FACTORS RELATED TO SUCCESSFUL AGING IN THAI ELDERLY: A PRELIMINARY STUDY

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ABSTRACT: Due to the growth of the older population in Thailand and the importance of psychological factors affecting mental and physical health among the elderly, the present study sought to investigate the relationship between successful aging, as defined by five interrelated dimensions (i.e., body, mind and emotion, brain and cognition, social, life wisdom), and three psychological correlates (i.e., mindfulness, family functioning, social engagement). Participants were 201 older adults living in Bangkok and adjacent areas. The study was correlational, using a multiple-indicator and multiple-correlate model analyzing data drawn from four self-reported psychological measures. The three correlates were significantly and positively related to a hypothetical construct of successful aging, with social engagement having the strongest relationship, followed by family functioning and mindfulness, respectively. These results have generalized the previous, qualitative findings to a larger sample of older adults and been inferred to senior citizens in Bangkok and neighboring provinces.

Keywords: Successful aging, Mindfulness, Family functioning, Social engagement

INTRODUCTION

The population of advanced age has increased steadily over the last 20 years largely due to advancements in medical sciences and technologies. In Thailand, it is expected that this group will become more important in society and researchers and practitioners alike have turned their attention to building its members' physical fitness and mental strength. Although many scholars have proposed an integrated, holistic approach for designing interventions to improve physical and mental well-being among the elderly [1], there are insufficient research studies focusing on psychological factors while those examining biological and physiological factors abound.

In order to conceptualize a definition and components of successful aging, the investigators interviewed dozens of Thai elderly, asking for their opinions about essential characteristics of individuals who are successful in their aging lives and factors that likely promote such characteristics. Based on theoretical perspectives, the content analysis revealed five core dimensions of successful aging: (1) body, (2) mind and emotion, (3) brain and cognition, (4) social, and (5) life wisdom. That is, successfully aging adults would be absent from disease and to a large extent independent in doing everyday activities. A sense of self-worth and feelings of high energy and satisfaction with life are essential characteristics of the mind and emotion dimension while the brain and cognition dimension is basically characterized by capabilities to learn new things and to pass on knowledge to younger members in society. Regarding the social dimension, older adults would be successfully aging when they are recognized as significant by family members and close friends, as well as by regularly having conversations and opportunities to share information and affection with them. Last but not least, knowledge and acceptance of the truth (e.g., nothing lasts forever) may be unique attributes of successful aging among Thai elderly and these were placed into the life wisdom dimension.

To our knowledge, a five-dimension model of successful aging is the first model developed, though not yet fully validated, from interview content drawn from senior citizens in Bangkok. There are some overlapping features between this model and those developed in other countries. For example, Depp and Jeste classified the components of 29 definitions of successful aging into 10 categories [2]. Among the most frequently cited categories were physical functioning, cognitive functioning, life satisfaction/well-being, and social engagement, which were fairly consistent with the four dimensions (except life wisdom) in the present study.

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Also from the interview, mindfulness, good relationships with family members, and participation in social activities were reported by the elderly as important factors that may contribute to successful aging. Mindfulness training, characterized as an activity wherein an individual attempts to broaden and sharpen self-awareness by directing and maintaining attention to a specific object and/or observing what is happening in the present moment [3]. Research has found that mindfulness training can improve psychological health (e.g., enhancing subjective well-being and reducing stress reactivity) in a range of populations and circumstances [4]. However, empirical studies examining the impact of mindfulness training on older people's physical and mental health are rare [4]. High levels of mindfulness likely facilitate older people to regulate their emotions and to improve their cognitive functions by helping them be more aware of their environment and inner states. Moreover, mindfulness meditation was hypothesized to influence the rate of cellular aging, as measured by the length of telomeres (i.e., nucleoprotein structures at the ends of chromosomes) and telomerase activity, by helping individuals properly appraise demands of a stressor and inhibit ruminative thinking [5].

