

Can personality theory help us understand risk of falls?

Marita Klooseck, PhD;^{1*} Richard G. Crilly, MD, FRCP(UK), FRCP(C);² Maggie Gibson, PhD, CPsych³

¹Faculty of Health Sciences and ²Division of Geriatric Medicine, University of Western Ontario, London, Ontario, Canada; ³Veterans Care Program, Parkwood Hospital, St. Joseph's Health Care, London, Ontario, Canada

Abstract—Falling is one of the greatest challenges of aging, devastating for older individuals and expensive to the health system. While much research to date has focused on physical risk factors for falls, little is known about behavioral risk factors and the role of personality in the prevention of falls. This article examines the potential role personality theory can play in expanding our understanding of not only the risk of falling in individuals of advanced age but also older individuals' response to this risk. This article raises issues for consideration and formulates some examples of questions for future research.

Key words: aging, falls, falls risk, falls risk prevention, older adults, personality, personality trait, rehabilitation, Six Foci of Personality model, state.

INTRODUCTION

Falling is one of the greatest challenges of aging, expensive to the health system and devastating for older individuals. The purpose of this article is to explore the risk of falls from a novel perspective—that of personality theory. While some personality traits—conscientiousness and willingness to take risks, for example—are occasionally mentioned in the falls literature, there has not previously been a comprehensive treatment of what personality theory, as it has developed in the field of psychology of aging, might have to offer to the field of falls assessment and prevention.

Personality theory has a long history and massive supporting literature, so much so that a *Handbook of Personality Development* has recently been published [1]. It is beyond the scope of this article to consider all of the

nuances of this broad literature as it may apply to the clinical issue of falls risk assessment. Instead, we focus on the subset of this literature that has specifically addressed personality and aging [2] and in particular on a dominant theory within this tradition, the Hooker and McAdams Six Foci of Personality model [3]. Our objective is to lead the reader who may not be familiar with the Six Foci of Personality model on a journey that will lead to greater understanding as to how personality focused questions can (and should) be incorporated within both falls risk research and clinical intervention for falls prevention. Our treatment of the model is necessarily an overview, and the interested reader is encouraged to explore the theory and its relevance to aging issues in more depth by reading the original literature.

It is our contention that the application of this theoretical perspective to the issue of risk for falls raises new questions, suggests new directions for the development of patient-centered clinical interventions, and generally promotes the integration of falls risk assessment within a more holistic understanding of the older person as a complex, decision-making individual with a unique and important personal history.

Abbreviation: PAC = personal action construct.

*Address all correspondence to Marita Klooseck, PhD; Faculty of Health Sciences, University of Western Ontario, Health Sciences Building, Room 216, London, Ontario, Canada N6A 5B9; 519-661-2111, ext 81230; fax: 519-685-4093. Email: mklooseck@uwo.ca

DOI: 10.1682/JRRD.2007.08.0135

This article is organized into three key sections. To set the stage, we provide a brief synopsis of the three literatures integrated in this article (falls, aging, personality). The first section provides a summary of why falling is such a societal concern and describes the focus of the risk assessment literature to date. The second provides a similarly high-level overview of the aging body and mind to illustrate why the risk of falling increases so dramatically with age. The third section provides a primer on the field of personality and aging and an overview of the Hooker and McAdams Six Foci of Personality model [3] in particular.

We then move to an integration of these three issues—personality, aging, and falls. For each of the six foci of Hooker and McAdams' model, we describe how that aspect of personality might not only influence an individual's risk for falls but may also influence a client's response to therapeutic rehabilitation and their subsequent willingness to modify future behavior. Very little falls-related research, including research on the recovery and rehabilitation of fallers, has examined the importance of these personality dimensions. The focus of this article is to investigate the potential importance of personality in falls-related research and client intervention and to provide examples of research questions that must be addressed before we can begin systematic investigation of this relatively unexplored area.

FALLS

It is well known that the incidence of falls increases with age, with approximately one-third of individuals over 75 falling each year [4]. Falls have been identified as the main cause of injury-related hospitalization for older adults in Canada [5–6] and internationally [7–8], with hip fracture being the most common severe consequence of falling [9]. Falls account for 40 percent of all nursing home admissions [10] and have also been linked to a 10 percent increase in Canadian home care services for seniors [5]. In Canada, healthcare costs related to falls are estimated at \$1 billion annually [11]. The estimated cost to the health system of a single hip fracture is \$25,000 to \$30,000 [12]. It is estimated that a 20 percent reduction in falls would result in approximately 7,500 fewer hospitalizations and an overall national cost savings of \$138 million annually [13].

