINGS

Participants Demographics

Fifteen older Canadians aged between 65–84, participated in this study (eight women and seven men) Participants varied in their personality orientations, with some tending toward higher conscientiousness and openness, while others displayed lower emotional stability or extraversion. Demographically, participants' variation in age, gender, fall history, and personality profiles, ensured diversity in perspectives on coping with FOF. A qualitative overview of participants' demographic and personality orientations is presented in Table 7.1.

Themes

Findings revealed that participants' experiences of FOF were not uniform but reflected an evolving, meaning-laden process shaped by personality dispositions and contextual conditions. Within an interpretive description framework, we used reflexive thematic analysis to identify three interrelated coping orientations: cautious behavior as a meaning-making strategy, self-reliance amid threats to autonomy, and adaptive engagement with support systems. To situate these orientations within broader psychological theory, we later drew on TMSC as a sensitizing lens. From this perspective, participants' strategies could be understood as responses to primary appraisals of vulnerability and secondary appraisals of coping capacity, moderated by personality

traits and contextual conditions such as social networks, environmental adaptations, and systemic barriers (Figure 7.1).

These themes capture not only behavioral adjustments but also the symbolic and emotional meanings participants assigned to fear, agency, and adaptation. Personality traits shaped the interpretive lens through which older adults made sense of vulnerability and risk, but they did not determine behavior in a fixed way. Instead, participants moved fluidly across orientations, balancing internal values with external realities to craft coping responses aligned with their identities and evolving needs. A summary of the three coping orientations, their stylistic variations, and key personality drivers is presented in Table 7.2.

Table 7.1

Participant characteristics and personality orientations

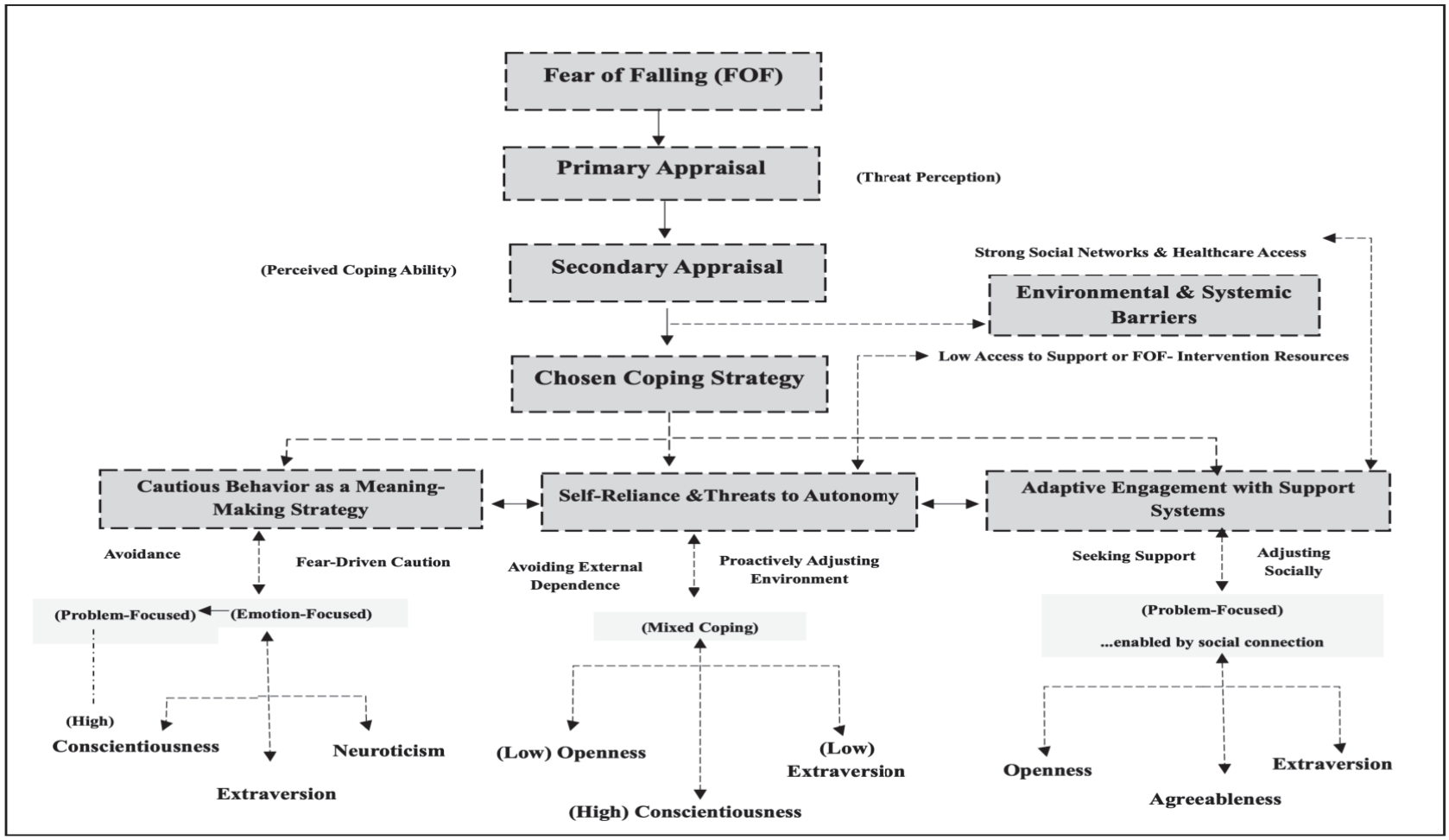
Participant ID [a]	Age	Gender	Recent fall (≤24m) [b]	TIPI [c]				
				Extraversion	Agreeableness	Conscientiousness	Emotional Stability	Openness
P01	75	Female	No	High	High	Moderate	High	High
P02	79	Female	Yes	Moderate	High	High	High	Moderate
P03	84	Male	Yes	Low	High	High	Moderate	High
P04	65	Female	Yes	High	High	High	High	High
P05	72	Female	No	Low	High	High	High	Moderate
P06	81	Male	Yes	Low	High	High	High	High
P07	72	Female	Yes	High	High	High	High	High
P08	71	Male	Yes	Low	High	Moderate	High	High
P09	82	Female	Yes	Low	High	High	Moderate	High
P10	73	Male	Yes	Low	Low	High	Low	High
P11	73	Male	No	Low	Moderate	Low	High	Moderate
P12	78	Female	Yes	High	Moderate	Low	Low	Low
P13	83	Female	Yes	Low	High	High	Moderate	Low
P14	65	Male	No	Moderate	Moderate	Moderate	Low	Moderate
P15	80	Male	Yes	Moderate	High	High	High	High

Note. [a] Numbers assigned in place of participants' names. [b] All participants self-reported at least one fall in the past five years, each resulting in pain, injury, or limitations to normal activities. [c] Each participant's TIPI trait score (ranging from 1–7) was categorized as Low (1–3.5), Moderate (4–4.5), or High (5–7.0). This categorization allowed us to describe personality profiles in a way that is more interpretable for qualitative analysis.

Table 7.2

Personality-informed coping themes in response to FOF: styles, variations, and trait influences

Coping theme	Core orientation	Variations in expression	Personality influences reflected in narratives
Theme 1: Cautious Behavior as a Meaning-Making Strategy	Caution used as an anchor for safety and reassurance	Can shift from emotionally protective vigilance to structured, proactive routines when conscientiousness is high	Emotional instability heightened vigilance: conscientiousness enabled proactive control; extraversion influenced openness to visible strategies
Theme 2: Self-Reliance and Threats to Autonomy	Independence as a central value guiding coping	Balanced between pragmatic planning and emotional protection of identity; occasionally led to reluctance to seek support	High conscientiousness reinforced planning; low openness and low extraversion shaped preference for private, individual strategies
Theme 3: Adaptative Engagement with Support Systems	Support reframed as shared resilience rather than dependency	Selective, trust-based engagement with social or formal supports; some constrained by systemic barriers	Openness and agreeableness fostered receptivity; lower extraversion shaped reliance on intimate, emotionally safe networks



Note. Dashed lines reflect variability/flexibility across coping pathways

Figure 7.1: Linking personality, stress appraisal, and coping strategies: a thematic map of FOF

Cautious Behavior as a Meaning-Making Strategy

FOF shaped participants' cautious behaviors in layered ways, functioning not only as protective action but as a strategy for emotional regulation, autonomy preservation, and continuity of identity in later life. Guided by personality traits such as conscientiousness, emotional stability, and openness, participants engaged in dynamic appraisals of risk that translated into coping responses embedded in daily routines and environments.

For those high in conscientiousness, caution emerged as a proactive, problem-focused coping strategy. Structured routines and deliberate movement were used to reclaim a sense of control, especially in environments where risk felt tangible. One participant explained:

> *"I've fallen a few times, but I'm careful, aware of my surroundings, and make sure to place my feet deliberately, especially indoors and around my dog. And I've become more mindful of my aging and the need to adjust my habits to stay safe." (P15, 80-year-old male – High conscientiousness; proactive engagement with FOF)*

Here, conscientiousness reframed FOF not as helplessness but as a prompt for self-regulation. Through the lens of TMSC, this represents a primary appraisal of fall risk coupled with a secondary appraisal emphasizing high perceived control, enabling structured, confidence-preserving behaviors. In contrast, participants low in emotional stability described FOF as more threatening, leading to emotion-focused coping centered on reassurance. One woman reflected on icy winters:

> *"I'm really afraid to fall because I've fallen on slippery surfaces before." (P12, 78-year-old female –Low emotional stability and conscientiousness; emotional vigilance in response to FOF)*

She described using shoe spikes in winter, even though she was aware they drew attention because of the noise. For her, the spikes were less about convenience and more about feeling emotionally secure in unpredictable Canadian winter conditions. This coping reflected vigilance and a prioritization of emotional safety, a choice that was pragmatic in context yet deeply tied to how she managed her fear. Participants lower in extraversion but higher in openness engaged FOF more quietly, by adapting their environment to minimize exposure:

> *"I feel safer because there's usually furniture or walls to steady myself." (P08, 71-year-old male – Low extraversion and high openness; situational, unobtrusive engagement with FOF)*

This unobtrusive strategy allowed him to preserve stability without overt displays of fear or dependence, reflecting a balance between caution and dignity. Importantly, cautious behavior was not static. Several participants described shifting from reactive avoidance to more structured, proactive management over time, often tied to conscientiousness. This highlights the adaptive and evolving nature of caution as both a behavioral and emotional anchor. Together, these narratives show that caution among older Canadian adults is not simply risk avoidance. it is a meaning-making strategy shaped by personality traits, lived experience, and environmental conditions such as icy winters, household hazards, and community safety infrastructure. By layering personality with context, caution becomes a way for older adults to assert control, reduce anxiety, and sustain valued independence in everyday life.

Self-Reliance and Threats to Autonomy

FOF shaped not only participants' physical adaptations but also their emotional landscapes, influencing how they negotiated self-reliance and autonomy in later life. For many, self-reliance was not simply a coping strategy; it was a moral stance, an identity practice, and a

deeply rooted response to how FOF threatened their sense of competence and dignity. Personality traits such as high conscientiousness, low extraversion, and low openness guided how participants evaluated risk and organized coping efforts.

Participants often described a strong preference for independent management of FOF, even when support was available. Among those high in conscientiousness, structured planning and proactive adjustments served as problem-focused strategies to maintain control over their environments. One participant explained:

> *"I'm always cautious, I use handrails on stairs, not because I'm scared… but why risk it if it's preventable? I've learned that being careful and planning ahead is the best way to avoid unnecessary falls." (P10, 73-year-old male – High conscientiousness, low extraversion; structured self-reliance in the context of FOF)*

Here, conscientiousness enabled a reframing of FOF into something manageable through planning and foresight. In TMSC terms, this reflects a primary appraisal of risk met with a strong sense of coping capacity. Others, particularly those low in openness and extraversion, described more discrete, individualized strategies:

> *"I just quietly adjust things at home. No need to make a fuss about it or get the kids involved, they've got enough going on." (P13, 83-year-old female – Low openness and high conscientiousness; subtle, independent coping with FOF)*

For these participants, self-reliance was as much about preserving emotional balance and family roles as it was about safety. Quiet adaptations minimized the risk of being seen as a burden, allowing them to sustain dignity while coping with FOF.