Family functioning, simply defined in the present study as activities and/or interactions that the elderly contribute to (e.g., making family members happy) and receive from (e.g., getting support when in trouble) their family members. It has been found that perceptions of being useful to and supported by family members and friends can impact physical and mental well-being among the elderly [6]. Greunewald and colleagues, for instance, asked older adults how often they felt useful to others (never/rarely, sometimes, and frequently) at the onset of the study and assessed the rates of disability and mortality at the 7-year follow-up [7]. As a result, older adults who reported that they never/rarely felt useful to others were approximately three times as likely to be disabled and die as those who reported frequent usefulness. In another longitudinal study conducted by Krause, older people who perceived their family members and friends as sources of emotional support, as well as anticipating support when in need, reported a greater sense of meaning in life measured two to three years later [8].

Typically, engagement in social activities is one important determinant of successful aging. Positive social interactions and strong social networks have been proposed, and rudimentarily examined, as buffers against cognitive deterioration and emotional difficulties among the elderly [9, 10]. People in advanced age would exercise their cognitive functions (e.g., attention and memory) and feel more secure and valuable when they participate in social activities. They may have to utilize their cognitive functions in attempting to keep a conversation with others, as well as contributing something to society such as passing on knowledge to younger members in communities. Seeman and colleagues, for example, found that a greater amount of social contact in the past was related to better cognitive outcomes (i.e., executive function and episodic memory) whereas an amount of social conflict showed a negative relationship with executive function [10].

A multiple-indicator and multiple-correlate (MIMIC) model allows the investigators to examine the relationship between global successful aging as a latent variable indicated by the five distinct but interrelated dimensions and its psychological determinants. Readers who may not be familiar with the MIMIC model could think of it simply as multiple regression analysis where a criterion variable is latent and indirectly observed through multiple indicators. In addition to the relationship between predictors and a latent criterion, direct relationships between predictors and observed indicators can possibly be tested in the model. However, causal relationships between successful aging and the determinants cannot be assumed from this model because the present study was correlational, collecting data at one time. Hence, the present study sought to investigate the model predicting a state of successful aging, with the three significant correlates emerged from the qualitative results, among community-based senior citizens in Bangkok and adjacent areas.

METHODS

Participants

Two hundred and one older adults (66 men, 134 women, and 1 not reporting his or her gender) aged between 60 and 91 years old (M = 70.7, SD = 6.1) participated in the study.

Procedures

With a convenience sampling method, participants were recruited by a team of trained research assistants at several aging clubs and associations located in certain areas of Bangkok and adjacent provinces. According to the procedure proposed to, and already approved by, the Institutional Review Board of Chulalongkorn University, they were informed about the purposes and content of the research study. For those who were illiterate,

Table 1 Means, standard deviations, internal consistency reliability, and bivariate correlations among the five dimensions of successful aging and the three correlates

	1	2	3	4	5	6	7	8
Successful aging								
1. Body	-							
2. Mind and emotion	.32*	-						
3. Brain and cognition	.53*	.08	-					
4. Social	.47*	.24*	.57*	-				
5. Life wisdom	.29*	.31*	.31*	.28*	-			
Correlates								
6. Mindfulness	.26*	.39*	.31*	.32*	.40*	-		
7. Family functioning	.35*	.49*	.37*	.57*	.35*	.50*	-	
8. Social engagement	.34*	.10	.50*	.53*	.39*	.30*	.49*	-
M	10.68	10.28	10.80	10.74	9.96	11.94	26.31	19.92
SD	1.48	1.87	1.50	1.61	1.47	2.07	3.64	3.27
α	.69	.82	.78	.81	.50	.89	.86	.67

Note. Internal consistency coefficients were computed by using inter-item polychoric correlations as input data.
*$p < .01$.

research assistants would verbally explain the questionnaire instructions and read aloud the item content.