Much work to date has focused on risk factors for falls in the older population, and a host of either irreversible or potentially correctable or avoidable risks have been identified. Over the years, research on falls prevention has evolved from the study of intrinsic (within individual) and extrinsic (physical, socioeconomic, and environmental) risk factors to a more recent focus on the complex interrelationships between individual behavior and falls risk factors [2]. Scott's recent review of Canadian programs for the prevention of falls among community-dwelling seniors identified four categories of risk factors—biological/medical, behavioral, environmental, and socioeconomic—related to falls [14]. While biological/medical and environmental risk factors have been well studied and a limited body of evidence exists that examines the relationship between falls and social determinants of health (socioeconomic risk factors), very little research to date has focused on behavioral risk factors such as personality traits and risk-taking behavior [5,15]. Two studies in this area identified behavioral risk factors as potentially significant in the prevention of falls. Zhang et al. found that risk of falling was associated with a type A or risk-taking personality, suggesting that such individuals continue to be active despite falling [16]. Kloseck et al. found personality to be a major determinant of engagement in activities outside the home for older adults who are at risk for falling but who may or may not have experienced an actual fall [15]. Behavioral risk factors thus remain a potentially significant but largely unexplored area in falls-related research.

AGING BODY AND MIND

There has been an explosion of research into the concept of frailty in aging people, a concept that is integral to the problem of falling. Falling is a multifactorial issue. Declining eyesight, muscle weakness, unstable or painful joints, and cognitive changes are among the factors that conspire to make the individual more vulnerable to falls.

Dementia is the most dramatic and severe cognitive impairment that is commonly seen in aging individuals and is characterized by multiple cognitive deficits, most notably memory impairments [17]. These deficits combine to make individuals more susceptible to falling and its consequences, such as hip fracture. However, subtle changes characterize the aging brain and increase the risk of falls, even in the absence of dementia.

Consider, for example, the role of attention [18]. In the process of learning to walk as children, we imprint a pattern of walking into our neurological system. As skill improves, we become able to walk without paying much attention. Automaticity takes over. However, active attention is required nonetheless to enable the adjustments that are needed in response to environmental obstacles, perturbation in balance, and so on. This vigilance is dependent on our neural feedback systems, vision, proprioception, and so on, all of which may deteriorate with age. In addition, age-related changes in the central nervous system may erode the degree of automaticity of which we are capable. Consequently, aging persons may have to be more consciously aware of their movements and activity at the same time that they may have declining capacity to allocate attentional resources as needed.

Put simply, the ability to multitask declines. We have, therefore, the unfortunate situation in which more attention is being required of a brain that is more limited in its ability to give it. The need to devote increasing resources to walking safely means that distraction becomes dangerous. The individual's awareness of this is the basis of the "talking while walking" phenomenon, in which the older individual has to stop walking in order to focus on responding to a question because he or she cannot do both together. Clinicians also see this in rehabilitation situations. For example, therapists frequently point out the difficulty older individuals may have performing kitchen duties while managing their walker and staying safe. Or, alternatively, the difficulty they have in focusing on gait and balance safety and remembering to turn the stove off.

The conflict for attention puts an older person at greater risk of falling. Even the provision of a gait aid may have unintended consequences. On the one hand, it may make walking safer, but on the other hand, it does provide an added challenge when another task, such as cooking, needs to be undertaken. The counterintuitive observation that a gait aid may not actually improve independence may in part be a result of the conflict for attention. At the moment, insufficient evidence is available to determine whether assistive devices do or do not increase independence for seniors [19]. Perhaps a walker makes walking safer but other activities more risky. One observation consistent with this is the finding that living alone while using a walker increases the risk of falling, the assumption being that those living alone have to do things for which the walker is a hindrance rather than an asset [20].

The problem of attention allocation may explain two other phenomena associated with falling in the older person. One is the frequent lack of insight into the cause of the fall. All too often the person will say, "I just found myself on the ground." This seems to reflect the fact that attention was diverted elsewhere, such that the immediate cause of the fall goes unnoticed. Secondly, it may also explain the fact that older people sustain more injuries from a fall. Young and old people fall differently, with those who are younger more likely to protect themselves by sharing the impact among several limbs or contact points [21]. In older individuals, however, unawareness that the fall is occurring erodes the time available for correction or protection and injury becomes more likely. A hip fracture is, in particular, the result of a single-point contact with the floor after a fall.

The unfortunate situation is that old age is associated with many physical and mental changes that challenge the aging person in their attempt to remain functional and independent. The risk of falling increases, not because the environment is intrinsically becoming more challenging (in fact, the opposite may be the case) but because the older person's ability to cope is increasingly compromised. Individuals are forced to adapt to their limitations and restrict their activities accordingly or accept an elevated level of risk for falls. The contribution of personality factors to this choice has been little explored.

