HEALTH PSYCHOLOGY | RESEARCH ARTICLE

A theoretical perspective on aging attributions and expectations: Its role in health behaviors and outcomes

Johnny J. Yao Jr.1*

Abstract: Literature tells how people experience and perceive their own aging may affect future health outcomes and health behaviors. There are also several sources by which these expectations are formed and reshaped as one ages. The study aimed to develop a theory on aging expectations and attribution through establishing axioms and constructing propositions using a deductive theory generation approach. The evolved theory suggests that a person’s expectation regarding aging would influence health behaviors and subsequently a person’s overall well-being. The theory further suggests that individual experiences during one’s lifetime influence how these personal aging expectations are constructed. This has major implications for health promotion programs and public health policies involving older adult populations.

Subjects: Ageing; Gerontology Nursing; Social Psychology; Social Science

Keywords: aging expectations; aging process; subjective aging; old age perceptions; ageism; ageist stereotypes; healthy aging

1. Introduction

Statistics show that as human lifespan has increased, so too has the likelihood of living longer with frailty, disability and long-term disease (Settersten & Hagestad, 2015). In general, an increase in

ABOUT THE AUTHOR

Johnny J. Yao Jr. is a registered nurse and obtained his degree of Bachelor of Science in Nursing at Velez College in 2009 where he was awarded with honors. He finished his Master in Nursing with a specialization in medical-surgical nursing at Cebu Normal University (CNU) in 2011. He was invited to be part of the faculty of the College of Nursing at Velez College in 2010. He teaches medical-surgical nursing, health assessment, community health nursing, gerontology nursing and research. In the year 2013, he graduated with a degree in Doctor of Management major in health care management at the University of the Visayas (UV). In 2018, he earned his Doctor of Science in Gerontology Nursing at the Cebu Normal University. He is also a visiting professor in the graduate school of the University of the Visayas and Cebu Normal University. As of the time of writing, he is the research director and ethics review committee chair of Velez College.

PUBLIC INTEREST STATEMENT

Research suggests that a person’s beliefs about the aging process would influence health and illness outcomes. There is a need to synthesize a theory to understand the health behaviors and outcomes associated with aging expectations. Such information will assist in the promotion of attaining and maintaining optimal health and health behaviors among aging adults.
the births 60 years ago has resulted in an increase in the population of older adults. This is apparent in the baby boomer trend all over the world. This is due to the sudden rise in birth rates during World War II. There is an unprecedented increase in the population of older adults. Currently, 8.5% or 617 million of people worldwide are aged 65 and over (National Institutes of Health, 2016). This number is expected to rise to approximately 17% or around 1.6 billion of the world’s population by 2050 (National Institutes of Health, 2016). Moreover, 20% of the elderly population in the world or 61 million people are in the oldest old. This group will double to 146 million in the year 2020. According to the United Nations, Department of Economic and Social Affairs, Population Division (2017), that in 2050, older persons are expected to account for 35% of the population in Europe, 28% in Northern America, 25% in Latin America and the Caribbean, 24% in Asia, 23% in Oceania and 9% in Africa.

These statistics show that a typical person lives longer, and that the population of older adults has increased. Even though life expectancy has lengthened, there are individuals who are living with chronic diseases. With normal aging, there is loss of organ reserve that contributes to changes in different body systems resulting in a decrease in function (Tabolski, 2014). Changes to body systems could predispose older adults to conditions such as hypertension, infections, indigestion, reduced vision, reduced hearing, fractures and urinary frequency among others (Eliopoulos, 2018). But there needs to be a distinction between the pathological and normal changes related to old age. It is normal to have decreases in function, but it is not necessarily expected to have disease in old age. Moreover, how people experience and perceive aging may affect how people attempt to prevent and manage disease in old age. However, there is no clear evidence on how the aging expectations of individuals can predict health behavior and health status throughout their aging process. Many attribute inevitable declines in mental health, cognitive functioning, physical performance, and overall well-being to the aging process (Sarkisian et al., 2001). Unfortunately, these negative beliefs of aging often become self-fulfilling prophecies such that aging adults who expect declines with age behave in ways that confirm their expectations even if they are unaware of it. On the other hand, several studies have revealed that having more optimistic depictions of an individual’s aging process and feeling younger are linked with improved physical health and subjective well-being (Barrett, 2003; Steverink et al., 2001; Westerhof et al., 2012).