Measures

A survey packet consists of items asking about demographic information (i.e., age, gender, education, marital and health status, and whom to live with) and four measures developed and validated particularly for use with Thai elderly: the Successful Aging Inventory, the Mindfulness and Concentration Scale, the Family Functioning Scale, and the Social Engagement Scale.

The Successful Aging Inventory is comprised of 20 items, four in each dimension, assessing the five dimensions of a state of successful aging: body, mind and emotion, brain and cognition, social, and life wisdom. Responses were rated onto a three-point Likert scale, ranging from 1 ("not true to me") to 3 ("true to me"). Item examples are "My health conditions are better than those of people in my age" (body), "I am always disappointed in my life" (mind and emotion), "I could pass on experience and knowledge to the next generations" (brain and cognition), "I am an important person to my family and close friends" (social), and "I like to compare with others, to be rich, to be after something, and to be like superior others" (life wisdom). The higher the scores, the more successful the older adults were in certain dimensions.

Five items in the Mindfulness and Concentration Scale measure individuals' spectrum of awareness (or mindfulness) and a state of concentration in certain circumstances. As with the Successful Aging Inventory, participants responded to each item on a three-point Likert scale, ranging from 1 ("not true to me") to 3 ("true to me"). An item example is "While I am doing something, I concentrate and am not easily distracted". High scores indicate relatively high degrees of mindfulness and concentration.

The Family Functioning Scale includes 10 items measuring positive and negative interactions between the elderly and his or her family members. Responses were rated onto a three-point Likert scale, ranging from 1 ("not true to me") to 3 ("true to me"). An item example is "My family members are open to my opinions". High scores indicate relatively good family functioning and/or relatively positive interactions with family members.

The Social Engagement Scale includes eight items measuring older adults' involvement in social and neighboring activities such as a wedding ceremony. Again, a response format was a three-point Likert scale, ranging from 1 ("not true to me") to 3 ("true to me"). An item example is "I engage in helping activities such as donating things to poor and suffering people". High scores signify relatively frequent social participation.

RESULTS

More than three-fourths of the participants were married (88.6 percent), living with at least one family member (87.1 percent), and had been diagnosed with congenital disease (75.6 percent). Approximately one-fourth had earned some university degree (26.9 percent).

Table 1 shows means, standard deviations, internal consistency coefficients, and bivariate correlations among the five dimensions of successful aging and the three correlates (i.e., mindfulness, family functioning, and social engagement). All the zero-order correlations were significant and positive,