PERSONALITY AND AGING

Within this complex picture of challenge and need, personality exists as a little understood catalyst for behavioral choices. Although, traditionally, personality has been thought to be stable through life, it is now accepted that change can and does occur and that it occurs to a different degree in different personality domains in different people. Change can be influenced by life events and may even be purposefully effected by the individual, dissatisfied with a certain aspect of their personality, through specific effort, counseling, or therapy.

Personality Traits

In general conversation, many different attributes are described as personality traits—for example, people are described as "being" (having a trait) shy, outgoing, careless, thrifty, considerate, kind, cruel, and so on. When someone's personality is described in these ways, the

general perception is that the person being described usually or at least often behaves in that same way; a shy person is usually shy, and an outgoing person is usually outgoing. The perception that personality is essentially stable dominated the study of personality traits in the field of personality research for several decades. The most well-known outcome of this research focus was the establishment of the “big five” personality factors: extroversion, agreeableness, conscientiousness, neuroticism, and openness [22]. Essentially, research demonstrated that many of the various terms that are used to describe personality are captured within this generic framework of qualities and that a reasonable stability in how people act with respect to these dimensions of personality exists: people can be reliably described as mostly extroverted, more or less agreeable in their dealings with others, more or less conscientious, more or less neurotic (worried), and more or less open to new experiences.

This conceptual framework is now being supplemented by a more complex view of personality. There is increasing recognition that the trait model captures personality in broad general terms only and has resulted in an overemphasis on personality stability [2]. More recently, in the personality and aging field, trait theory has been recast within a conceptual framework that takes into account other components of personality beyond traits, such as goals and personal history, as well as the active meaning-making processes that maintain both traits and other personality structures [3].

Six Foci Theory of Personality

Hooker and McAdams [3] offer a six foci classification of personality that involves three major “levels” or structural components—traits, personal action constructs (PACs), and life story—and three linked process components referred to as states, self-regulation, and self-narration. The first major structural definition (traits) contains the “big five” traits of McCrae and Costa [22] as well as other traits that represent broad consistencies in behavior across situations and over time. Traits are understood to be broad generalizations, not static entities. For example, a person may be generally extroverted (a trait); however, he or she may, at different times and under different circumstances, exhibit a whole range of behaviors from extroversion to introversion. The likelihood or density [23] of more introverted versus more extroverted behaviors as distributed along the spectrum of possibilities is what leads to the specification of where the individual sits, on average, with respect to the trait in question. States, on the other hand,

are process (rather than structural) components of personality that are associated with traits and contribute to their variability. States include such factors as moods, fatigue, and anxiety.

The second structural level, PACs, includes goals, motivations, and task orientation. This attribute of personality is action-oriented and is dependent upon context, including place and time. Changes are expected across the life span and are influenced by life events and other circumstances. PACs may evolve in response to the passage of time (aging) as well as in response to changing circumstances (for example, a significant change in health, social, or economic status). The expression of PACs depends on self-regulatory processes such as self-efficacy, outcome expectancy, perceived control, agency, and coping. Each of these processes is an extensively studied topic in its own right, and the reader is referred to recent overviews on coping [24] and perceived control [25] for detailed examination of the theoretical overlap and variability among these various self-regulatory constructs.

The third structural component of personality is the person’s life story. The corresponding process component includes social-cognitive activities such as reminiscence. The individual’s life story or personal narrative is dependent on memory and reminiscence and entails a subjective appraisal of one’s life to date and expectations for the future. Choices and actions have somehow to be fitted into or accommodated within the person’s overall self-concept, his or her life story. There has been an emphasis in the narrative gerontology literature on the negative consequences of aging, such as loss and depletion; however, the concept of wisdom has also received well-warranted attention [26]. Wisdom is in part a product of how individuals who have experienced significant loss and adversities integrate these experiences into their personal narrative in a way that gives rise to learning, meaning, and self-growth. Positive personal changes that result from struggling with trauma, chronic illness, and loss are garnering increasing attention [27–28]. This perspective has significant relevance for our understanding of successful adaptation to the challenges of aging. It is clear that personality plays a role in resiliency and the capacity for adversarial growth [29]. The three structural levels should not be seen as stand-alone personality components but rather as broad domains with much overlap and cross-influence. Thus, it would be surprising if one’s personality traits did not have a major influence on PACs and if both did not strongly influence the life story. Similarly, the process components are not restricted to any

specific construct and will have broad influences across the whole spectrum. For example, mood may influence the motivation to achieve one's personal goals and so on.