Skepticism toward formal support systems also appeared. Health care was sometimes framed as "too institutional" or unable to accommodate individual needs (P09, 82-year-old

female), leading participants to prioritize self-management even when services were available. In this context, the secondary appraisal judged external supports as insufficient or emotionally costly.

In some cases, this ethic of self-reliance led to challenges. For example, one woman described climbing 117 stairs during an elevator outage with her husband:

> *"We are prideful beings. If I call people for support, that means I can't do it myself, and that annoys me." (P02, 79-year-old female – High conscientiousness, low extraversion; prioritizing autonomy despite physical challenge)*

Her story illustrates how autonomy was tied to identity as much as physical capacity. Even when tasks became strenuous, independence was maintained as a way of affirming competence and control. Taken together, these accounts show that self-reliance in the context of FOF is not simply about avoiding assistance. It is a lived ethic through which older Canadian adults preserve dignity, maintain coherence of self, and manage the psychological weight of fear. Personality traits shaped not only the style of coping but also the symbolic meaning of independence in later life.

Adaptive Engagement with Support Systems

FOF influenced not only how participants navigated physical environments but also how they engaged with social and formal support systems. Engagement was shaped by personality traits such as openness, agreeableness, and, to a lesser degree, extraversion, and was often appraised not just in terms of practical benefit but also emotional safety, autonomy, and identity.

Participants high in agreeableness and openness described seeking or accepting help as proactive coping, reinforcing both safety and emotional continuity. One woman highlighted the value of her morning coffee group:

"The coffee group every morning is a lifeline… You don't feel old or worried about falling when you laugh with people who get it." (P13, 83-year-old female – high agreeableness, low extraversion and low openness; adaptive engagement within trusted social boundaries)

Here, support was not about fall prevention per se but about relational grounding and reassurance. Similarly, participants high in openness described choosing activities like aqua fit or Zumba, even when nervous, as a way of maintaining identity and resisting withdrawal. Selective engagement also emerged. Even those low in extraversion found reassurance in trusted circles:

"My friends and family remind me to be careful and know they're available when needed, which makes a difference." (P08, 71-year-old male – High openness and agreeableness; selective, trust-based engagement)

For these individuals, support was conditional on trust and emotional safety, reflecting a nuanced approach where engagement was carefully managed rather than broadly sought. Systemic factors shaped trajectories as well. One woman admitted:

"I wouldn't even know where to go for help unless my daughter looked it up. It's not that I don't want support, it's just not easy to get." (P07, 70-year-old female – High openness; adaptive intention constrained by structural limitations)

Her account illustrates how internal readiness to engage can be constrained by structural barriers, such as limited awareness of resources or accessibility. Finally, some participants deliberately kept support localized to close family ties:

"There's really no one I would talk to professionally unless it got serious. I mostly figure things out myself or ask my wife." (P11, 73-year-old-male – High emotional stability and low extraversion; relational containment of support)

Here, support was valued but contained, balancing independence with reassurance from intimate networks. Taken together, adaptive engagement with support systems was not uniform. Personality traits shaped openness to support, while cultural values of independence and practical access issues further mediated responses. Engagement served not only to manage risk but to preserve identity, emotional resilience, and dignity within the context of FOF

7.5 DISCUSSION

This study explored how personality traits influence older adults' coping with FOF in a Canadian context. Through three interrelated themes: cautious behavior as a meaning-making strategy, self-reliance amid threats to autonomy, and adaptive engagement with support systems, we observed that coping was not uniform but filtered through personality-linked appraisals of control, identity, and autonomy. While caution, autonomy, and help-seeking are well-documented in the FOF literature (Dolan & Pool, 2023; Kendrick et al., 2014; Lee & Tak, 2023), this study advances understanding by showing that personality traits shaped not only the *behaviors* adopted but also the *subjective meanings* attached to them.

Participants' narratives illustrated how personality influenced their appraisals of risk and capacity to cope. Conscientious individuals often reframed caution as proactive self-regulation rather than avoidance, integrating routines and deliberate adjustments that reinforced perceived control. This echoes Ellmers et al. (2023), who highlight the importance of perceived control in determining whether worry fosters adaptive or maladaptive responses. When falls were viewed as manageable risks, self-efficacy was reinforced through pragmatic routines such as pre-planned routes and heightened spatial awareness, reflecting internal locus-of-control orientations (Schunk & DiBenedetto, 2021). In contrast, participants low in emotional stability or openness frequently experienced FOF as overwhelming, describing reliance on aids or cautious behavior in more

anxious terms. Thus, identical strategies, such as using handrails or mobility aids, carried different meanings depending on personality-linked interpretive frames (Robinson et al., 2025).

Self-reliance emerged as both a coping orientation and a moral stance, closely tied to identity. Participants high in conscientiousness and low in extraversion often preferred to manage FOF independently, interpreting external help as a threat to competence and dignity. This resonates with evidence that older adults equate autonomy with dignity and view dependence as identity-threatening (Gardiner et al., 2017). What this study adds is nuance: traits like conscientiousness and low openness shaped whether independence was enacted as structured planning, quiet adjustments, or resistance to outside help. For some, this self-reliance preserved dignity but also placed physical demands on them. Within the selective optimization with compensation (SOC) framework (Baltes and Baltes's 1990), these accounts illustrate how personality influenced both the *selection* of autonomy as a core goal and the *flexibility* of compensation strategies.

Adaptive engagement with support reflected selective appraisals of trust and emotional security. Participants high in openness or agreeableness often sought help proactively, framing support as resilience rather than dependence. Group-based activities (e.g., exercise classes, coffee groups) provided both safety and relational continuity, consistent with Canadian studies on trust and reciprocity in aging (Bélanger et al., 2016; Gurung & Chaudhury, 2025; Mitchell & Teichman, 2025). However, others described systemic barriers, such as limited access, poor information, or service gaps, that constrained coping options. Personality shaped how these barriers were interpreted: some responded by actively seeking alternatives, while others internalized the obstacles as discouragement. This finding underscores that support-seeking is not solely about availability, but about its congruence with identity, trust, and emotional needs (Heckhausen et

al., 2019). Our findings underscore the importance of a personality-informed lens in understanding FOF. Rather than one-size-fits-all interventions, acknowledging trait-driven appraisals and identity needs can guide more individualized and respectful approaches to care.

Implications for Practice

These findings underscore the value of *personality-informed approaches to FOF interventions*. While physical and cognitive programs can improve confidence and stability, our results suggest that layering psychosocial dimensions, such as identity preservation and emotional adaptation, may strengthen their impact. Tailoring support to personality profiles could enhance uptake: structured, autonomy-preserving plans may resonate with highly conscientious individuals, while those low in emotional stability may benefit from reassurance and confidence-building. Importantly, framing support-seeking as strategic adaptation rather than dependency may improve acceptability across traits. Healthcare providers should be trained to recognize different coping orientations and adapt communication accordingly, especially in culturally diverse older adult populations. Addressing informational and access barriers is crucial. Personality may shape willingness, but the environment shapes opportunity. Ensuring clear, trusted pathways to FOF support, through senior centers, public health campaigns, or peer programs, can bridge this gap.

Limitations and Future Research

Certain limitations should be noted. First, the sample, while diverse in personality profiles, was drawn from a single Canadian region and skewed toward community-connected older adults. This may limit transferability to more socially isolated or medically complex populations. Second, personality was assessed through self-report and thematically interpreted. Although this approach aligns with the study's interpretive focus, future work could integrate

additional indicators, such as observational or physiological markers of anxiety regulation, to enrich understanding. Third, the study is cross-sectional in its temporal scope, capturing participants' perspectives at one point in time. Longitudinal qualitative designs could provide valuable insight into how coping orientations evolve across repeated fall episodes or life transitions (e.g., injury, bereavement, or institutionalization).

Future research should explore how personality traits interact with cultural context, socioeconomic positioning, and health system responsiveness to shape coping with FOF. Current interventions predominantly emphasize physical training or generic fall-prevention strategies (Drahota et al., 2024). While effective to some extent, evidence suggests these approaches achieve only modest and short-lived reductions in FOF (Hu et al., 2024). Our findings indicate that complementary interventions focusing on psychological resilience, identity preservation, and perceived control may be essential. Potential avenues include trait-informed motivational interviewing, narrative-based therapeutic approaches, or digital self-management tools that support both practical safety and psychological adaptation.

7.6 CONCLUSION

This study advances understanding of how personality traits shape older adults lived experiences of FOF, demonstrating that coping is a multidimensional process encompassing emotional regulation, identity preservation, and social negotiation. Rather than viewing FOF solely as a behavioral consequence of physical risk, our findings position it as a psychological response filtered through perceived control and personality-driven appraisals. By highlighting how older adults interpret and manage FOF in ways that are adaptive, situationally responsive, and anchored in personal values, this study underscores the importance of tailoring interventions to individual coping orientations. Personality-informed frameworks that recognize differences in

emotional reactivity, self-reliance, and openness to support can strengthen the responsiveness of FOF programs, particularly in culturally comparable aging contexts such as Canada and other Western societies. Supporting older adults to maintain autonomy, confidence, and social participation amidst fall-related fears is not merely a clinical task but a relational and identity-affirming goal.

Acknowledgments

We sincerely thank all participants for generously sharing their time and experiences, which made this study possible. Special appreciation goes to the Lethbridge Senior Citizens Organization (LSCO) for their invaluable support in participant recruitment.

Ethical approval

Ethical and research governance approvals were obtained from the University of Alberta Research Ethics Board [ID: Pro00134581].

Consent to participate

Informed consent (written) was obtained from all participants prior to the interviews. Participants were informed of their right to withdraw at any point without consequence. Consent was reaffirmed throughout the study in line with best practices for qualitative research.

Consent to publication

All participants consented to the use of anonymized quotes in publications. Identifying information was removed, and confidentiality was preserved using participant codes in all transcripts and published materials.

Funding

The authors received no financial support for the research, authorship, and/or publication of this article.

Declaration of conflicting interests

The authors declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

Data availability statement

Full transcripts are not publicly available to protect confidentiality. An audit trail documenting coding, theme development, and reflexive decisions was maintained to ensure transparency. Analytic methods are detailed in the manuscript. The study was not preregistered due to its exploratory qualitative design.

Supplemental material

Supplemental material for this article is available online.

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CHAPTER 8: MANUSCRIPT FIVE

Under Review at Journal of Black Psychology

Fear of falling at everyday thresholds among older Nigerian adults: An interpretive description

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8.1 ABSTRACT

This study examined how older Nigerian adults appraise and cope with fear of falling (FOF) and how local context and personality shape usable responses. Using Interpretive Description with reflexive thematic analysis, we analyzed interviews with 24 community-dwelling adults aged 60–75 in Abuja and Jos. Fear was place bound: it condensed at specific thresholds such as wet tiles, stair edges, night corridors, and rain-slick entries, and thinned elsewhere. Participants translated appraisals into procedural composure through brief, teachable micro-scripts, including pause–scan–step on stairs, sit-and-reset with dizziness, and guaranteed-dry tile entry. Many reframed fears as caution, drew on faith to set a steady state, and selected visible or discreet supports to protect dignity. Coping was co-produced with peers, clinicians, family members, and transport workers through groups, WhatsApp prompts, situated coaching, and real-time negotiation. Personality functioned as a delivery lens that shaped preferred wrappers for the same content rather than a fixed determinant. Findings provide African-based evidence relevant to Black aging scholarship and point to meso-level delivery models in Nigerian cities that protect mobility, dignity, and independence.

Keywords: Accidental Falls; Fear; Aged; Personality; Environment Design; Social Support; Nigeria.

8.2 INTRODUCTION

Falls are the second leading cause of unintentional injury-related deaths worldwide, disproportionately affecting adults over 60 (World Health Organization, 2021). Beyond the physical consequences, falls often precipitate fear of falling (FOF), a persistent concern about falling that disrupts daily routines, limits independence, and diminishes quality of life (Birhanie et al., 2021; Ellmers et al., 2023b; Hajek & König, 2020; Lee & Kim, 2024). FOF can arise from a prior fall or simply a heightened sense of vulnerability, yet in both cases it is strongly associated with activity avoidance and accelerated functional decline (Young & Williams, 2015). Much of the existing research has framed falls and FOF primarily through biomedical and environmental lenses, emphasising musculoskeletal deficits, comorbidities, and hazardous home environments (Clemson et al., 2019; Lee, 2021; Oppong-Yeboah et al., 2024). However, these perspectives underplay psychosocial influences, including how individuals interpret risk, marshal coping strategies, and draw on support systems.