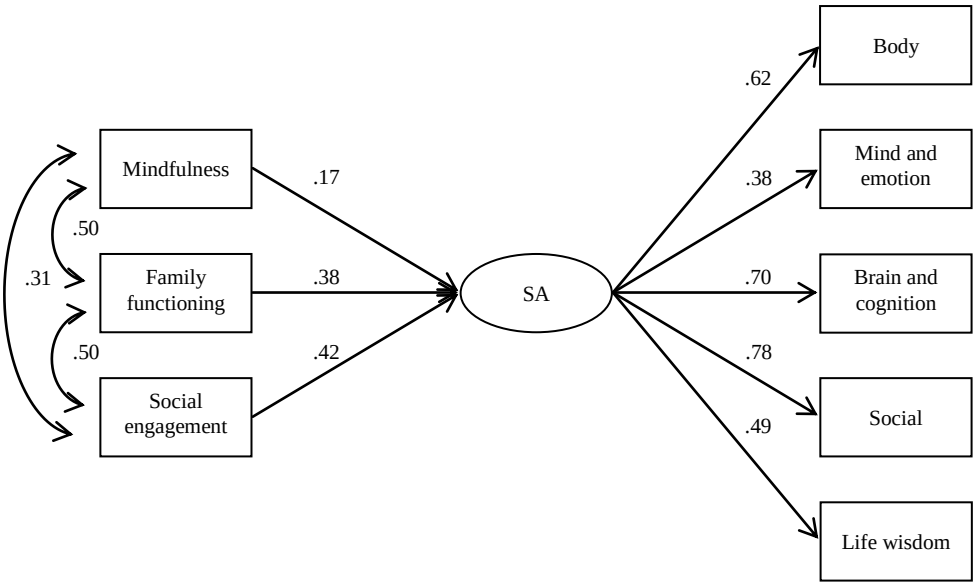


Figure 1 A MIMIC model predicting successful aging

Note. SA = successful aging. Disturbances (or error variances) were omitted for simplicity. All the standardized coefficients (factor loadings, regression paths, and correlations) were statistically significant at $p < .05$. An unstandardized factor loading between successful aging and the body dimension was fixed to 1 in order to scale the latent variable.

except that between the mind and emotion dimension and the brain and cognition dimension of successful aging and that between the mind and emotion dimension and social engagement.

Figure 1 displays a MIMIC model with the five indicators of successful aging and the three correlates. The model was analyzed with the statistical program LISREL 8.8 [11]. Because of a violation of the multivariate normality assumption among the observed indicators, the robust maximum likelihood estimation method was applied with a scaled χ^2 and standard errors computed from an asymptotic covariance matrix. A misfit between the proposed model and the data was observed, the Satorra-Bentler scaled χ^2 (17, N = 201) = 93.20, $p < .05$, RMSEA = .150 with 90% CI [.121, .180], GFI = .87, CFI = .90, SRMR = .085, largely due to the fact that the latent factor accounted for only 14 percent of variance of the mind and emotion dimension (standardized factor loading = .38). Since the factor loading between the latent factor and the mind and emotion dimension was statistically significant and emotional health is an important defining feature of successful aging [6, 9], however, the investigators decided to keep this dimension in the model even though it shared little variance with the other dimensions.

All the factor loadings and the regression coefficients were statistically significant (Figure 1). The three correlates were positively related to successful aging, with social engagement having the strongest relationship (standardized regression coefficient = .42), followed by family functioning and mindfulness, respectively. Collectively, they explained 62 per cent of variance of the latent variable.

Because most of the variance of the mind and emotion dimension cannot be explained by the latent variable, modification indices suggested that there may be direct paths between the two correlates and the mind and emotion dimension. That is, when controlling for global successful aging (i.e., the latent variable), family functioning may be positively associated with the mind and emotion dimension while, more interestingly, social engagement may have a negative correlation. However, these associations were inconclusive in the present study, and further research is warranted.

DISCUSSION

The present study sought to quantitatively investigate the relationship between successful aging and its psychological correlates. According to the qualitative findings, mindfulness, family functioning, and social engagement were hypothesized to have positive impacts on a state of successful aging, as defined by the five dimensions, among older adults. The results supported the hypotheses. Consistent with the literature and past research, involvement in social and community

activities yielded a positive relationship with successful aging. As a promising explanation, actively engaging in their social spheres can help older adults exercise their physical (e.g., mobility) and cognitive (e.g., attention and memory) functions, resulting in better physical and mental health [10].

Positive interactions with family members also play a vital part in facilitating older adults to become more successful with their age. A positive association between levels of family functioning and those of global successful aging found in the present study suggested that older adult's perceived usefulness to and support from his or her family may lead to healthy relationships with others in the family and improvement in physical and emotional well-being. Taken together, a sense of connection with a larger society and family members allows older adults to get closer to a state of successful aging. Mental health practitioners and even policy makers should design interventions aimed at both increasing social and interpersonal skills among older adults and providing supportive environment (e.g., forming social activities for the elderly and educating others about signs and consequences of senility).