PERSONALITY, AGING, AND FALLING

Personality can change across time and appears to vary greatly among individuals. In general, some traits (conscientiousness, agreeableness, and norm adherence) increase with age, while those relating to social vitality (e.g., openness, extroversion) decrease. In very old age, there may be a tendency toward less extroversion, openness, and life investment, with greater behavioral rigidity. Important life events such as marriage and retirement are known to precipitate shifts in personality in generally predictable ways, but how changes in very old age might have a similar effect remains unexplored. Thus, frailty and falling could impact personality just as personality influences one's response to such challenges. In the following sections, we explore the potential relationships among personality, aging, and falling using the Hooker and McAdams [3] model.

Traits and States

Preliminary research suggests that some traits are more reliably associated with likelihood of falling [12]. For example, extroversion might increase the risk of falling as extroverts get on with their lives and interests despite the risks. Moreover, intuitively, falls would appear to be more likely under adverse states such as fatigue or distress. Since states are much more amenable to intervention than traits, this differential suggests that it would be useful to include systematic assessment of state as well as trait variables in future research focused on falls risk factors. One research question of interest is, "Are certain states associated with falling within personality (trait) profiles?"

Follow-up research questions might focus on how to strategically target interventions to reduce falls risk given characteristic personality traits. For example, some underlying traits might be protective and mitigate falls risk both generally and under adverse conditions such as fatigue and anxiety. People who are high in conscientiousness may be at reduced risk for falls in general compared with those who are lower in this trait because their underlying personality structure causes them to "let down their guard" less. It may be possible to use the underlying per-

sonality structure (conscientiousness) as a lever to focus attention on the importance of state (e.g., feeling anxious) as a red flag for increased falls risk that warns the person to be extra cautious until he or she is feeling back to normal. For individuals who are lower in conscientiousness, other states may similarly create increased falls risk.

Accordingly, the interventions to reduce risk may need to be differently constructed so that they fit with the person's characteristics and temperament and may vary from time to time in the same individual. For example, consider two older adults, both of whom are experiencing the typical age-related declines discussed earlier in this article: declining eyesight, muscle weakness, unstable or painful joints, and mild cognitive impairment. Both are finding it increasingly difficult to multitask. Both are at risk of falling. However, regardless of how similar they look in terms of their physical health and their functional capacity, they are indeed very different, unique individuals. Their personalities differ, and their personalities will play a major role in determining how they accept, implement, and proceed with respect to even simple, seemingly straightforward interventions to reduce the risk of falling, such as the recommendation to use public transit or a taxi to get to the corner store in bad weather, remove some of the "clutter" (or keepsakes) in their homes, or ask a willing family member for help with the spring-cleaning.

Personal Action Constructs and Self-Regulation

Within PACs, the domains or goals that are personally relevant are important. These will change over an individual's life span and in old age likely encompass matters of independence and function. The self-regulatory process within this level complements the concept of self-selected dependency and compensation [30–31]. In old age, a constriction of domains and a concentration of resources on selected goals are common. The physical declines associated with aging may require the abandonment of previously important domains. How older people can shift from goals that may have characterized their younger years (e.g., job, family) to redefined age-relevant goals (e.g., maintaining independence) within the context of declining ability warrants attention in future research. "Not falling" is unlikely to be a priority PAC or life goal throughout adulthood. Rather, it is a goal that may take on increasing significance in later life in response to increasing salience of the possibility of falling and the implications of a fall for other life goals such as independent living.

To understand the evolution of PACs (goals, motivations, task orientation) within the person (with or without professional intervention), it is necessary to recognize the primary role of self-regulation. Aging is associated with many changes that require effective use of self-regulatory processes to maintain acceptable levels of emotional, physical, and social functioning [25]. Adaptation to chronic illness is, for example, a complex task that calls upon the person to make use of self-regulatory processes to create a viable balance between limitations and capacities. Age-related declines in physical stamina, vision, and hearing are other circumstances that require self-regulation for successful adaptation. Reductions in cognitive capacity and reserve similarly create adaptation demands. Multitasking, for example, may become less achievable with increasing age and frailty. If the individual does not adjust his or her performance expectations accordingly, the risk for accidents and injuries including falls may increase.

Furthermore, emotion regulation is an important component of self-regulation. Emotions arouse physiological systems, direct attention, and motivate action [32]. Socioemotional selectivity theory, a life span theory of motivation, postulates that positive emotion plays an increasingly prominent role in cognitive processing with age [32]. As an integral component of this shift, emotion-based goals increase in relative importance to knowledge-based goals as people grow older. The relevance of emotional information increases in social and cognitive domains of functioning, including everyday problem solving. It also appears that emotional regulation, in particular a focus on maintaining positive affect, becomes more salient as remaining time (life span) grows shorter [32].