Therefore, there is a need to synthesize a theory to understand the health behaviors and outcomes associated with aging expectations. These are expectations of expected deterioration in well-being and functioning with age vs. expectations of health and function maintenance throughout later-life. Such information will assist in the promotion of attaining and maintaining optimal health and health behaviors among aging adults. The purpose of this study is to generate a theory that will be able to explain the antecedents and effects of aging expectations in adults. This theoretical paper will present the process and explanation of the developed theory about the phenomenon.
2. Methodology
The research to theory strategy was used in this study in which the generation of the theory is based on replicated and/or confirmed research findings (McEwen & Wills, 2014). The purpose is to create a theory that would explain the occurrence of the phenomenon about aging expectations among older adults. The specific method for theory generation was the deductive approach. In this approach, the researcher gathered various empirical sources from existing literature, critical analyses, and studies regarding aging expectations and its influence on health behaviors and outcomes that were used to form a set of axioms. These literatures were derived from various online databases using the keywords aging expectations, subjective aging, aging perceptions, and aging stereotypes. Using secondary analysis, there were set of axioms that were generated which provided the groundwork in formulating the different propositions. Finally, the propositions were used as the building blocks for the theory generated.

The theory generated may be classified as a middle-range theory. It will address a specific phenomenon by explaining what it is, why it occurs, and how it occurs. Furthermore, middle-range theories can offer a structure for the explanation of behavior, circumstances, and events of a phenomenon (McEwen & Wills, 2014). Aside from the different literature and studies, the theory was also inspired by concepts from Bandura’s social learning theory (Brown, 1998) and Pender’s health promotion model (McEwen & Wills, 2014) using a gerontology nursing perspective.

3. Results and discussion
The analysis of the literature is presented in this section and is summarized in Table 1. There are various ways in which aging expectations are defined. In this research, it is defined as an individual’s perceptions of how aging would influence their health and well-being. Even with the variability in the experiences and characteristics of older adults, there is a predominant negative perception of old age and aging. According to Karp and Yoels “you are as young or old as others make you feel” (as cited in Hurd, 1999). Subjective aging could possibly be formed by numerous individual and sociocultural factors. At the individual level, these may be personal values and traits, role models of aging, personal experiences on growing older, and stereotypes about older adults. At the sociocultural level, cultural values, information in media, social interactions, societal institutions, social policies, and structures provide a basis that influences subjective aging (Westerhof & Wurm, 2015).

Therefore, perceptions and expectations of aging are principally intersubjective: How individuals perceive aging is shaped by collective meanings, through interactions from people in their environment (Settersten & Hagestad, 2015). Moreover, these aging expectations may also be embedded in social systems, age-based policies (e.g., retirement), and social interactions (Dannefer & Settersten, as cited in Settersten & Hagestad, 2015). These policies, social organizations, and interactions shape expectations of aging.

| Table 1. Theory generation matrix |
|----------------------------------|
| **Axioms** | **Propositions** | **Theory** |
| Axiom 1: Aging expectations are attributed to various sources | Proposition 1: Various sources and attributions from different experiences constantly reshape a person’s aging expectations (Axioms 1, 2) | Aging expectations are attributed to various sources and are constantly being reshaped through various experiences. These aging expectations will therefore affect a person’s overall health and well-being directly or indirectly through a person’s level of engagement in health-related behaviors (Theory of Aging Attribution and Expectation) |
| Axiom 2: People have positive and negative aging expectations | | |
| Axiom 3: People engage in health behaviors that are catered to meet their aging expectations | Proposition 2: Aging expectations influence health behaviors; this in turn will impact a person general well-being and health (Axioms 3, 4) | |
| Axiom 4: A person’s expectations can affect their current health status | | |
Furthermore, expectations of aging rest on (a) how people see themselves; (b) how other people perceive the individual and react to a person’s aging; and (c) how people perceive and react to the other people’s aging. Assessments of aging are likewise formed by instances presented by demographic (i.e., high life expectancy), epidemiological (i.e., shift from infectious illness to lifestyle diseases), cultural contexts, and historical contexts. Therefore, the interaction between individual characteristics, culture, and social systems is crucial in understanding how aging expectations are shaped (Settersten & Hagestad, 2015).