Emerging evidence suggests that personality traits, particularly those described by the Five-Factor Model (FFM), may shape how older adults appraise risk, regulate emotion, and engage in fall-preventive behaviours (Chen et al., 2022; Fan et al., 2024; McCrae & Costa, 2008). For instance, high neuroticism (low emotional stability) has been linked to heightened vigilance and worry, whereas high conscientiousness supports proactive health behaviors and structured adaptation (Bogg & Roberts, 2013; Fan et al., 2024; Mann et al., 2006; Regzedmaa et al., 2024). Yet, much of this literature comes from Western contexts with established healthcare systems and individualistic cultural norms, raising questions about how these dynamics manifest elsewhere.

In sub-Saharan Africa, and Nigeria in particular, older adults face intersecting challenges: limited access to healthcare, hazardous built environments, and shifting family structures due to migration and economic pressures (Adamek et al., 2022; Eboiyehi, 2010). These realities interact with cultural expectations of aging, shaping how fear is understood, experienced, and managed (Okoye et al., 2021). While some quantitative studies in Nigeria have examined personality in relation to retirement, general health, or mobility outcomes (Adejumo & Adegbite, 2010; Ndubuaku et al., 2023; Ogunsemi et al., 2023), qualitative accounts of how personality intersects with FOF remain absent.

This study addresses this gap by exploring how older Nigerian adults interpret and cope with FOF, and how personality traits inform their coping strategies and support-seeking behaviours. We adopt interpretive description guided by RTA, with the transactional model of stress and coping (TMSC) serving as a sensitizing lens at the stage of interpretation (Braun & Clarke, 2019, 2022; Lazarus & Folkman, 1984; Thorne, 2016). This approach allowed us to attend to the lived realities of older adults, interpret patterns of meaning in relation to personality tendencies, and generate insights that have practical relevance for fall-prevention supports in resource-constrained settings.

8.3 METHOD

Research Design

We employed a qualitative approach using interpretive description with RTA (Thorne 2016, Braun & Clark, 2006, 2019) to explore how older Nigerian adults interpret and cope with FOF and how their personality traits shape this process. Methodological fit in the Nigerian context is supported by prior use of interpretive description in hospital rehabilitation with clinician participants (Adandom et al., 2020), which we complement here with community-

dwelling older adults and a focus on FOF. The constructivist orientation of interpretive description supports the development of practice-relevant knowledge while honouring the particularity of lived experiences. The research team engaged as active interpreters throughout, acknowledging the hermeneutic and relational nature of meaning-making.

Setting

Fieldwork occurred in North Central Nigeria in Abuja and Jos, urban centers that combine modern development and deep-rooted cultural traditions (Akinrolie et al., 2020). These culturally familiar contexts supported trust and rich narration. To reduce access barriers, interviews were offered in person and online.

Participants

We recruited 24 community-dwelling older adults living in Abuja and Jos. Participants were eligible if they: (a) were aged 60 years or older, (b) lived independently in the community, (c) reported an experience of falling or perceived themselves at risk, and (d) had no cognitive or communication impairments precluding reflective interviewing. We excluded those unable to provide informed consent or sustain conversation.

A criterion-based purposive strategy was used, supplemented with snowballing. Recruitment notices were shared through community forums such as the Coalition of Societies for the Rights of Older Persons in Nigeria (COSROPIN), posted in public spaces, and distributed in hospitals (University of Abuja Teaching Hospital, Jos University Teaching Hospital). Twenty-seven people expressed interest; three were ineligible or withdrew, yielding 24 interviews. Sampling emphasized information power across age, gender, fall history, and context while avoiding over-stratification.

Participants ranged in age from 60 to 75 years (M = 67), with men (n = 13) and women (n = 11) represented in roughly equal numbers. Most reported a recent fall within the past 24 months (n = 14), while the remainder described either near-falls or ongoing concerns without a recent event. Self-reported personality bands varied: many participants located themselves in the medium–high range for conscientiousness and agreeableness, with mixed levels of emotional stability, openness, and extraversion. These profiles are used descriptively, as indicative tones rather than determinants (Table 1).

Procedure

Following ethics approval, participants provided informed consent and completed a short demographic form and the Ten-Item Personality Inventory (TIPI) (Gosling et al., 2003) for descriptive context. Interviews were scheduled according to participant preference. Interviews (n = 24) were conducted between October 2023 and February 2024. Both in-person and online formats were used to reduce mobility and access barriers. Conversations lasted 40–65 minutes (median = 45). A semi-structured narrative protocol was used, beginning with open storytelling and moving to probes about appraisal, coping strategies, bodily experiences, and support systems. The guide was refined after two pilot interviews (one online, one in person). All interviews were audio-recorded with permission, transcribed verbatim, and verified against recordings. Field notes and memos were written after each session.

Table 8.1

Participants characteristics and personality orientations

Participant ID	Age	Gender	Recent fall (≤24m) [a]	Location [b]	TIPI [c]				
					Extraversion	Agreeableness	Conscientiousness	Emotional Stability	Openness
P01	70	Female	Yes	Abuja	Low	High	High	High	High
P02	75	Female	No	Abuja	Moderate	High	High	High	Low
P03	60	Male	Yes	Abuja	Moderate	High	High	High	Moderate
P04	73	Male	No	Abuja	High	High	High	High	High
P05	69	Male	Yes	Abuja	High	High	High	Low	High
P06	75	Male	Yes	Abuja	High	High	High	Moderate	High
P07	69	Male	Yes	Jos	Low	High	High	High	High
P08	62	Female	Yes	Jos	High	Moderate	High	Moderate	Moderate
P09	60	Female	Yes	Abuja	Low	High	High	High	Moderate
P10	60	Female	No	Abuja	Moderate	High	High	High	High
P11	67	Female	Yes	Abuja	High	High	High	High	High
P12	60	Female	Yes	Jos	Low	High	Low	High	High
P13	70	Female	Yes	Abuja	Low	Moderate	High	Moderate	High
P14	65	Male	No	Jos	Moderate	High	High	High	Moderate
P15	65	Female	No	Abuja	High	High	High	High	High
P16	63	Female	No	Abuja	High	High	High	High	High
P17	71	Male	Yes	Abuja	Low	High	Moderate	High	High
P18	65	Male	Yes	Jos	High	High	High	Moderate	Moderate
P19	60	Male	No	Jos	Moderate	High	High	High	High
P20	75	Male	Yes	Jos	Low	High	Moderate	Moderate	Low
P21	60	Male	No	Abuja	High	High	High	High	High
P22	60	Female	Yes	Abuja	Moderate	High	High	High	High
P23	65	Male	No	Abuja	Low	High	High	High	High
P24	60	Male	No	Abuja	High	High	High	High	High

Note. [a] All participants self-reported at least one fall in the past five years, each resulting in pain, injury, or limitations to normal activities. [b] Participants in Abuja were conducted in-person, while Jos was online. [c] Each participant's TIPI trait score (ranging from

1–7) was categorized as Low (1–3.5), Moderate (4–4.5), or High (5–7.0). This categorization allowed us to describe personality profiles in a way that is more interpretable for qualitative analysis.

Interview Protocol

Interviews followed a semi-structured narrative format, beginning with an unstructured opening to elicit personal accounts of FOF, followed by flexible prompts on appraisal, coping, and support. The guide (Appendix E) broadly explored participants' experiences of falls and near-falls, environmental and bodily factors influencing fear, the perceived role of personality traits, coping strategies, social supports, and recommendations for care. Prompts were adapted responsively to participants' narratives to encourage depth without leading. Two pilot interviews (one online, one in person) informed minor refinements to phrasing and pacing.

Researcher's Characteristics and Reflexivity

The lead author (HA), a Nigerian-trained physiotherapist and doctoral researcher, brought insider familiarity with aging and mobility in Abuja while maintaining critical distance through doctoral training. Reflexivity was sustained through journaling, analytic memos, and peer debriefs with co-authors (IA, MK). The interdisciplinary team included expertise in qualitative methods, rehabilitation/falls, primary care, and Sub-Saharan African gerontology. This breadth ensured diverse interpretive perspectives and safeguarded against narrow readings.

Ethical Approval and Consent

Approval was obtained from the University of Abuja Teaching Hospital (UATH/HREC/PR/342) and the Jos University Teaching Hospital (JUTH/DCS/IREC/127/xxx/503). Participants provided informed consent. Confidentiality was maintained by assigning numerical identifiers to participants and storing all data securely

Data Analysis

Data were managed in NVivo 12 and analyzed inductively using reflexive thematic analysis within an interpretive description framework. The analytic process involved transcript

verification, immersion in the data, generation of line-by-line codes with reflexive memoing and grouping of codes into clusters that captured recurring patterns (e.g., bodily sensations, places, times, coping procedures, social relations). Clusters were iteratively refined into themes through repeated engagement with the data, renaming, and pruning.

Peer debriefs with IA and MK served to challenge assumptions, prompt deviant-case exploration, and enhance interpretive rigor. Writing was treated as part of the analytic process, with excerpts revised to demonstrate both central patterns and variation. After themes stabilized, transcripts were re-read alongside participants' personality profiles (Low, Medium, High) to identify resonances and inconsistencies between dispositional tone and coping narratives. Personality measures informed interpretation but did not guide coding or categorization. TMSC (Lazarus & Folkman, 1984) was applied after theme development to articulate processes of appraisal, coping, and re-appraisal. A documented audit trail captured all analytic decisions (Appendix H).

8.4 RESULTS

Overall, analysis produced three interlinked, practice-facing themes: living with uncertainty as placed-bound appraisal, composure-in-action: turning fear into procedures and meanings, and social architectures of safety: co-producing what one body cannot do alone. A light TMSC arc runs across them. Participants offered finely grained threat appraisals (this surface, at this time, in this body), enacted coping appraisals (what can be marshalled here), and described re-appraisals as procedures proved effective. Personality profiles were consulted after theme development as a sensitizing lens that shaped how the same content was best offered (Figure 8.1).

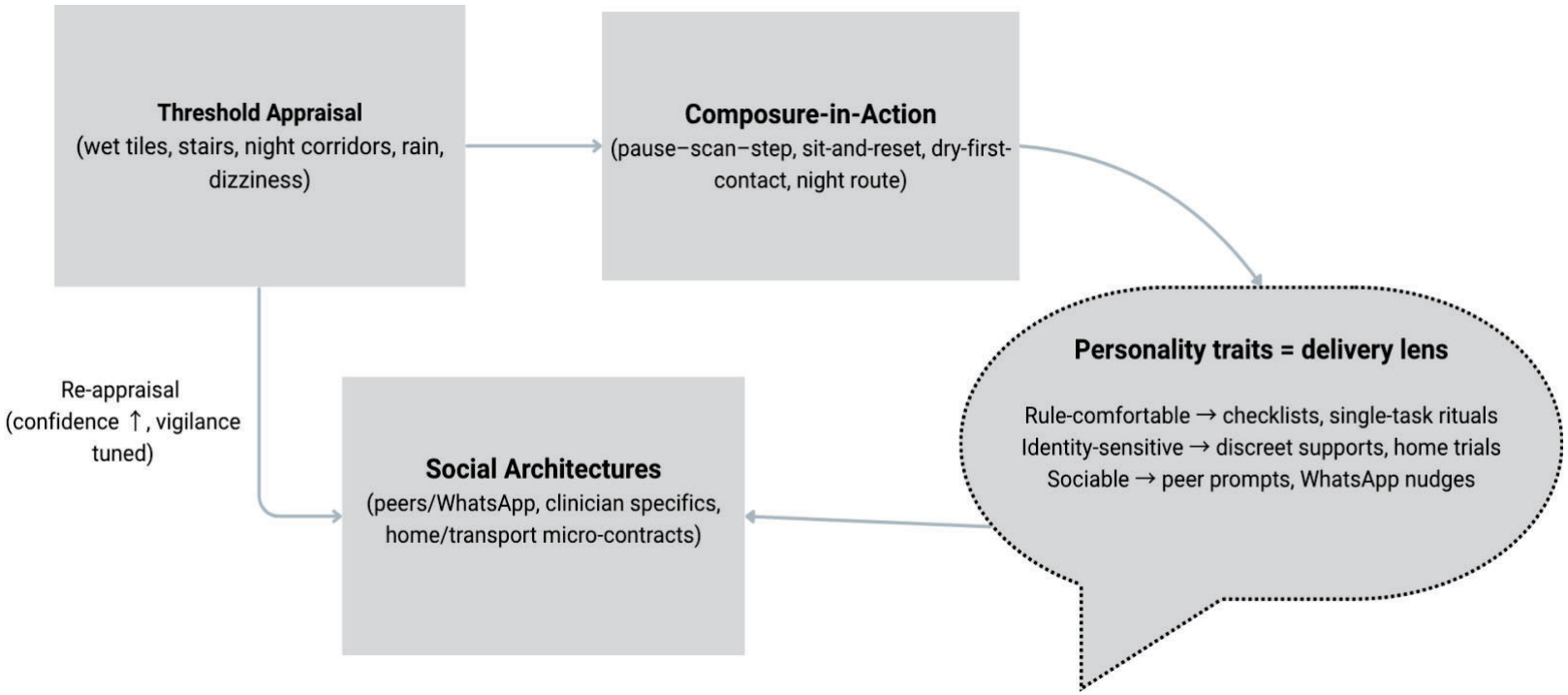

Figure 8.1: From threshold appraisal to composure and co-production (with re-appraisal)