These findings have implications for the allocation of attention in the service of different life goals, including “not falling,” and in risk assessment. To better understand how “not falling” becomes a personal goal for older adults, future research questions will need to address issues such as the following:

1. “How do individuals with advancing age appraise risk, select and implement coping strategies, and mobilize resources to maintain a personally defined acceptable quality of life, while putting in place the changes to their environment, habits, routines, expectations, self-perceptions, and so on that will make the goal of ‘not falling’ more achievable?”
2. “How do other aspects of individuals’ personality—for example, their underlying trait structure and their self-

narrated life story—help or hinder them in using self-regulatory processes to establish ‘not falling’ as a personally relevant and achievable goal?”

3. “How do emotions and emotional regulation influence the establishment of this goal for adults at different ages/stages of life?”

For example, toward the end of life, goal maintenance may be more important than the setting and achievement of new goals. However, someone who was previously outgoing and adventurous may be unwilling to accept the restrictions that keeping safe in the face of the risk of falling may impose.

Life Story and Narrative

Connected to all other aspects of personality is the need to retain consistency in one’s life story and to accommodate changes without a sense of failure. Although future research may show that many aspects of the individual’s life story and corresponding narrative are relevant to consistency and accommodation in the domain of falls, the aspect that appears most promising at present is the issue of risk taking. This topic is therefore explored in detail.

The stories people tell about themselves, where they have been, what they have seen and done, and the choices they have made reveal their tendency to take or avoid risks in a variety of situations. A penchant for risk taking, or alternatively risk avoidance, varies between people at all stages of life, as an interactive function of personality and circumstances. Some aspects of risk taking can be predicated by life stage. We likely drive more carefully as young new parents than we did as teenagers. Others are quite individualistic. For example, some older adults are eager to try skydiving at 80 years of age, reflecting a lifetime of adventuring, while others, young or old, would pass on the opportunity. As we age, we experience changes in both the nature of the risks we routinely face and the level of risk inherent in any given situation. Secondary to age-related changes in our physical and cognitive capacity, we may reach the point where behaviors that we undertook with little risk when younger become a very risky proposition when older. Our interpretation of this information and its impact on our actions reflects our overall sense of who we are—that is, our life story.

A tolerance for risk taking has been shown to be a predictor of falls in the elderly person [32], and a type A behavior pattern is associated with increased risk in men

[16]. The issue of risk tolerance is an important area for further research. Questions that need to be addressed include:

1. "How can we assess the individual's lifelong perspective on risk taking and develop a falls risk management protocol for the individual that respects this aspect of his or her personality?"
2. "How do we remain client-centered when our recommendations for care do not mesh with the self-perceptions of the older person who is at risk for falls?"

Previous research has shown that lower conscientiousness or greater impulsivity in childhood predict earlier mortality [33]. The assumption is that these traits define a tendency toward risk taking or at least a failure to focus on prevention and healthy lifestyles. It was hypothesized that by the time of extreme old age, the risk takers may have been weeded out. It has been found, however, that the relationship persists even in old age, with less conscientiousness predicting earlier mortality. Given the realization that personality traits are indeed more malleable than previously thought, it is pertinent to ask if life events in old age could indeed change this personality trait. Falling, fear of falling, and fear of loss of independence might indeed be such stimuli. Our data show a wide range of responses to these stressors and that the response, be it reducing activity or continuing regardless of risk, is related to personality traits [15]. Thus, we find the more introverted individuals are likely to restrict their activities in contrast to the extroverts who continue to get out and about.

CONCLUSIONS

The challenge is really to understand the interaction between the person and their environment. As people age, they are likely to dwell in and venture into less challenging environments. Relocation to an institutional facility is the ultimate attempt to enable individuals to continue to exist in as unchallenging an environment as possible. Within the institutional environment, however, falling is endemic because only so much can be done to fall-proof an environment and still have it resemble a human dwelling. Most of the environmentally associated falls that occur in long-term care homes and like facilities do so when people fall over everyday pieces of furniture or while they perform common activities. Thus, one can conclude that eventually even the safest environment can be too challenging to prevent the risk of falls.

For those living at home and striving for some level of independence, some balance has to be sought between risk and safety, independence and dependence. For the highly disabled and already dependent, as well as for the highly functional, this may not be an issue, but for those in between, striving to be functional despite physical problems, falls may ensue [34]. A moderating factor between wishing to be safe and striving to complete a task is the individual's willingness to take a risk. This choice may well function to level out the playing field, as individuals attempt to accomplish tasks that challenge their abilities, whatever the level of those abilities may be.