Older individuals might dismiss the stereotypes of old age and detach themselves from the label of “old”. Furthermore, they try to attempt to make new aging expectations in old age in order to escape this aging stereotype. Several longitudinal studies (e.g., Kleinspehn-Ammerlahn et al., 2008; Sargent-Cox et al., 2012; Schafer & Shippee, 2010; Uotinen et al., 2006; as cited in Wurm et al., 2013) propose that development of negative aging perceptions and identities are influenced by current health and changes in health. When individuals experience health problems, they would blame these problems due to aging rather than their lifestyles. Consequently, this may reinforce existing negative aging expectations and promote the development of more negative aging expectations. Additionally, negative aging expectations can lead to a decrease in psychological resources such as control beliefs, subjective well-being, health behaviors, and coping strategies which further lead to worsening of one’s health. In this manner, a brutal cycle of the worsening condition in old age would happen.

One research emphasized the modifiable character of aging expectations. Bardach et al. (2010) were able to improve individuals’ aging expectation using an intervention through photos and stories of people who were aging positively. Therefore, one can say that aging expectations are attributed to various sources (Axiom 1).

Negative perceptions about aging are widely adopted to represent older individuals which as a whole represent aging stereotypes. Expectations of aging have not kept pace with changing social norms, increased lifespan, and better health. Stereotypical expectations of older adults have limited and defined “behaviors deemed to be appropriate for elderly people” (Wearing, 1995 p. 263, as cited in Hurd, 1999). In a society that values youth, attractiveness, and productivity, old age is usually labelled as a phase affected with physical, social, psychological, and financial problems (Wearing 1995, as cited in Hurd, 1999). Some experts suggest that the source of ageism is humanity’s denial and fear of death. Becker contends that “the idea of death, the fear of it, haunts the human animal like nothing else; it is a mainspring of human activity designed largely to avoid the fatality of death, to overcome it by denying in some way that it is the final destiny of man” (as cited in Hurd, 1999).

Because old age is associated with losses, older persons are usually expected to be sick, dependent, and frail. Old age has been represented in society as a distinct stage in one’s life that is associated with debilitation, decline, and dependence (Vertinsky, as cited in Meisner, 2011). Specifically, several theories underscore that human growth can be considered by phases of both gains and losses, although the proportion becomes more negative as one gets older (Heckhausen et al., as cited in Meisner, 2011). Midlife is the period where there is a shift from growth to an increased risk of age-related losses. These changes usually begin in midlife and continue into old age (Heckhausen, as cited in Meisner, 2011).

Furthermore, Levy and Myers (2004) revealed that one of the most extensively maintained aging stereotypes among older adults is associated with physical health and activity. The negative aging stereotype of feeling less useful in old age is negatively related to indicators of successful aging (Allen et al., 2015).

With such negative perceptions regarding old age, people would easily attribute diseases that are not age related as a natural course as one ages. Subsequently, several researchers have established that older persons commonly attribute health problems to old age (Ettinger et al.,...
1994; C. Sarkisian et al., 2001; Williamson & Fried, 1996). Over attribution of these problems to the aging process would direct the focus of the individual away from the actual problem. Such misattributions could have disastrous effects. Attributing health problems to old age has also been linked with increased mortality, decrease use of preventive health activities, increased acceptance of disease symptoms, and delays in health seeking. Past research has shown that 87% of older adults expect to experience pain with aging, 89% expect to experience fatigue, and 85% expect to have the inability to have sex (Meisner, 2011).