Theme 1: Living with Uncertainty as Place-Bound Appraisal

Fear did not arrive as a vague personality feature; it condensed on thresholds that bodies had learned to recognize. Participants remembered wet, glossy tiles that "change the ground", stair edges that "become a task," and corridors at night when balance feels "not yet ready." One participant traced the origin of this vigilance to a bathroom slip:

> *"It was a water that poured on the tile; I slipped… it was a slippery ground, and I hit my knee on the ground… At times it reoccurs… The environment is not always smooth, during rainy season you can step on smaller things, misstep, and it goes again… At my age you don't run; you take it step by step. (P18, 65-year-old male)*

His account shows the way a single episode is archived in the body, so that later movement is not generalized avoidance but locally cautious, a paced approach to surfaces that have proven treacherous.

For others, stairs shifted from background to deliberate crossings. P17 (71-year-old male) described visiting a friend on the third floor: "I slipped once… because of that fall I rarely go out, and when I do, I am careful." The staircase, once ordinary architecture, becomes a foreground task requiring concentration and a slowed rhythm; risk is time- and place-bound, not everywhere at once. P12 (60-year-old female) layered multiple events, "more than five times… stairs last week, tiles this time," into what reads like a personal hazard map: stairs, tiles, and her rocky neighborhood each demand a different kind of attention. Within an interpretive description frame, these are treated not as idiosyncratic anecdotes but as practice knowledge: how people reorganize attention to move through the places where fear gathers.

Risk was not only outside the body. A few participants spoke about internal thresholds, moments when dizziness, fatigue, or the "head not yet steady" made routine transitions

precarious. P19 recalled feeling light-headed and "seeing himself on the ground" before he had time to act; he now listens for that signal and inserts a micro-pause: stand still, sit if needed, then proceed. When a specialist later taught him "how to walk on tiles," he also edited the environment, removing shiny surfaces at home so the inner and outer thresholds aligned with safer movement. In TMSC terms, these are finely grained threat appraisals that combine interoception ("am I steady?") with situation ("this tile, these steps, tonight").

> *"I was feeling dizzy… before I knew it, I saw myself on the ground. I managed to go down slowly; I didn't sustain injury… A specialist told me to be very careful, not to hit my leg [has had knee surgery] … I removed shiny tiles from my house, did everything comfortably for myself and family." (P19, 60-year-old male)*

Public space layered a social reading onto these thresholds. Several participants, especially men, named the shame of a public fall as part of what they were managing. One participant kept exercise within his home:

> *"I do exercise inside the compound; I don't enter the road [referring to his neighborhood] to do it… It is a disgrace for one to be falling like that… You must tame yourself. Imagine me falling on the road, my son would be an object of caricature… So, I listen to my body: if it hasn't told me the truth, I stay indoors; whatever happens to me should happen inside, not outside." (P23, 65-year-old male)*

Here fear is not withdrawal from life; it is route design and time-of-day selection that protect dignity while maintaining movement. This attention to the meanings of being seen helps explain why some participants re-name fear as "caution" or "composure," a framing that legitimizes the procedures they will describe next (pause–scan–step at stairs; dry-first contact on tiles; sit-and-reset with dizziness).

Taken together, this theme showed FOF as situational and teachable. Participants do not tell us "I might fall anywhere"; they show us where and when appraisal spikes, wet tile just after bathing, the first step down, the night corridor, the crowded curb after rain, the moment of head-rush. In interpretive descriptive terms, this is actionable patterning, thresholds that call for micro-scripts, not blanket restriction. This re-composition of attention at thresholds sets up Theme 2, where participants convert these appraisals into procedural composure, brief, repeatable sequences that allow movement to continue.

Theme 2: Composure-In-Action: Turning Fear into Procedures and Meanings

Once thresholds were named, participants right sized those moments with short sequences that made movement doable again. Composure here is not the disappearance of fear; it is a *practiced way of moving*, what to do next, in *this* body, at *this* threshold. For P07, scattered incidents became a method. He narrates the turn from episode to routine:

> *"I fell… the next day, I fell again… three weeks later it happened again. After that last one I told myself, you must not fall again. So, I use a walking stick, people say, 'you're not that old,' but whether I'm old or not I won't leave it until I am stable. It's that fear of falling and common sense that make me continue using it… Once I get to any staircase, I stop, I think, and I concentrate on the staircase until I finish it." (P07, 69-year-old male)*

The staircase shifts from architecture to task, and the stick becomes permission to keep moving while stability returns. Others folded micro-resets into night routes that protect both balance and dignity. P12 declines a public stick but shows a low-visibility alternative that works:

> *"No, I don't use a stick… If I wake up to ease myself in the night, I use the wall to support myself… From my room to the toilet is not far; I hold the wall till I reach so that I will not fall." (P12, 60-year-old female)*

The tactic is simple and repeatable: single task the corridor, keep one stable point of contact, arrive unremarked. Some participants renamed the emotion to open space for action. "Fear" becomes "consciousness," "caution," or simply composure. P15 (65-year-old female) describes a self-study that yields two guards for transitions and attention load: "Before I stand up from bed at night, I sit and allow my head to rest… If I'm thinking of something and I start walking, I will fall. If I free my mind first, I won't fall." In practice terms, this is a compact rule: pause to steady, then one task at a time.

For others, prayer sets the state before the body moves, a different register that dovetails with careful pacing. P09 (60-year-old female) frames it step-by-step: "God did not give us the spirit of fear… before you go out, pray, 'I have fallen before; I don't want to fall again.' You pray, then you are conscious of how you move, so you won't fall… You have already captured that fear by praying, go out with confidence and come back." The sequence is recognizable: settle, name intention, proceed carefully.

Devices were never just devices; they were public signs to be negotiated. Where the social reading was supportive or culturally normal, a stick was welcomed as capability. P18:

> *"The walking stick will form another leg, the third leg where your body can lean. If you are standing and discussing, the walking stick will be another leg." (P18, 65-year-old male)*

Where the stick risked signaling frailty, participants preferred discreet substitutions, walls, furniture routes, textured mats, so the same content (added stability) arrived in a different wrapper. Read through the TMSC, these are coping appraisals ("what can I marshal here: a pause, a wall, a prayer, a stick?") followed by re-appraisal as the procedures work ("when I do it this way, I can move again"). In interpretive description terms, composure is crafted in small,

teachable sequences, *pause-scan-step* on stairs; *sit-and-reset* for head-rush; *hold-the-wall* night routes; *pray-then-proceed*, that preserve identity and keep people moving in the places that matter.

Theme 3. Social Architectures of Safety: Co-Producing What One Body Cannot Do Alone

Coping rarely sat with one person. Participants pictured, and in some places had already built, small social arrangements that made vigilance ordinary: walking with a neighbor, Zone chat groups on WhatsApp, brief clinician talks where hazards are named in the language of everyday surfaces. One participant captures the feeling of movement that changes in company and becomes a plan:

> *"At times I go for a walk… maybe with a colleague, friend, or neighbor. If they are walking, I follow… I stroll with somebody. If we can form a group that does exercise, it will be better." (P12, 60-year-old female)*

The companionship is not decorative; it paces the body, sets a gentle speed, and, crucially, turns intention into a repeatable appointment. In some parts of Abuja, a peer infrastructure already exists. P22 describes Zones 1–7 meeting in the mornings, connected by WhatsApp, and inviting health workers to translate caution into routine

> *"Because we go every morning, we meet each other. We formed a WhatsApp group, Zone 1 to Zone 7… We invite health workers to come and talk to us, anything beneficial on health and exercise." (P22, 60-year-old female)*

P20 (75-year-old male) imagines the same structure for places without it; "experience sharing… people have to be a group… even virtual" and asks for a physiotherapist "to give hints on how to prevent these things and what to do immediately if it happens." Across these accounts, knowledge moves laterally (what works here, for this tile, this curb) and is lightly

professionalized with short, targeted teaching. Participants also wanted situated and humane clinical coaching: advice that names the hazards they face, delivered in a tone that helps effort land. P08) is concrete about materials and footwear:

> *"Doctors should emphasize safety at home, especially tiles… there are tiles for the floor and there are tiles for the wall… many commercial houses use very slippery ones… And moderate heels or comfortable shoes, doctors should emphasize that." (P08, 62-year-old female)*

The request is not for more pamphlets; it is for material-specific guidance and a way of speaking that treats people as capable partners. Where formal infrastructures thin, people stitch safety in motion with others: a neighbor dries a wet entryway; a grandchild walks the evening loop; a rider is asked to moderate speed. P09 narrates the on-the-fly contract older bodies make with transport:

> *"Fuel is costly, sometimes you must take a bike. While riding I tell them, 'Na mama you dey carry o, please calm down.' Especially on the speed bumps, they just jack you up. I calm them… Some are good—when you talk to them, they will calm down." (P09, 60-year-old female)*

These micro-negotiations recalibrate the situation in real time; threat appraisal softens as context shifts, and coping expands because others adjust. Prompts mattered. P11 (67-year-old female) ties her daughter's presence to activity and to the micro-routines that otherwise fade: "When you don't have somebody to prompt you, you relax… When she was around, we walked together… she'd put music and do exercises and I follow." Prompts here are not discipline; they are scaffolds, a nudge that starts the body moving, then movement sustains itself.

Alongside peers and family, several participants pointed to a meso-level gap: ordinary places and groups where older adults can move, learn, and be addressed with respect. P01 (70-year-old female) folds design and content into the same ask: “We should have an exercise building or something… where adults like me can relax and interact… and even talk about food and calcium so bones don’t get brittle.” This is not a clinic; it is a local room with the right rhythm, light activity, brief teaching, social time.

Across these accounts, safety becomes relational practice. Peers normalize vigilance; clinicians name hazards in locally intelligible ways; everyday others, neighbors, riders, helpers, are enlisted to make movement possible. In TMSC, appraisal is co-verified (a friend slows the pace, a rider eases the bump) and coping resources are pooled (groups, prompts, micro-rules). In interpretive description terms, the practical implication is straightforward: the same micro-scripts from Theme 2 (pause–scan–step; sit-and-reset; dry-first-contact; shoe choice) scale better when they are embedded, circulated through WhatsApp zones, practiced in walking circles with brief, respectful teaching, and supported by small negotiations in the places people actually move.

Taken together, imagined walking groups, neighborhood WhatsApp zones, peer-to-peer exchanges, material-specific clinical advice, and on-the-fly transport “micro-contracts” form the social architecture that lets individuals keep moving when the ground, and the day, can change.