Risk taking may reflect the importance of personality factors in falling, since some people will take more risks than others in an attempt to accomplish what they perceive as important for them. Others are more content to accept their limitations and adjust their activities, while still others overreact and accept dependency. Considering the person as a whole and their various domains of personality, there is a need for research that expands on what is known about the interaction between moods, emotional regulation, and risk-taking tendency as they apply to falls. Experimental research suggests that older adults are willing to take greater risks when in a happy mood [35]. This finding reflects the observation that people see the world as a relatively safe place when in a positive mood and is consistent with socioemotional selectivity theory [32]. Important research questions include, "What are the emotional costs/benefits of encouraging more risk-adverse behaviors in older adults? Do these vary as a function of how risk taking is valued in their life story?"

Future Research

Personality is important from a life span developmental perspective, as much so in old age as in younger stages of the life cycle. It is important to realize that personality both shapes one's responses to the challenges of aging and is in turn shaped by those challenges. People of all ages do change. Frequently, the challenges of old age—health breakdown, loss of independence, and such—may precipitate adjustments to one's basic personality structure (traits, goals, and life story). Some of these adjustments may have negative consequences. Any or all of these changes may influence states or moods, affect risk taking, compromise care taking, and influence the risk of falling. Clearly, there is an interaction here and a level of complexity that needs to be teased apart and which should be a focus of future research on falls risk in older adults.

The model evolving here is that advancing age brings many physical and mental changes, which are mostly negative and which challenge the aging person in his or her attempt to remain functional and independent. The risk of falling increases, not because the living environment is intrinsically becoming more challenging (in fact, the opposite is the case) but because the older person's ability to cope even with a friendly environment is increasingly compromised. An individual is forced to adapt or accept the risk. The personality factors that determine that choice have, to date, been little explored. This article raises issues for consideration and advocates for further research that goes beyond occasional inclusion of a few personality traits in research on falls risk. Examples of the kinds of questions that should be asked are discussed throughout this article and summarized in the **Figure**. We suggest that the burgeoning literature on personality theory, and especially on personality and aging, has great potential as a framework for expanding our knowledge and understanding of risk for falls as a complex human phenomenon driven not only by health, functional ability, and environment but also by the unique interaction of these factors for the person who may fall.

Rehabilitation Practice Implications

Most previously independent older individuals who sustain fall-related fractures, in particular hip fractures, will require therapy and rehabilitation. Hip fractures, the most common severe consequence of falling, are associated with severe functional impairments, compromised activities of daily living, and loss of confidence and independence. In all aspects of health, prevention, and rehabilitation, individuals vary enormously in their willingness to alter risky behavior. The reasons behind this are only now beginning to receive attention, and personality will undoubtedly emerge as a major factor requiring consideration.

This article has focused on and attempted to draw some potential linkages between personality and falling, from the point of view of how one's personality will influence not only the risk of falling but also the response to it. It is very likely that the same factors will be of importance in rehabilitation settings. As the client in the rehabilitation setting recovers, his or her function will improve. The level of function achieved, as an expression of the client's potential, may be determined by nonphysical factors. Cognition is a well-recognized determinant of rehabilitation potential, but therapists frequently comment on the client's motivation, outlook, etc., which, in

the absence of depression, are expressions of personality. Although clients being assessed for rehabilitation potential are fully assessed, usually both physically and cognitively, personality is rarely taken into account and certainly not in any formal way. Unfortunately, we do not as yet have any body of knowledge that could guide therapists in choosing an approach that would be more successful for certain personality types. In addition, the rehabilitation relationship can be a close one, with the therapist working closely with the patient over a period of days, weeks, or even months. Under these circumstances, not only will the patient's personality matter but so also will the therapist's. Different attitudes toward safety and risk taking, or even the issue of selective dependency, can make the process difficult or frustrating. The role of personality in determining rehabilitation outcomes, of which teaching the client to take care and be safe is a significant part, is also important. Indeed, a mismatch of personality between the client (a risk taker, for example) and the therapist (a care taker, as well as a caretaker) may have significant consequences for both goal setting and achievement. Although the current fashion is to consider the therapeutic process patient-centered and goal driven, both therapist and patient need to be in general agreement with the goals of the program.

An understanding of the personality of the patient, the goals that are of importance to him or her, and how it all fits into the patient's overall view of life can help the therapist understand the patient and his or her motivation better. Healthcare professionals may be ahead, behind, or "in sync" with aging adults in the adoption and prioritization of various goals. Their efforts to encourage adoption of falls prevention goals are dependent in part on the approaches to health behavior change they endorse and implement. For a broad overview of the models and theories in the health behavior intervention field, see for example Elder et al. [36].

ACKNOWLEDGMENTS

This material was unfunded at the time of manuscript preparation.