In contrast, some research proposes that regardless of the increased incidence of negative age-related changes, older individuals are generally content with their aging and still feel younger (Gana et al., 2004; Rubin & Berntsen, 2006). Being satisfied and feeling younger of one’s aging are expressions of positive aging expectations (Levy, 2003). Unfortunately, the majority of aging adults endorse these same negative aging ideologies. Thus, people have positive and negative aging expectations (Axiom 2).

A person’s perspective of becoming old whether positive or negative is determined by individual, social, environmental, and other contextual factors. There will be preconceived notions on becoming old but the different experiences one encounters as one ages will change these aging perspectives. Thus, various sources and attributions from different experiences constantly reshape a person’s aging expectations (Proposition 1).

Earlier research suggests that people who keep negative aging expectations underestimate their capacity to participate in physical activity, consequently accepting a more inactive lifestyle (O’Brien Cousins, 2000, 2003). Similarly, older persons who believe that old age would result in unavoidable physical decline did not engage in physical activity (O’Brien Cousins, 2000, 2003). Sarkisian et al. (2005) studied the association between aging expectations and physical activity and found a significant positive relationship between positive aging expectations and aerobic activity. People with negative aging expectations were less likely to engage in physical activities. Therefore, negative aging expectations may be a hindrance to physical activities in older adults (Sarkisian et al., 2005).

The present-day influence of these enduring negative aging beliefs on physical activities can be seen by older adults supporting the idea that physical activities are inappropriate behavior for their age group due to the perceived associated risks (O’Brien Cousins, 2000). Both real and perceived health- and death-related concerns have been also been seen to decrease levels of physical activities (O’Brien Cousins, 2000, 2003). Negative aging stereotypes and attitudes could lead to disengagement in physical activities and to the rejection of its usefulness and benefits (Meisner, 2011).

People’s thoughts of their possible future self would influence their behavior. People usually have positive and negative possible selves. Usually, people strive to attain these positive possible selves and avoid these negative possible selves. People do activities that match their future identities and avoid those activities that would be inconsistent (Markus & Nurius, as cited in Brown, 1998). For example, if you see yourself as a healthy person in the future then you will do activities to be able to attain this by exercising or eating a healthy diet.

 Persons who can clearly imagine themselves achieving an objective strive harder than those who do not. This may be true when the positive possible self is coupled with a negative possible self (Oyserman & Markus, as cited in Brown, 1998). An example is an older adult with both a clearly conceptualized positive possible self (aging successfully) and a clearly conceptualized negative possible self (getting dementia). The positive expectation offers an influential motivation to succeed and the negative expectation offers an influential motive not to fail. As long as the positive expectation is more influential than the negative, the two expectations together can increase motivation to achieve one’s positive possible self.
People who think that old age is not associated with physical declines and diseases will confirm this identity by engaging in a healthy lifestyle. Moreover, there is a predominant negative view related to aging. This perspective could also be a motivator for people to avoid this negative expectation by engaging in behaviors that would delay or prevent the negative effects associated with old age. People, who have positive expectations about aging, will engage in a healthy lifestyle and preventive health measures in order to confirm this personal expectation. These beliefs are related to a person’s expectations of how aging would influence one’s health and well-being.

Another aging expectation would be the belief of successfully doing something amidst old age. In general, people choose objectives according to the anticipation of reaching the goal, in combination with the positive and negative values that is attached to reaching the goal (Atkinson, as cited in Brown, 1998). These factors are expected to combine in a multiplicative manner. This suggests that people multiply the two factors together to know the strength of a person’s motivation to do a behavior. If either value is set at zero, the goal will not be implemented. For example, if an individual perceives no possibility that one can effectively reverse the negative effects of aging such as getting hypertension (i.e., if expectancy = 0), an individual will not engage in activities or a lifestyle that will prevent one in getting hypertension, no matter how much one might value preventing getting the disease. On the other hand, if an individual attaches no value on preventing hypertension (i.e., if value = 0, since he thinks it is a natural occurrence in old age), one will not engage in preventive activities no matter how likely an individual thinks achievement would be.