8.5 DISCUSSION

This study reframes FOF as a situational signal that condenses at specific thresholds rather than a diffuse state. Participants located fear on wet, glossy tiles, stair edges, night corridors, and rain-slick entries, and reported relative ease elsewhere. In peri-urban Nigerian settings, often tiled, variably lit at night, and exposed to seasonal rain, this granularity turns generic “home safety” into coachable crossings keyed to surface, lighting, and time of day. This

extends established evidence that bathrooms and stairs concentrate risk and that the built environment shapes falling and FOF, by specifying *how* older adults read and act on those micro-terrains (Blanchet & Edwards, 2018; Stevens & Burns, 2015; WHO, 2007).

What followed in our data was not retreat, but procedural composure, short, teachable micro-scripts that right-size risk at the point of movement (e.g., pause–scan–step on stairs; sit-and-reset when dizziness intrudes; dry-first contact on tile). These sequences operate as attention designs where worry might otherwise disrupt sensorimotor control, aligning with work showing that FOF alter anticipatory postural control and are themselves linked to future falls; and with lifestyle-integrated approaches that embed balance and strength into daily routines (Clemson et al., 2012; Ellmers et al., 2020, 2023b).

The social reading of visible tools made the social world palpable in the body. A cane was never only biomechanical: some participants framed it as a capability extender ("third leg"), while others preferred low-visibility supports to preserve dignity; in some settings, sticks read as status-congruent. These patterns echo and extend qualitative studies showing that identity, stigma, and social image shape aid uptake and everyday negotiations about mobility, suggesting that device advice should be culturally legible and identity-protective (Gooberman-Hill & Ebrahim, 2007; Rogers & Musselwhite, 2023).

Coping was also co-produced. Participants normalised vigilance and traded practical fixes in peer formations (walking companions, neighborhood chat groups), and asked for situated, humane clinical coaching that names the hazards they meet (tile type, lighting for night routes, rainy-season footwear). They also described micro-contracts with household helpers and transport riders to reduce bumps and slips, small relational adjustments that recalibrate risk in motion. This points to a meso-level gap between individual capacity and tertiary services; low-

cost supports delivered through primary care and community organizations, walking circles with brief coaching, light-touch messaging, and material-specific guidance, fit both the evidence and WHO's falls-prevention framework (assessment of individual plus environmental factors, culturally adapted interventions) (WHO, 2007).

Within this interpretive picture, personality works best as a delivery lens not a determinant. Read post-hoc against descriptive profiles, accounts suggested fit. (e.g., rule-comfortable stances accepted checklists; identity-sensitive stances preferred discreet supports; sociable preferences favored prompts and peers). Literature linking personality traits, especially neuroticism (emotional instability) to FOF and fall risk exists but effects are modest and heterogeneous (Adandom et al., 2025; Mann et al., 2006; Fan et al., 2024). Taken together, our findings trace a light stress-and-coping arc: finely grained threat appraisals ("this tile, tonight, after dizziness"), pragmatic coping appraisals ("what can I marshal here: a pause, a wall, a prayer, a stick"), and re-appraisals as procedures worked ("when I do it this way, I can move again"). The contribution is to specify where and how FOF becomes actionable, and to show delivery routes that match Nigerian services and lived environments.

Implications and Future Direction

For practice, shift routine counseling to threshold-specific coaching that teaches what to do where risk concentrates: pause–scan–step on stairs; sit-and-reset with dizziness; dry-first-contact at wet/glossy thresholds; night-route single-tasking with stable handholds; and shoe choice keyed to local surfaces. Package as short, material-specific checklists (tile type, lighting, rainy-season surfaces, curb edges) and deliver identity-sensitively: discreet supports or route redesign where visibility threatens dignity; brief, reviewed cane trials where acceptable. Sustain between visits with social scaffolds (walking companions; neighborhood chat/WhatsApp

prompts) and micro-contracts at home/transport (dry the first step; no soapy mopping at dusk; slow over speed bumps). This aligns with trials and reviews showing effectiveness of environmental adaptations and lifestyle-integrated training, and with international guidance on footwear and home modification (Clemson et al., 2019; Manji et al., 2021).

Rather than invent new advice, future work should package and test this content: co-design a threshold-coaching toolkit (clinician mini-scripts, local-language handouts, home/transport prompts, dignity-aware aid guidance). Evaluate in pragmatic cluster or stepped-wedge trials embedded in primary care and community groups, pairing clinical outcomes (falls, near-falls, concern about falling, participation) with implementation outcomes (acceptability, adoption, fidelity, maintenance). Because concern about falling predicts future falls and attentional mechanisms are implicated, include brief attention-management elements (single-tasking cues at thresholds). Keep content constant while varying personality-informed delivery (rules vs discretion; peer vs solo; visible vs discreet), with adaptive sequencing to match preference and switch patterns; include an interpretive description process evaluation to capture seasonal adaptations and identity comfort in use (Ellmers et al., 2023a, 2025).

From a policy level, equip primary-care contacts (clinic visits, pharmacy BP checks, discharge) to deliver a 3-rule micro-script plus one practice demonstration; support neighborhood walking circles with monthly 15-minute clinician visits and vernacular prompts; and embed material-specific advice (e.g., floor vs wall tiles; footwear for wet seasons) in municipal/NGO aging programs, consistent with WHO's call for culturally adapted, multisectoral falls strategies (WHO 2007).

Limitations

Transferability is bounded by Abuja/Jos peri-urban contexts; rural compounds or other housing layouts may involve different flooring, lighting, and transport mixes. Interviews were conducted in English with localized phrasing, so meaning may reflect language choice and translation nuances. Community-network recruitment may have favored more proactive participants. Personality information was descriptive and consulted post-theming; we did not test trait–behavior associations. To support trustworthiness, we maintained an audit trail and triangulated with an evidence map (participant-only excerpts) and a coverage matrix documenting convergence/divergence across cases. These choices bound interpretation; they do not evaluate effectiveness or generalize beyond similar settings.

8.6 CONCLUSION

FOF appears as a situational signal that gathers at specific thresholds and invites procedural composure rather than withdrawal. Older adults reorganized movement with brief, teachable micro-scripts and co-produced safety with peers, families, clinicians, and everyday actors. Personality traits functioned as a delivery lens, shaping *how* the same content is best offered, rather than a determinant of behavior. Practically, services should pivot to threshold-specific coaching delivered in identity-sensitive ways and supported at the meso-level (walking circles, WhatsApp prompts, material-specific clinical advice) so routines persist beyond the clinic. Next steps are to co-design a threshold-coaching toolkit (clinician mini-scripts, local-language handouts, home/transport prompts, dignity-aware aid guidance) and test its effectiveness and implementation across community and primary-care settings, attending to seasonal conditions, local materials, transport contexts, and public-space dignity.

Acknowledgments

We are deeply grateful to all participants for generously sharing their time, experiences, and insights. This study was also made possible by the quiet support of individuals who assisted with participant recruitment.

Declaration of Conflicting Interests

The author(s) declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

Funding

The author(s) received no financial support for the research, authorship, and/or publication of this article.

Footnote

Ethical and research governance approvals were obtained from the University of Abuja Teaching Hospital (UATH/HREC/PR/342) and the Jos University Teaching Hospital (JUTH/DCS/IREC/127/xxx/503).

Consent to Publication

All participants consented to the use of anonymized quotes in publications. Identifying information was removed, and confidentiality was preserved using pseudonyms in all transcripts and published materials.

Consent to Participate

Written informed consent was obtained from all participants prior to interviews, with their right to withdraw at any time clearly communicated. Consent was reaffirmed during the study in accordance with qualitative research best practices. Confidentiality was maintained using pseudonyms, and all data, including audio recordings and transcripts, were securely stored

Data Availability

To protect participant confidentiality, full transcripts are not publicly available. However, an audit trail was maintained to document coding decisions, theme development, analytic steps, and reflexivity. The manuscript includes a detailed account of the analytic approach. This study was not preregistered due to its exploratory qualitative design.

Author Contribution

HA led the study design and methodology, coordinated the analysis, contributed to data acquisition, analysis, and interpretation, and drafted the original manuscript. MK and IA assisted with data acquisition and interpretation and contributed to manuscript review and editing. AO, LC, GS, and OA provided supervision and contributed to the manuscript's review and editing. All authors read and approved the final version of the manuscript.

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CHAPTER 9: SUMMARY OF KEY FINDINGS, CONCLUSION, POLICY IMPLICATIONS AND RECOMMENDATIONS

This chapter synthesized findings across the scoping review, longitudinal analysis, and two qualitative studies, drawing connections between personality traits, fall risk, and FRPC. The results show that personality helps to shape how older adults appraise risk, translate appraisal into concrete adaptations, and use supports available in their context. The chapter closes with policy and practice implications and priorities for research.

9.1 SUMMARY OF KEY FINDINGS

Across eight studies, emotional stability (higher neuroticism) and lower conscientiousness were most consistently associated with greater fall risk and fear of falling (Canada et al., 2020; Kloseck et al., 2007; Mann et al., 2006). Extraversion showed a generally protective association with FOF (Fan et al., 2024; Kloseck et al., 2007), and Type A behavior predicted higher fall incidence among men only (Zhang et al., 2004). Critically, evidence on self-efficacy was limited to a single study (Kloseck et al., 2007), and no studies addressed balance confidence. Notably, the review identified no qualitative studies linking personality to falls or fall-related psychological concerns, and no included studies were conducted in Africa, underscoring important gaps that limit synthesis and application.

The longitudinal study revealed that personality traits and health behaviors were associated with subsequent falls, and changes in these factors mattered (Adandom et al., 2025). Conscientiousness and openness were protective at follow-up. A decline in extraversion was linked to higher fall risk, suggesting that reduced engagement may signal vulnerability. Behavior change patterns were informative: smoking cessation and reduced alcohol intake were associated with higher fall risk, and increasing physical activity was associated with slightly higher risk. These patterns likely reflect health selection and transition effects rather than simple causal pathways (Fahey et al., 2023; White et al., 2023).

Together, findings indicate that static risk profiles are insufficient; monitoring change over time helps to explain who becomes vulnerable.

Taken independently, the two qualitative strands reveal a common coping arc that begins with affective and cognitive appraisal, moves into concrete environmental and behavioral adaptations, and is sustained by social or service scaffolds. Across interviews, older adults described anticipatory worry, situational scanning, and ongoing work to rebuild or protect confidence. These appraisals were translated into tangible adjustments such as modifying gait on risky surfaces, altering routes and timing, attending to footwear and lighting, planning ahead after a fall, and maintaining heightened vigilance in places or situations perceived as hazardous. Supports were drawn from trusted people and available programs, with personality shaping how guidance was sought, accepted, and sustained.

In the Canadian strand, coping centered on personally meaningful appraisals that were often supported by accessible services. Participants described using structured routines and environmental control, selectively engaging with community or clinical programs, and integrating provider advice when it aligned with identity needs such as autonomy and competence. Seasonal surfaces, night lighting, and transitions between indoor and outdoor environments frequently prompted adaptations. Personality influenced delivery preferences, for example a greater affinity for planning and checklists among more conscientious participants and greater comfort with group formats among more extraverted participants.

In the Nigerian strand, coping was worked out inside material and infrastructural limits that made vigilance and embodied awareness essential. Participants described practical self-protective adjustments in homes and community spaces, and drew on family, neighbors, and faith groups for escort, monitoring, and encouragement. Smooth tiles, uneven stairs, and poorly lit corridors commonly triggered route changes, slower pacing, and single-task movement. With limited access to formal FOF programs (Okoye et al., 2021), responses were

culturally grounded, and community based: small household rules, neighborhood prompting, and brief advice from trusted clinicians. Across accounts, personality traits shaped comfort with help-seeking, device use, and proactive planning, not by determining behavior but by guiding how support was best delivered. Rule-comfortable participants leaned toward checklists and steady routines. Identity-sensitive participants favored discreet supports and home trials. Sociable participants responded to peer prompts and shared walks.

Together, these strands demonstrate that while resources and settings differ, the underlying logic of coping is consistent: appraisal leads to adaptation, and adaptation is stabilized by social, and service supports when available. This logic provides a practical scaffold for intervention design without requiring direct comparison across contexts (Arkkukangas, 2023).