The authors have declared that no competing interests exist.

States and Traits	
RQ ₁ : Are certain states associated with falling within trait profiles?	For individuals who have a given set of personality traits (for example, they are generally less conscientious, more agreeable, and quite open to new experiences), are there mood states that have predictable influence on risk (for example, when these people are especially happy are they more likely to underestimate danger and take chances that result in falling)?
RQ ₂ : How do we strategically target interventions to reduce falls risk given characteristic personality traits?	Can it be shown that different intervention approaches will be more effective for different personalities? Thus, the approach for the extrovert who is determined to keep going may need to be quite different from the approach for the introvert in danger of becoming housebound.
Personal Action Constructs (PACs) and Self-Regulation	
RQ ₃ : How do individuals with advancing age appraise risk, select and implement coping strategies, and mobilize resources to maintain a personally defined acceptable quality of life while putting in place changes to their environment, habits, routines, expectations, self-perceptions, and so on that will make the goal of “not falling” more achievable?	—
RQ ₄ : How do other aspects of individuals’ personality—for example, their underlying trait structure and their self-narrated life story—help or hinder them in using self-regulatory processes to establish “not falling” as a personally relevant and achievable goal?	—
RQ ₅ : How do emotions and emotional regulation influence establishment of this goal for adults at different ages/ stages of life?	—
Life Story and Narrative	
RQ ₆ : How can we assess the individual’s lifelong perspective on risk taking and develop a falls risk management protocol for the individual that respects this aspect of their personality?	—
RQ ₇ : How do we remain client-centered when our recommendations for care do not mesh with the self-perceptions of the older person who is at risk for falls?	—
RQ ₈ : How does the therapist’s view of risk taking and safety influence their approach to the client?	—

Figure.

Potential research questions (RQs) on risk for falls that target different structural and process components of the Six Foci of Personality model.

REFERENCES

1. Mroczek DK, Little TD. Handbook of personality development. Mahwah (NJ): Lawrence Erlbaum; 2006.
2. Mroczek DK, Spiro A III, Griffin PW. Personality and aging. In: Birren JE, Schaie KW, editors. Handbook of psychology of aging. 6th ed. Oxford (England): Academic Press; 2006. p. 363–77.
3. Hooker K, McAdams DP. Personality reconsidered: A new agenda for aging research. *J Gerontol B Psychol Sci Soc Sci.* 2003;58(6):296–304. [PMID: 14614110]
4. Tinetti ME, Speechley M, Ginter SF. Risk factors for falls among elderly persons living in the community. *N Engl J Med.* 1988;319(26):1701–7. [PMID: 3205267]
5. Public Health Agency of Canada. Report on seniors’ falls in Canada. Division of Aging and Seniors. Ottawa (Canada): Minister of Public Works and Government Services Canada; 2005.
6. Public Health Agency of Canada. The safe living guide: A guide to home safety for seniors. Ottawa (Canada): Minister of Public Works and Government Services Canada; 2005.
7. Day L, Kent S, Fildes B. Injuries among older people. *Hazard.* 1994;19:1–16.