Mindfulness (and concentration, as measured in the present study) had a small, positive association with successful aging. This finding expands the body of knowledge in that mindfulness training may benefit not only adolescents and young adults but older individuals as well. Although a solid mechanism by which mindfulness training improves physical and mental health has not been demonstrated, increases in bodily awareness and self-regulation are potential candidates [12]. That is, older people who are more aware of their internal states (e.g., thoughts and feelings) and external environment may be more able to regulate their behaviors and emotional expression, resulting in better health and emotional stability. Nevertheless, the small magnitude of a linear relationship between mindfulness and successful aging suggests that mindfulness may play other roles in the model predicting physical and mental health among the elderly. For example, mindfulness may not have a direct effect on successful aging, but it may moderate the relationships between successful aging and other determinants. Older adults who are able to maintain a state of broadened awareness and focus their attention to specific stimuli may gain more advantages when experiencing positive interactions with other people in their family and community. On the contrary, those who are mindless when doing something may not appreciate social contact and family activities, resulting in less impact of social interventions on physical and psychological wellness. Future research should examine moderating effects of mindfulness on the relationships between successful aging and other correlates.

Empirically, mind and emotional health seemed to share little variance with the other dimensions of successful aging. A sense of self-worth and a feeling of disappointment in one's life, for example, may not go hand in hand with physical and cognitive abilities, social relationships, and a state of wisdom. This may become problematic in defining the components of successful aging for Thai elderly, but in a positive light, older adults could regulate their emotional well-being regardless of their physical disability and cognitive deterioration. This discrepancy allows researchers to investigate adaptive strategies older people use to keep their mind healthy while experiencing decreases in physical strengths and cognitive capacity [6].

Related to the uniqueness of the mind and emotion dimension, modification indices suggested that social engagement may be directly and negatively correlated with unique (and error) variance of this dimension. Two possible explanations were proposed here. First, because older individuals have inadequate energy and resources in order to maintain large social networks, prioritizing and selecting only activities and social contact that provide them the most desirable outcomes may be the best strategy to optimize their emotional well-being [6]. Too many social activities may be a drawback as older adults could not allocate enough energy for every single activity. Perhaps a relationship between social engagement and the mind and emotion dimension is supposed to be curvilinear rather than a linear relationship modeled in the present study. Second, the items in the Social Engagement Scale are geared toward assessing frequency of participating in social activities, not quality or perceived outcomes of such activities. Older adults who frequently get involved in social activities but could not handle negative social exchanges that probably happen (e.g., getting into conflict or rejection) may compromise their emotional well-being. Furthermore, some forms of constraints such as compulsive altruism, a situation in which older adults feel that social activities (e.g., volunteer work) are very demanding that they could not control the amount of time spent, may limit freedom and choices of social engagement [13]. As a consequence, older adults may not engage in their most preferable activities, thereby feeling less

successful.

The present study has some limitation. First, the data were drawn from self-report measures which basically assess subjective perceptions of older adults, as opposed to objective indicators such as biomarkers and actual cognitive functions measured by a battery of tests. For future research, objective instruments should be incorporated into a set of self-report measures because they may provide information from different aspects of successful aging and may be predicted by different psychological and behavioral factors [14]. Second, causal relationships between successful aging and its psychological correlates cannot be established from the present study. Longitudinal and intervention studies are the next step as a means of advancing knowledge of gerontology research in Thailand. Studies examining the current model with older people living in rural areas will also make a great contribution. Third, even though the three psychological correlates explained more than half of the variance of successful aging, other dispositional (e.g., resilience) and environmental (e.g., health care accessibility) factors may give more insight into this field of study.

In conclusion, the present study quantitatively exhibits the positive associations between successful aging and its three psychological correlates. These results have generalized the qualitative findings to a larger sample of older adults representing senior citizens in Bangkok and adjacent areas. The three psychological correlates warrant different levels of intervention for their own right. That is, all community-based, family-based, and individual-based interventions are needed in order to effectively support the elderly and tackle age-related problems. These tasks require cooperation among mental health practitioners, policy makers, community and family members, and older individuals themselves.

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