9.2 CONCLUSION

This thesis offered a multi-dimensional account of how personality traits intersect with falls and FRPC in aging. Across the evidence base, lower emotional stability (higher neuroticism) consistently aligned with greater risk of both falls and FOF, whereas conscientiousness supported more protective, structured coping. The longitudinal analysis using the CLSA showed that personality and health behaviours are dynamic and that changes matter: conscientiousness and openness were protective over time, and a decline in extraversion signalled elevated risk, suggesting that reduced social and physical engagement may be an early marker of vulnerability. The qualitative strands deepen this picture by showing how personality shapes appraisal, action, and the uptake of support in everyday environments. In Canada, coping strategies were filtered through individual appraisals and facilitated by accessible community and clinical resources. In Nigeria, coping was enacted within infrastructural constraints and informal support systems, with adaptations grounded in vigilance, embodied awareness, and household or neighbourhood solutions. Considered

together, the strands indicate that culturally grounded and personality-informed approaches are needed to bolster psychological resilience and maintain safe mobility, without assuming that one model of delivery will fit all contexts.

Policy Implications

The findings across methods indicate that fall risk and FOF are not solely physical health issues; they are psychosocial experiences shaped by personality, identity, and place. In the Canadian context, fall prevention should move beyond standardized risk checklists to include personality-informed screening and brief coaching that aligns delivery with preferences and needs. Traits such as conscientiousness and emotional stability can guide how education, safety messaging, and community programming are framed, while service pathways should support autonomy, identity preservation, and confidence building alongside balance and strength training.

In Nigeria, policy should prioritize the realities of the physical environment and the centrality of informal networks. Strengthening community-based awareness, improving micro-infrastructure relevant to falls, and embedding fall education within local caregiving and faith networks are likely to yield immediate gains. Interventions need to recognise how cultural norms and personality influence help-seeking, device use, and proactive planning (Stevens et al., 2017). Across both settings, multi-layered strategies that combine psychological insight with structural and sociocultural responsiveness are essential, and delivery should be tuned to the resources, preferences, and constraints of the people they aim to serve.

Recommendations for Future Research

Future work should examine how personality interacts with specific psychological constructs that remain under-studied in this field, particularly FSE and BC, and should do so using consistent, validated measures. Longitudinal mixed-methods designs are needed to

track how changes in personality and behaviour relate to fall trajectories and adaptation, with careful attention to selection and transition effects that may accompany smoking cessation, alcohol reduction, or shifts in activity. Research should also test personality-tailored approaches to adherence and coaching, for example through brief motivational or personalised health-coaching interventions and evaluate their feasibility and effectiveness in real-world settings. In Nigeria, context-specific studies should unpack the mechanisms through which informal networks and environmental hazards shape FRPCs in low-resource urban and rural areas. In Canada, pragmatic evaluations should assess the implementation and equity of personality-sensitive interventions across diverse populations. Cross-context studies that use shared analytic frameworks can enrich global understanding without forcing equivalence, particularly when paired with device-based measures that capture the full 24-hour movement spectrum.

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APPENDIX A: PRISMA-ScR checklist

Table 5.4

Section	Item	PRISMA-ScR checklist item	Reported on page number
Title	1	Identify the report as a scoping review.	1
Abstract			
Structured summary	2	Provide a structured summary that includes (as applicable) background, objectives, eligibility criteria, sources of evidence, charting methods, results, and conclusions that relate to the review questions and objectives.	2-3
Introduction			
Rationale	3	Describe the rationale for the review in the context of what is already known. Explain why the review questions/objectives lend themselves to a scoping review approach.	4-5
Objectives	4	Provide an explicit statement of the questions and objectives being addressed with reference to their key elements (e.g., population or participants, concepts, and context) or other relevant key elements used to conceptualize the review questions and/or objectives.	6
Methods			
Protocol and Registration	5	Indicate whether a review protocol exists; state if and where it can be accessed (e.g., a Web address); and if available, provide registration information, including the registration number.	6
Eligibility criteria	6	Specify characteristics of the sources of evidence used as eligibility criteria (e.g., years considered, language, and publication status), and provide a rationale	6-7
Information sources	7	Describe all information sources in the search (e.g., databases with dates of coverage and contact with authors to identify additional sources), as well as the date the most recent search was executed.	7-8

Search	8	Present the full electronic search strategy for at least 1 database, including any limits used, such that it could be repeated.	Figure 1
Selection of sources of evidence	9	State the process for selecting sources of evidence (i.e., screening and eligibility) included in the scoping review.	9
Data charting process	10	Describe the methods of charting data from the included sources of evidence (e.g., calibrated forms or forms that have been tested by the team before their use, and whether data charting was done independently or in duplicate) and any processes for obtaining and confirming data from investigators.	9
Data items	11	List and define all variables for which data were sought and any assumptions and simplifications made.	Table 1
Critical appraisal of individual sources of evidence	12	If done, provide a rationale for conducting a critical appraisal of included sources of evidence; describe the methods used and how this information was used in any data synthesis (if appropriate).	N/A
Synthesis of results Results	13	Describe the methods of handling and summarizing the data that were charted.	9
Selection of sources of evidence	14	Give numbers of sources of evidence screened, assessed for eligibility, and included in the review, with reasons for exclusions at each stage, ideally using a flow diagram.	Figure 2
Characteristics of sources of evidence	15	For each source of evidence, present characteristics for which data were charted and provide the citations.	Table 2
Critical appraisal within sources of evidence	16	If done, present data on critical appraisal of included sources of evidence (see item 12).	N/A
Results of individual sources of evidence	17	For each included source of evidence, present the relevant data that were charted that relate to the review questions and objectives.	Table 2
Synthesis of results Discussion	18	Summarize and/or present the charting results as they relate	15-20

Summary of evidence	19	Summarize the main results (including an overview of concepts, themes, and types of evidence available), link to the review questions and objectives, and consider the relevance to key groups.	21-23
Limitations	20	Discuss the limitations of the scoping review process.	23
Conclusions	21	Provide a general interpretation of the results with respect to the review questions and objectives, as well as potential implications and/or next steps.	24
Funding			
Funding	22	Describe sources of funding for the included sources of evidence, as well as sources of funding for the scoping review. Describe the role of the funders of the scoping review.	25

APPENDIX B: Details of the search strategy used in 4 databases

Web of Science search strategy

1. TS=(emotion* NEAR/5 stab*)
2. TS=(personalit* or extraver* or extrover* or introver* or agreeab* or conscientious* or neuroti* or openness)
3. TS=("big five" or "five factor")
4. #3 OR #2 OR #1
5. TS=(falls or faller* or frail*)
6. TS=((fear* or fright* or afraid or concern* or efficacy) NEAR/5 fall*)
7. TS=(ptophob*)
8. TS=(balanc* NEAR/5 confiden*)
9. #8 OR #7 OR #6 OR #5
10. #4 AND #9
11. #4 AND #9 and English (Languages)

APA PsycINFO search strategy

1. exp Personality/
2. (personalit* or extraver* or extrover* or introver* or agreeab* or conscientious* or neuroti* or openness).tw.
3. (emotion* adj5 stab*).tw.
4. ("big five" or "five factor").tw.
5. or/1-4
6. falls/
7. exp health impairments/
8. equilibrium/
9. (falls or faller* or frail*).tw.
10. ((fear* or fright* or afraid or concern* or efficacy) adj5 fall*).tw.
11. ptophob*.tw.
12. (balanc* adj5 confiden*).tw.
13. or/6-12
14. 5 and 13
15. limit 14 to english language

CINAHL Search Strategy

1. (MH "Personality+")
2. personalit* or extraver* or extrover* or introver* or agreeab* or conscientious* or neuroti* or openness
3. emotion* N5 stab*
4. "big five" or "five factor"
5. S1 OR S2 OR S3 OR S4
6. (MH "Accidental Falls")
7. (MH "Frailty Syndrome")
8. (MH "Frail Elderly")
9. falls or faller* or frail*
10. (fear* or fright* or afraid or concern* or efficacy) N5 fall*
11. ptophob*
12. balanc* N5 confiden*
13. S6 OR S7 OR S8 OR S9 OR S10 OR S11 OR S12
14. S5 AND S13
15. S5 AND S13 [with English language filter applied]

SPORTDiscus Search Strategy

1. DE "PERSONALITY" OR DE "AGGRESSION (Psychology)" OR DE "BODY image" OR DE "CHARACTER" OR DE "CONSCIENTIOUSNESS" OR DE "IDENTITY (Psychology)" OR DE "MOOD (Psychology)" OR DE "PSYCHOLOGICAL resilience" OR DE "SOCIABILITY"
2. personalit* or extraver* or extrover* or introver* or agreeab* or conscientious* or neuroti* or openness
3. emotion* N5 stab*
4. S1 OR S2 OR S3
5. DE "ACCIDENTAL falls"
6. falls or faller* or frail*
7. (fear* or fright* or afraid or concern* or efficacy) N5 fall*
8. ptophob*
9. balanc* N5 confiden*
10. S5 OR S6 OR S7 OR S8 OR S9
11. S4 AND S10
12. S4 AND S10 [with English language filter applied]

Note. MeSH = medical subject heading; exp = used with a MeSH term to include all narrower MeSH terms; .tw. = field codes for text word; adj# = search for records with terms within # words of each other; quotation marks (e.g., “five factor”) indicate a phrase search; * after keyword indicates truncation (e.g., fall* will retrieve “fall”, “falls”, “falling”, etc.

APPENDIX C: Characteristics of excluded studies

Author(s), Year	Title	Reason for Exclusion
Agmon et al., 2016	A cross-sectional study of the association between mobility test performance and personality among older adults.	Examined personality ↔ mobility (TUG); no falls or FRPC outcomes.
Agmon et al., 2018	The role of gender in the association between personality and task priority in older adults' dual tasking while walking.	Focused on dual task walking and task priority; no falls or FRPC outcomes.
Bosma et al., 2004	Demographic, health-related and psychosocial predictors of changes in depressive symptoms and anxiety in late middle-aged and older persons with fall-related injuries.	Outcome = depression/anxiety trajectories; did not analyze personality ↔ falls/ FRPC.
Canada et al., 2021	Cross-sectional and prospective association between personality traits and IADL/ADL limitations.	Outcome = functional limitations (ADL/IADL); no falls/FRPC
Elfering et al., 2013	Busy at work and absent-minded at home: Mental workload, cognitive failure, and domestic falls.	no personality ↔ falls/ FRPC focus
Faulkner et al., 2009	Does conscientiousness protect against recurring falls in older men?	Conference abstract only (no peer-reviewed full text)
Kloseck et al., 2008	Can personality theory help us understand risk of falls?	Conceptual/theoretical article; no primary data
LeMonda et al., 2015	The association between high neuroticism-low extraversion and dual-task performance during walking while talking in non-demented older adults	Outcome = dual-task gait/cognition; no falls/ FRPC outcomes.
Ndubuaku et al., 2023	Do personality traits predict mobility outcomes among community-dwelling older adults in Nigeria?	Examined personality ↔ mobility; no falls or FRPC outcomes
Ni Mhaolain et al., 2012	Depression: A modifiable factor in fearful older fallers transitioning to frailty?	Focused on depression among fearful fallers; no analysis of personality traits.
Sun et al., 2022	Longitudinal association between personality traits and homebound status in older adults: results from the National Health and Aging Trends Study	Outcome = homebound status; no falls/ FRPC.