Moreover, people’s views about their capacity to succeed have a strong impact on their actions. According to Bandura (as cited in Brown, 1998), “people with high self-efficacy beliefs think they have the ability to succeed at a task, to overcome obstacles, and to reach their goals”. An individual with low self-efficacy perceptions is uncertain with the capacity to succeed and do not believe one has the ability to attain the goals. An individual with high self-efficacy perceptions believes that one has high capability. An individual with high self-efficacy accepts more challenging objectives than those with low self-efficacy perceptions. Since accepting more challenging goals is associated with better performance (Locke & Latham, as cited in Brown, 1998), persons with high self-efficacy perceptions have a tendency to perform well on tasks than those who are uncertain of the capability to succeed.

A study states that older adults who have high self-efficacy and participated in physical activities reported lower levels of depression and increased levels of life satisfaction (Barriopedro et al., as cited in Singh et al., 2010). Furthermore, people will select a behavior grounded on the expectation about the capability to do a given action and this perceived capability plays a significant role in improving mental well-being & functioning and exercise adherence (Davis et al., as cited in Singh et al., 2010). Therefore, people choose to engage in activities that people believe one can successfully accomplish. This is the reason why people are most likely to engage in a healthy lifestyle and preventive health measures if people think one can successfully do it. Hence, people engage in health behaviors that are catered to meet their aging expectations (Axiom 3).

There is reliable evidence showing that an aging individual’s beliefs about the aging process (i.e., age stereotypes, aging self-perceptions, aging attributions, and aging expectations) correlate with, and predict, a number of health, illness, and health behavior outcomes. Levy (2003) showed that disability and disease processes that are related to aging may be partly explained by the effect of psychosocial factors of the aging self. Findings from both observational and experimental research have revealed that age-related preconceptions can become significant determinants of an older adult’s well-being. This development happens both intentionally and unintentionally (Horton et al., 2008).

Conversely, results from the German Aging Survey proposed that middle-aged persons with more positive perceptions of age-related growth and decline engaged in sports more frequently, as long as these people were healthy enough to be able to do so (Westerhof & Wurm, 2015). Older persons with more positive perceptions of aging also walked more often and increased walking
over time. This is an advantage because walking is usually the only physical activity that may be suggested in the presence of health conditions (Westerhof & Wurm, 2015).

Positive aging expectations were also linked to an improved self-reported physical and mental health and this association between aging expectations and health was partially mediated by engagement in health-promoting behaviors such as interpersonal relations, stress management, and physical activity (Kim, 2009). Self-perception of aging can also affect a person's engagement in other health-promoting behaviors such as participating in exercise, eating a healthy balanced diet, use of health care resources, having regular physical examinations, and limiting the use of alcohol and/or tobacco (Levy & Myers, 2004). Specifically, positive self-perceptions were related to an improved participation in strenuous physical activity and a higher probability of having a physical examination in the last 2 years (Meisner & Baker, 2013; Meisner et al., 2013).

Numerous studies have shown that having more positive images of one's own aging process and feeling younger are related to better subjective well-being and physical health (Barrett, 2003; Steverink et al., 2001; Westerhof et al., 2012). So a person’s expectations can affect their current health status (Axiom 4).

People who think that acquiring health conditions is an inevitable occurrence as one becomes old will most likely accept this eventuality. People will confirm this expectation by doing activities consistent with this possible self. People who attribute health conditions as a normal part of the aging process will have negative expectations about aging. This leads to disengagement in healthy lifestyles and preventive health measures.