8. Lilley JM, Arie T, Chilvers CE. Accidents involving older people: A review of the literature. *Age Ageing*. 1995;24(4):346–65. [\[PMID: 7484495\]](#)
 9. Zuckerman JD. Hip fracture. *N Engl J Med*. 1996;334(23):1519–25. [\[PMID: 8618608\]](#)
 10. Tinetti ME, Williams CS. Falls, injuries due to falls, and the risk of admission to a nursing home. *N Engl J Med*. 1997;337(18):1279–84. [\[PMID: 9345078\]](#)
 11. Carstairs S, Keon WJ. Embracing the challenge of aging. Ottawa (Canada): The Special Senate Committee on Aging; 2007.
 12. Wiktorowicz ME, Goeree R, Papaioannau A, Adachi JD, Papadimitropoulos E. Economic implications of hip fracture: Health service use, institutional care and cost in Canada. *Osteoporos Int*. 2001;12(4):271–78.
 13. Hygeia Group, Canada Department of National Health and Welfare. The economic burden of unintentional injury in Canada. Toronto (Canada): Smartrisk; 1998.
 14. Scott V. Public Health Agency of Canada. Federal/provincial/territorial inventory of Canadian programs for the prevention of falls among seniors living in the community. Division of Aging and Seniors. Ottawa (Canada): Minister of Public Works and Government Services Canada; 2001.
 15. Kloseck M, Hobson S, Crilly R, Vandervoort A, Ward-Griffin C. The influence of personality on falling and engagement in daily activities by community-dwelling older adults. *Phys Occup Ther Geriatr*. 2007;26(1):1–18.
 16. Zhang JG, Ishikawa-Takata K, Yamazaki H, Ohta T. Is a Type A behavior pattern associated with falling among the community-dwelling elderly? *Arch Gerontol Geriatr*. 2004;38(2):145–52. [\[PMID: 14698493\]](#)
 17. American Psychiatric Association. Diagnostic and statistical manual of mental disorders. 4th ed. Text revision. Washington (DC): American Psychiatric Association; 2000.
 18. Hartley AA. Attention. In: Craik FI, Salthouse TA, editors. *The handbook of aging and cognition*. Hillsdale (NJ): Lawrence Erlbaum; 1992. p. 3–49.
 19. McWilliam CL, Diehl-Jones WL, Jutai J, Tadrissi S. Care delivery approaches and seniors' independence. *Can J Aging*. 2000;19(1):101–24.
 20. Crilly RG, Boudville A, Kloseck M, Brinker JK, Weiser M. Risk of falling and impulsivity. *J Can Geriatr Soc*. Forthcoming 2008.
 21. Robinovitch SN, Hsiao ET, Sandler R, Cortez J, Liu Q, Paiement GD. Prevention of falls and fall-related fractures through biomechanics. *Exerc Sport Sci Rev*. 2000;28(2):74–79. [\[PMID: 10902089\]](#)
 22. McCrae RR, Costa PT Jr. The structure of interpersonal traits: Wiggins's circumplex and the five-factor model. *J Pers Soc Psychol*. 1989;56(4):586–95. [\[PMID: 2709308\]](#)
 23. Fleeson W. Toward a structure- and process-integrated view of personality: Traits as density distribution of states. *J Pers Soc Psychol*. 2001;80(6):1011–27. [\[PMID: 11414368\]](#)
 24. Jacelon CS. Theoretical perspectives of perceived control in older adults: A selective review of the literature. *J Adv Nurs*. 2007;59(1):1–10. [\[PMID: 17543008\]](#)
 25. De Ridder D, Schreurs K. Developing interventions for chronically ill patients: Is coping a helpful concept? *Clin Psychol Rev*. 2001;21(2):205–40. [\[PMID: 11293366\]](#)
 26. Randall WK, Kenyon GM. Time, story, and wisdom: Emerging themes in narrative gerontology. *Can J Aging*. 2004;23(4):333–46. [\[PMID: 15838816\]](#)
 27. Linley PA, Joseph S. Positive change following trauma and adversity: A review. *J Trauma Stress*. 2004;17(1):11–21. [\[PMID: 15027788\]](#)
 28. Coutu DL. How resilience works. *Harv Bus Rev*. 2002;80(5):46–50,52,55. [\[PMID: 12024758\]](#)
 29. Bonanno GA. Loss, trauma, and human resilience: Have we underestimated the human capacity to thrive after extremely aversive events? *Am Psychol*. 2004;59(1):20–28. [\[PMID: 14736317\]](#)
 30. Baltes PB, Baltes MM. Psychological perspectives on successful aging: The mode of selective optimization with compensation. In: Baltes MM, Baltes PB, editors. *Successful aging: Perspectives from the behavioral sciences*. Cambridge (England): Cambridge University Press; 1990. p. 1–34.
 31. Baltes PB. On the incomplete architecture of human ontogeny. Selection, optimization, and compensation as foundation of developmental theory. *Am Psychol*. 1997;52(4):366–80. [\[PMID: 9109347\]](#)
 32. Charles ST, Carstensen LL. Emotion regulation and aging. In: Gross JJ, editor. *Handbook of emotion regulation*. New York (NY): Guilford Press; 2007. p. 307–27.
 33. Martin LR, Friedman HS, Schwartz JE. Personality and mortality risk across the life span: The importance of conscientiousness as a biopsychosocial attribute. *Health Psychol*. 2007;26(4):428–436. [\[PMID: 17605562\]](#)
 34. Studenski S, Duncan PW, Chandler J, Samsa G, Prescott B, Hogue C, Bearon LB. Predicting falls: The role of mobility and nonphysical factors. *J Am Geriatr Soc*. 1994;42(3):297–302. [\[PMID: 8120315\]](#)
 35. Chou KL, Lee TM, Ho AH. Does mood state change risk taking tendency in older adults? *Psychol Aging*. 2007;22(2):310–18. [\[PMID: 17563186\]](#)
 36. Elder JP, Ayala GX, Harris S. Theories and intervention approaches to health-behavior change in primary care. *Am J Prev Med*. 1999;17(4):275–84. [\[PMID: 10606196\]](#)
- Submitted for publication August 30, 2007. Accepted in revised form March 31, 2008.