Trajanoska et al., 2020	Genetic basis of falling risk susceptibility in the UK Biobank Study.	GWAS on falls; no validated psychological personality measure.
Vetter et al., 1989	Anxiety and depression scores in elderly fallers.	Outcome = anxiety/depression; no validated personality assessment
Yozawitz & Holtzer, 2016	The association of extraversion and neuroticism with prevalence of fear of falling in the elderly	Conference abstract only (no peer-reviewed full text)

APPENDIX D: Summary of scores. measurement methods of the cognitive measures used in this study

Table 6.5

Cognitive Measures	Range of Scores	Measurement Methods
Executive function		
MAT	0-52	MAT. recognized as a concise cognitive switching task. evaluates mental flexibility and processing speed by calculating a score based on the number of accurately alternated pairs of alphabets and numbers (e.g., 1-A. 2-B) completed within a 30-second timeframe. Elevated scores indicate superior performance (Lee et al., 2022; Teng 1995).
Stroop Test: interference ratio (colour/dot)	0.05-38.06	Participants were asked to respond to the color of ink on stimulus cards [i.e., colored dots. common words printed in same colors as dots. and color words printed in non-corresponding colors of ink]. An interference ratio which divided the time required to complete the last card (i.e., color) by the time required to complete the first card (i.e., dot). Lower values reflect better performance (Bayard et al.. 2011; Troyer et al.. 2006).
Psychomotor speed		
CRT: mean response time (ms) without outliers	79-9958	The mean reaction time of the participants. recorded in the CLSA dataset. was calculated as the average of the correct response of the test trials and excluded incorrect answers and timeouts. The scores of correct answers excluding incorrect answers and timeouts were used. Lower values reflect better performance (Lee et al., 2022; Tuokko et al., 2020).

APPENDIX E: INTERVIEW GUIDE

Thank you so much for taking the time to talk with me and agreeing to be part of our research. I'm here to learn about your experiences and any fears you may have about falling. We're interested in understanding if your personality might have any influence on these experiences. I want to assure you that anything you share with me will be kept completely confidential and anonymous. If you ever need to take a break during the interview, just let me know, and if you feel like stopping the interview at any point, that's okay too. Your comfort and well-being are essential to us. This interview will be recorded, and the recording can be made available to you, if required.

1. Have you fallen recently (within the past 2 to 5 years).
    a. If yes, can you describe how it happened and how you feel about it now?
    b. If no, have you almost fallen, or felt like you may fall (that you are not steady on your feet). [Pilot added prompt: Explain about the incident and how you felt at the time.]
2. Would you say you are afraid to fall? Is there something about your environment that makes it more likely that you may fall? [Pilot added prompt: “When you think of your environment, this could mean inside your home (like floors, stairs, lighting) or outside (like roads, weather, or neighborhood layout). It could also include how your body feels, balance, strength, or health changes.”]
3. Do you think your personality plays a part in your risk of falling? If yes, or no, can you explain why you believe this. [Pilot added prompt: “You may remember the short questionnaire you filled about personality. It included traits like being organized, anxious, social, open to new things, or calm. Think about whether any of those fit you, and how that might relate to your risk or fear of falling.”]

    a. do any of those fit you? How do you think that plays a role in how you respond to the risk of falling?"

4. If you are afraid you may fall, or feel a bit unsteady on your feet at times, can you tell me how you deal with that? Do you use a cane, a walker, etc.?
5. Do you have any support or help to manage the fear of falling? Can you tell me about it?
    a. Do you think this support systems have been effective for you? Do you feel more confident – that you are less likely to fall?
    b. Can you describe how your fear about falling has changed over time, changed like, your self-perception or independence?
    c. Can you think of any other support systems that you wish was available to you that could make you feel more confident about not falling?
6. Do you think people of your age that have different personalities (i.e. perhaps a bit more outgoing, cautious, or are shy) may need different strategies or support systems if they also have a fear of falling? If yes or no, could you give some examples?
7. What suggestions do you have for healthcare providers or caregivers to better support people with different personalities in managing the fear of falling?

APPENDIX F: TEN-ITEM MEASURE OF THE BIG FIVE

Ten-Item Personality Inventory-(TIPI)

Here are a number of personality traits that may or may not apply to you. Please write a number next to each statement to indicate the extent to which you agree or disagree with that statement. You should rate the extent to which the pair of traits applies to you, even if one characteristic applies more strongly than the other.

Disagree strongly	Disagree moderately	Disagree a little	Neither agree nor disagree	Agree a little	Agree moderately	Agree strongly
1	2	3	4	5	6	7

I see myself as:

1. _____ Extraverted, enthusiastic.

2. _____ Critical, quarrelsome.

3. _____ Dependable, self-disciplined.

4. _____ Anxious, easily upset.

5. _____ Open to new experiences, complex.

6. _____ Reserved, quiet.

7. _____ Sympathetic, warm.

8. _____ Disorganized, careless.

9. _____ Calm, emotionally stable.

10. _____ Conventional, uncreative.

TIPI scale scoring ("R" denotes reverse-scored items): Extraversion: 1, 6R; Agreeableness: 2R, 7; Conscientiousness; 3, 8R; Emotional Stability: 4R, 9; Openness to Experiences: 5, 10R.

APPENDIX G: CODING LIST AND DEVELOPMENT OF THEMES/ SUBTHEMES (CANADA STUDY)

Step 1: Initial Coding

Open coding was conducted using participant transcripts. Codes reflected fall-related experiences, emotional responses, coping strategies, and use of support systems. Key codes included:

- Awareness of fall risks.
- Use of assistive devices (e.g., cane, walker).
- Avoidance of icy surfaces.
- Emotional distress post-fall.
- Support from family and informal networks
- Modifying home environments (e.g., handrails, lighting).
- Limited engagement with formal support systems
- Fear of falling during specific tasks (e.g., stairs, icy surfaces).
- Proactive safety measures (e.g., footwear with spikes, bathroom slip mats).
- Anxiety about aging and decline
- Coping with reduced mobility
- Emotional resilience and cautious optimism
- Challenges in accessing healthcare
- Adapting movement patterns (e.g., "penguin walk")
- Preference for routine and order
- Gender-related differences in help-seeking

Step 2: Code Clustering

Codes were grouped into conceptual clusters based on behavioral, emotional, social, and environmental patterns:

1. **Emotionally Influenced Cautious Behavior**

- Awareness of fall risks
- Avoidance of icy surfaces
- Use of assistive devices
- Proactive safety behaviors
- Emotional distress post-fall
- Increased vigilance after falls
- Adjusted movement strategies

2. Environmental and Behavioral Adaptations

- Modifying home environments
- Maintaining order and routines
- Adjusting movement to maintain safety

3. Emotional and Physical Impact

- Anxiety about aging
- Emotional distress and fear
- Emotional resilience and recovery

4. Informal Support and Selective Engagement

- Family and peer support
- Church/community group involvement
- Selective engagement with professional systems

5. Systemic and Structural Barriers

- Limited access to healthcare resources
- Difficulties navigating formal systems

6. Self-Reliance and Autonomy Maintenance

- Preference for independence

- Avoidance of formal help
- Familiar coping routines

Step 3: Categorization of Clusters

To refine the focus of analysis, clusters were organized into broader analytical categories:

1. Coping Strategies

(Includes behavioral, emotional, and adaptive responses to fall risk)

- Emotionally influenced cautious behavior
- Environmental modifications
- Internal regulation and resilience

2. Support Systems

(Includes informal and formal sources of help)

- Reliance on family, friends, and peer networks
- Reluctance or difficulty accessing formal healthcare

3. Barriers and Constraints

(Includes structural, emotional, and cognitive limitations)

- Systemic access barriers
- Emotional withdrawal or hesitation

4. Personality as Interpretive Lens

(Personality was not coded as a theme but layered into final analysis)

- Conscientiousness: organized, proactive behavior
- Neuroticism (emotional instability): anxious or emotionally reactive coping
- Openness: curiosity, willingness to engage
- Extraversion: social engagement
- Agreeableness: trust in informal supports

Step 4: Development of Preliminary Themes

Initial themes were developed by synthesizing clustered codes with observed patterns in the data:

1. Cautious Behavior and Mindful Adjustments

- Awareness of risks and proactive planning
- Environmental strategies to support stability

2. Fear and Emotional Influence

- Anxiety-driven caution
- Emotional reactivity after health events or falls

3. Adaptive Engagement and Support Systems

- Trust in informal networks
- Conditional or limited use of healthcare

4. Self-Reliance and Independence

- Maintenance of autonomy
- Routine-driven coping and hesitation to seek formal help

Note: Themes 1 and 2 were later merged during theme refinement due to significant overlap between behavioral adjustments and emotional coping patterns.

Step 5: Refinement of Themes

Themes were revised to improve clarity and alignment with both the data and the Transactional Model of Stress and Coping (TMSC). Emotional influence, cautious behavior, and internal regulation were integrated into a single theme. Support-seeking and resistance to formal systems were combined into a flexible engagement framework.

Step 6: Integration of Personality Insights

After initial thematic refinement, personality traits were used as an interpretive framework to explain differences in coping strategies:

- High Conscientiousness: Supported proactive planning and cautious behavior.

- High Neuroticism (Low Emotional Stability): Drove anxious or emotionally charged caution.
- Low Openness: Associated with resistance to new support options or unfamiliar strategies.
- Extraversion and Agreeableness: Facilitated active engagement with social support.
- Low Extraversion: Linked to quiet, independent coping or selective social engagement.

These traits did not determine behavior directly but shaped how participants appraised fall risk and selected coping responses.

Step 7: Final Themes

1. Cautious Behavior as a Meaning-Making Strategy

- Proactive adjustments in movement and environment to minimize fall risk
- Heightened vigilance and deliberate planning for safety
- Emotional responses, including anxiety and fear, shaped by personality traits

2. Self-Reliance and Threats to Autonomy

- Strategies to preserve control and minimize dependence
- Reliance on familiar routines and informal support over formal systems
- Resilience influenced by self-sufficiency, values, and personality disposition

3. Adaptive Engagement with Support Systems

- Reliance on family, friends, and community for emotional and physical support
- Selective engagement with healthcare systems, shaped by comfort and access
- Systemic barriers affecting the ability to pursue formal help

APPENDIX H: AUDIT TRAIL (NIGERIAN STUDY)

Table 8.2

Evidence map (exemplar participant-only excerpts)

Theme	Subtheme focus	Exemplar excerpt (participant-only)
1. Living with uncertainty as place-bound appraisal	Bathroom/tiles as remembered thresholds	"It was a water that poured on the tile, I slipped… it was slippery ground, and I hit my knee on the ground… At times it reoccurs… The environment is not always smooth, during rainy season you can step on smaller things, misstep, and it goes again… At my age you don't run; you take it step by step." – P18
	Stairs demanding deliberate crossings	"I was climbing a staircase… I slipped once… because of that fall I rarely go out, and when I do, I am always very careful about it." – P17
	Internal states tipping risk	"What led to my fall is that I was feeling dizzy while I was visiting my mother. before I knew it, I saw myself on the ground. I managed to go down slowly; I didn't sustain injury… A specialist told me to be very careful, not to hit my leg [has had knee surgery] … I removed shiny tiles from my house, did everything comfortably for myself and family" – P19
2. Composure-in-action (procedures, reframing, tools/identity)	Procedural focus (stair ritual)	"I fell… the next day, I fell again… three weeks later it happened again. After that last one I told myself, you must not fall again. So, I use a walking stick, people say, 'you're not that old,' but whether I'm old or not I won't leave it until I am stable. It's that fear of falling and common sense that make me continue using it… Once I get to any staircase, I stop, I think, and I concentrate on the staircase until I finish it." – P07
	Faith-anchored composure	"God did not give us the spirit of fear… before you go out, pray, 'I have fallen before; I don't want to fall again … then you go with confidence…" – P09

Theme	Subtheme focus	Exemplar excerpt (participant-only)
	Aids as capability (identity work)	"Yes, yes. The walking stick will form another leg, the third leg where your body can lean. If you are standing and discussing, the walking stick will be another leg." – P18
3. Social architectures of safety (co-production)	Peer arrangements & motivation	"At times I go for a walk… maybe with a colleague, friend, or neighbor. If they are walking, I follow… I stroll with somebody. If we can form a group that does exercise, it will be better." – P12
	Situated clinical coaching	"Doctors should emphasize safety at home, especially tiles… there are tiles for the floor and there are tiles for the wall… many commercial houses use very slippery ones… And moderate heels or comfortable shoes, doctors should emphasize that." – P08
	Transport micro-contracts	"Fuel is costly, sometimes you must take a bike. While riding I tell them, 'Na mama you dey carry o, please calm down.' Especially on the speed bumps, they just jack you up. I calm them… Some are good—when you talk to them, they will calm down." – P09

Table 8.3

Coverage matrix (convergence/divergence across the corpus)

Participant ID	Theme 1: Place-bound appraisal	Theme 2: Composure-in-action	Theme 3: Social architectures
P01	✓	✓	○
P02	✓	○	○
P03	✓	○	—
P04	✓	✓	○
P05	✓	○	✓
P06	✓	✓	○
P07	✓	✓	○
P08	✓	✓	✓
P09	✓	✓	✓
P10	✓	○	○
P11	✓	✓	✓
P12	○	○	—
P13	✓	✓	○
P14	✓	○	—
P15	✓	✓	○
P16	✓	○	○
P17	○	○	—
P18	✓	✓	○

Participant ID	Theme 1: Place-bound appraisal	Theme 2: Composure-in-action	Theme 3: Social architectures
P19	✓	○	○
P20	✓	✓	—
P21	○	○	—
P22	✓	○	—
P23	○	○	—
P24	○	○	—

APPENDIX I: ETHICAL APPROVAL (CANADA STUDY)

University of Alberta

Ethics Application has been Approved

ID:	Pro00129373
Title:	Using the personality traits and risk-taking behaviour to explore fall in community-dwelling older adults
Study Investigator:	Oluwagbohunmi Awosoga
Description:	This is to inform you that the above study has been approved. Click on the link(s) above to navigate to the workspace. Please do not reply to this message. This is a system-generated email that cannot receive replies.