On the other hand, people who think that old age is not associated with physical declines and diseases will confirm this identity by engaging in a healthy lifestyle. Moreover, a predominant negative view related to aging could also be a motivator for people to avoid this negative expectation by engaging in behaviors that would delay or prevent the negative effects associated with old age. People who have positive expectations about aging, will engage in a healthy lifestyle and preventive health measures in order to confirm this personal expectation. Furthermore, people who want to age well will perform activities that will be able to meet this goal. But the motivation to do such an activity can also be influenced by the expectations of successfully completing it. Thus, the probability of engaging in healthy behaviors is increased if people perceive aging positively combined with the positive expectation of successfully completing such activities.

Since persons who expect to age well will engage in behaviors that will confirm this possibility, this consequently will result in positive effects in the person's individual status. Thus, we can say that aging expectations influence health behaviors; this in turn will impact a person's general well-being and health (Proposition 2).

Figure 2 presents the generated theory derived from the propositions and axioms. People's aging expectations are attributed to several sources and these expectations are constantly being reshaped by various experiences as one ages. Such attributions are shaped by demographic (i.e. increase in life expectancy), epidemiological (i.e. change from infectious disease to lifestyle-related disease), historical contexts, social policies, and culture (Settersten & Hagestad, 2015). Moreover, aging expectations are also shaped by various sources such as shared meanings, accrued through lifelong interactions from the environment.

Aging expectations will also influence a person’s engagement in health-related behavior. Therefore, people who attribute health conditions as a normal part of aging will have negative expectations about aging. People will confirm this expectation by doing activities consistent with this possible self. This leads to disengagement in healthy lifestyles and preventive health measures. On the other hand, people who think that old age is not associated with physical declines and diseases will confirm this identity by engaging in a healthy lifestyle. Moreover, a predominant negative view related to aging
could also be a motivator for people to avoid this negative expectation by engaging in behaviors that would delay or prevent the negative effects associated with old age. People, who have positive expectations about aging, will engage in a healthy lifestyle and preventive health measures in order to confirm this personal expectation. These people will engage in more physical activities, eat nutritious food, manage stress properly, and take responsibility of their own health.

Another aging expectation is the expectation of successfully completing an activity amidst old age. Thus, the motivation to do a health-related behavior can also be influenced by the expectations of successfully completing it. Those having negative expectations of success will accept it as part of being old and will no longer engage in activities that will prevent or delay the negative effects of aging. Thus, the probability of engaging in healthy behaviors is increased if people perceive aging positively combined with the positive expectation of successfully completing such activities.

Furthermore, aging expectations will influence a person's general health and well-being. Specifically, those who have positive aging expectations will have better health outcomes while those having negative expectations will have poorer health outcomes in terms of physical, mental, and social well-being. These health outcomes are also influenced by engagement in health-related behavior coupled with their aging expectations. Since persons who expect to age well will engage in behaviors that will confirm this possibility, this consequently will result in positive effects in the person's health and well-being.

The present study has potential limitations and hence a careful generalization of the result is needed. Since this is a theoretical paper, there needs to be further validation of the propositions of the theory itself using appropriate research methods. This will result in possible strengthening or modification of the theory.
4. Conclusion
People have positive and negative aging expectations. These aging expectations are attributed to various sources and are constantly being reshaped through various experiences. These aging expectations, such as: (1) the expectations of how aging would influence one’s health and well-being; and (2) the expectations of successfully doing an activity would influence engagement in health-related behaviors. These aging expectations will, therefore, affect a person’s overall health and well-being directly or indirectly through a person’s level of engagement in health-related behaviors. Consequently, one’s health and well-being could also be a major source of reshaping one’s aging expectations. Based on this, it is suggested that older adults and the public must be educated with the difference between anticipated and pathological deviations related to aging or old age. People should be educated about the negative aging stereotypes. This has implications for public health policies and health promotion programs.

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Author details
Johnny J. Yao Jr.1
E-mail: johnnyjyao@gmail.com
ORCID ID: http://orcid.org/0000-0003-0566-7747
1 Research Office, Velez College, Cebu City 6000, Philippines.

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