University of Alberta
Edmonton Alberta
Canada T6G 2E1

Contact Us | Privacy Policy | City of Edmonton

University of Alberta

Ethics Application has been Approved

ID:	Pro00134581
Title:	Exploring Coping Strategies and Support Systems in Managing Fear of Falling Among Community-Dwelling Older Adults with Different Personality Traits in Southern Alberta: A Qualitative Study
Study Investigator:	Oluwagbohunmi Awosoga
Description:	This is to inform you that the above study has been approved. Click on the link(s) above to navigate to the workspace. Please do not reply to this message. This is a system-generated email that cannot receive replies.

University of Alberta
Edmonton Alberta
Canada T6G 2E1

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APPENDIX J: ETHICAL APPROVAL (NIGERIAN STUDY)

JOS UNIVERSITY TEACHING HOSPITAL
JOS, NIGERIA

Phone: +234 903 0001194
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juthjos@gmail.com

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P.M.B. 2076
Jos, 930241, NG

Ref: JUTH/DCS/IREC/127/XXXI/503

Date: 4th May, 2023

JUTH Health Research Ethics Committee NHREC/JUTH/05/10/22

TOPIC: "EXPLORING COPING STRATEGIES AND SUPPORT SYSTEMS IN MANAGING FEAR OF FALLING AMONG OLDER ADULTS WITH DIFFERENT PERSONALITY TRAITS IN NORTHERN NIGERIA"

Name of Principal Investigator: HENRIETHA ADANDOM
Address of Principal Investigator: Faculty of Health Sciences,
The University of Lethbridge,
4401 University Dr. W, Lethbridge,
T1K 3M4 AB, Canada.
Date of Receipt Application: 24th April, 2023

Notice of full Committee Review and Approval

This is to inform you that the research described in the submitted protocol, the consent forms and other participant information materials have been reviewed and given full committee approval by the JUTH Health Research Ethics Committee.

This approval dates from 4th May, 2023 to 5th May, 2024. If there is delay in starting the research, please inform the JUTH HREC so that the dates of approval can be adjusted accordingly.

You are however required to obtain a separate approval for use of patients and facilities from the department(s) you intend to use for your research. The JUTH HREC requires you to comply with all institutional guidelines, rules and regulations

Submission of final research work should be made to the JUTH HREC Secretary, Administration Department, please.

On behalf of the JUTH HREC of this Hospital, I wish you a successful research outing.

NIMAC LOHDIR NANA
For: Chairman JUTH HREC

UNIVERSITY TEACHING HOSPITAL
MITTEE
MAY 2023
P.M...
Sign.....

Specialist Road
Gwagwalada
n.henrietha@gmail.com

FCT/UATH/HREC/11174
UATH HREC PROTOCOL NUMBER: UATH/HREC/PR/342

14 November , 2023

Title of the Research:	**Exploring Coping Strategies and Support Systems in Managing Fear of Falling Among Community-Dwelling Older Adults with Different Personality Traits in Northern Nigeria: A Qualitative Study**
Proposed Site:	UATH
Name of Principal Investigator:	HENRIETA NWANKWO ADANDOM
Address of Principal Investigator:	Specialist Road, Gwagwalada
Date of receipt of Application:	30 August , 2023
Date of receipt of Ethical Approval:	14 November , 2023
Sponsor:	

Your submission to the UATH Health Research Ethics Committee on the above titled protocol refers.
The Committee reviewed the following:

- Informed Consent Form
- Questionnaire/Proforma
- Other relevant documents

The committee has considered the ethical merit of your submission and approved the protocol. The approval is for 12 month(s) and will lapse on 14 November , 2024. It can be renewed on request.

Comment:

Accept assurance of our highest regards.

Yours faithfully,

Prof. Aliyu Y. Bah

Chairman UATH (HREC)

APPENDIX K: CONFIDENTIALITY AGREEMENT

University of Lethbridge

CONFIDENTIALITY AGREEMENT

Exploring Coping Strategies and Support Systems in Managing Fear of Falling Among Community-Dwelling Older Adults with Different Personality: A Qualitative Study

I, Henrietha Adandom, the Principal/Co-investigator, agree to:

1. keep all research information shared with me confidential by not discussing or sharing the research information in any form or format (e.g., laptops, USB sticks, transcripts, surveys) with anyone other than the research team members also working on our project.
2. keep all research information in any form or format (e.g., laptops, USB sticks, transcripts, surveys) secure while it is in my possession.
3. after consulting with the Researcher, erase or destroy all research information in any form or format regarding this project.

Researcher (PI or Co-PI)

Henrietha Adandom		2023-09-06
Print name	Signature	Date

APPENDIX L: RECRUITMENT POSTER (CANADA)

University of Lethbridge

Research Participants Wanted

Study: Exploring coping strategies and support systems in managing fear of falling among community-dwelling older adults with different personality traits in Southern Alberta

This project aims to examine how different coping strategies and support systems may play a role in managing fear of falling among individuals with varying personality traits.

- Are you an older adult who is 65 years or older?
- Have you experienced a fall in the last 2 years or at risk of falling?
- Are you able to communicate in English?

Participants are asked to share their experience with researchers; interviews may be in-person or virtual for about 45 – 60mins. You would also be required to fill a personality questionnaire and answer a series of questions using an interview guide.

For more information, contact Henrietha Adandom, Graduate student researcher
Phone#: 4033936385 or email: hc.nwankwo@uleth.ca

*** This study has been approved by the University of Alberta Health Research Ethics Board. Ethics ID: Pro00134581**

APPENDIX M: RECRUITMENT POSTER (NIGERIA)

University of Lethbridge

Research Participants Wanted

Study: Exploring coping strategies and support systems in managing fear of falling among community-dwelling older adults with different personality traits in Northern Nigeria.

This project aims to examine how different coping strategies and support systems may play a role in managing fear of falling among individuals with varying personality traits.

- Are you an older adult who is 60 years or older?
- Have you experienced a fall in the last 2 years or at risk of falling?
- Are you able to communicate in English?

Participants are asked to share their experience with researchers; interviews may be in-person or virtual for about 45 – 60mins. You would also be required to fill a personality questionnaire and answer a series of questions using an interview guide.

For more information, contact Henrietha Adandom, Graduate student researcher
Phone#: 08061580491 or email: n.henrietha@gmail.com

***This study has been approved by both JUTH & UATH Research Ethics Board.**

APPENDIX N: LETTER OF INITIAL CONTACT (CANADA)

Letter of Initial Contact

Subject: Invitation to Participate in Research Study: Managing Fear of Falling in Older Adults

Dear [Participant's Name],

I hope this letter finds you well. We are excited to extend an invitation to you to participate in a research study titled "**Exploring Coping Strategies and Support Systems in Managing Fear of Falling Among Community-Dwelling Older Adults with Different Personality Traits in Southern Alberta**."

The purpose of this study is to better understand how older adult with varying personality traits cope with the fear of falling. We are interested in learning about your experiences as an older adult and the support systems you rely on. By gaining insights into different coping strategies, we aim to contribute to the development of personalized care plans for older adults in Southern Alberta.

If you meet the following inclusion criteria, we would be thrilled to have you join our study:

- You are 65 years of age or older.
- You have experienced a fall in the past 2 years or are at risk of falling.
- You are able to communicate in English.

Your participation would involve sharing your experiences with our researchers for about 45 – 60mins. You would also be required to fill a personality questionnaire and answer a series of questions using an interview guide. We offer the flexibility of in-person or virtual interviews, accommodating your preferred mode of communication. Your valuable insights will contribute

significantly to our research, which has the potential to enhance the well-being of older adults in our community.

As a gesture of appreciation for your time and contribution, all participants, regardless of their decision to continue or withdraw from the study, will receive a $5 gift card.

If you are interested in participating or have any questions about the study, please feel free to contact us at [403-393 6385]. Your participation is entirely voluntary, and your privacy and confidentiality will be strictly maintained. The University of Alberta Health Research Ethics Board has approved this study; Ethics ID: Pro00134581

We look forward to your positive response and hope that you will consider being a part of this important research endeavor.

Thank you for your time and consideration.

Sincerely,

Henrietha Adandom | Doctoral Candidate
University of Lethbridge
Email: hc.nwankwo@uleth.ca
Tel: (403) 393-6385

APPENDIX O: LETTER OF INITIAL CONTACT (NIGERIA)

Letter of Initial Contact

Subject: Invitation to Participate in Research Study: Managing Fear of Falling in Older Adults

Dear [Participant's Name],

I hope this letter finds you well. We are excited to extend an invitation to you to participate in a research study titled "**Exploring Coping Strategies and Support Systems in Managing Fear of Falling Among Community-Dwelling Older Adults with Different Personality Traits in Northern Nigeria**."

The purpose of this study is to better understand how older adult with varying personality traits cope with the fear of falling. We are interested in learning about your experiences as an older adult and the support systems you rely on. By gaining insights into different coping strategies, we aim to contribute to the development of personalized care plans for older adults in Southern Alberta.

If you meet the following inclusion criteria, we would be thrilled to have you join our study:

- You are 60 years of age or older.
- You have experienced a fall in the past 2 years or are at risk of falling.
- You are able to communicate in English.

Your participation would involve sharing your experiences with our researchers for about 45 – 60mins. You would also be required to fill a personality questionnaire and answer a series of questions using an interview guide. We offer the flexibility of in-person or virtual interviews, accommodating your preferred mode of communication. Your valuable insights will contribute

significantly to our research, which has the potential to enhance the well-being of older adults in our community.

As a gesture of appreciation for your time and contribution, all participants, regardless of their decision to continue or withdraw from the study, will receive a #5000 gift card.

If you are interested in participating or have any questions about the study, please feel free to contact us at [08061580491]. Your participation is entirely voluntary, and your privacy and confidentiality will be strictly maintained. The University of Abuja Teaching Hospital [UATH] and Jos University Teaching Hospital [JUTH], have approved this study.

We look forward to your positive response and hope that you will consider being a part of this important research endeavor.

Thank you for your time and consideration.

Sincerely,

Henrietha Adandom | Doctoral Candidate
University of Lethbridge
Email: n.henrietha@gmail.com
Tel: 08061580491

APPENDIX P: STUDY TIMELINE

Study Timeline – Gnatt Chart

Major Milestone	2021	2022	2023	2024	2025	Remark
Phase 1: Project Development						
Supervisory committee setup						√
Introductory meeting						√
Literature review						√
Proposal submission and defence						√
Application for ethics approval						√
Application for use of secondary dataset						√
Familiarization of interviewee recruitment partners						√
Comprehensive examination						√
Phase 2: Data Collection and Analysis						
Qualitative interview and analyses						√
Secondary data analyses						√
Phase 3: Completion						
Knowledge translation						√
Scoping review protocol publication				**Published**		√
Scoping review					**Under review**	
Secondary data analysis of CLSA data					**Published**	√

Canadian Qualitative study					**Accepted**	√
Nigerian Qualitative study					**Under review**	
Thesis write-up and editing						√
Final thesis defense					**August 29, 2025**	√
Application to graduate					**December 2025**	√