

Research Article

The Impact of Perceived Control and Future-Self Views on Preparing for the Old Age: Moderating Influences of Age, Culture, and Context

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Abstract

Objectives: Preparation for age-related changes has been shown to be beneficial to adjustment in later life. However, an understanding of the factors that influence such preparations is rather limited. This study examines whether perceived control and future-self views (FSV) influence preparations for old age, and if this influence varies across ages, domains of functioning, and cultures.

Methods: Assessments of perceived control, FSV, and preparations for old age in each of four different life domains (social relationships, finances, work, and health) were obtained from 1,813 adults (ages 35–85) from Germany, Hong Kong, and the United States.

Results: Future-self views partially mediated the relationship between perceived control and preparation for old age across both domains of functioning and cultures. With one exception, the association between perceived control and preparations increased with advancing age across contexts. Evidence for similar age-related moderation of the indirect effect of control through FSV was more limited.

Discussion: These results suggest that perceived control that is not necessarily related to aging affect FSV, which in turn influence preparing for old age. Further, our results indicate that such relationships are context- and age-specific, highlighting the importance of considering the salience and diversity of life domains and cultures.

Keywords: Context, Culture, Perceived control, Preparations, Retirement

With prolonged life expectancy, more people are experiencing the myriad changes in both personal functioning (e.g., health, cognitive ability) and life circumstances (e.g., finances, social networks) associated with aging over a longer period of time than ever before. This extended period of life during retirement highlights the necessity of making preparations to deal with these changes. Although a variety of social welfare programs for older adults exists in most

developed countries, there are still realms where either individuals are responsible for making their own provisions for their old age or such programs are not sufficient for meeting the needs of the aging individual. As might be expected, research has demonstrated that preparations for age-related changes are associated with many benefits. For example, individuals who engage in planning for their retirement life in advance show better physical ([Topa, Moriano, Depolo,](#)

Alcover, & Moreles, 2009; Yeung, 2013, 2017) and psychological benefits (Noone, Stephen, & Alpass, 2013; Sörensen, Mak, Chapman, Duberstein, & Lyness, 2012). Such preparations may foster a sense of security or safety, which in turn is positively associated with overall adaptation in later life (Prenda & Lachman, 2001). Thus, successful planning for old age is an important developmental task for adjustment in later life. The present research takes a multidimensional approach to examine preparation for old age, focusing on both the characteristics of the individual and the contexts in which preparations take place.

Age-Related Changes and Domain-Specific Preparation

Despite the evidence for the importance of preparation for old age, our understanding with respect to the determinants and contexts of preparation is rather limited. For the most part, research has focused on people approaching retirement (e.g., middle-aged adults) or those who have just retired (Lee & Law, 2004; Noone, O'Loughlin, & Kendig, 2013). In addition, the vast majority of research has focused on financial planning with a major interest in finances for later life (e.g., Hira, Rock, & Loibl, 2009; Topa & Herrador-Alcaide, 2016; Wang & Shultz, 2010). This research has concluded that determinants of more preparation are older age (Moen, Kim, & Hofmeister, 2001), being male (Taylor & Geldhauser, 2007), and having more education (DeVaney & Chiremba, 2005), which are all related to greater probability of earning a higher income. However, as planning for the future, especially for old age, requires a long-term plan, people at any point in the lifespan should benefit from any form of preparation for old age. A few studies have examined preparations by younger and older adults, both of who are often excluded in retirement studies. For example, Anderson, Li, Bechhofer, McCrone, and Stewart (2000) found that even younger adults report experiences of thinking about planning after retirement though the proportion is rather small relative to other age groups. In addition, retirees planning for later in life have been shown to be better adjusted in very old age than those not engaging in such planning (Donaldson, Earl, & Muratore, 2010). This highlights the potential importance of beginning preparations in young adulthood and continuing to do so throughout adulthood.

In addition, given the multifaceted nature of change (e.g., health, cognitive functioning, work status, social networks, finances, as well as with regard to personal goals and living conditions), the limited focus across contexts of functioning in studies of preparation fails to provide a complete picture regarding the nature of preparations and the eventual impact on well-being. Some existing research does focus on planning involving activities (Moen, et al., 2001; Petkoska & Earl, 2009) and interpersonal relationships (Dew & Yorgason, 2010) after retirement, but a focus on the full range of retirement preparation is rare. One recent

study by Kornadt and Rothermund (2014) dealt with both of these limitations by examining preparation within several different life domains using a broad sample of German adults aged 30–80 years. They found preparation for leisure, work, fitness, and appearance increased to around the age of 65 and then decreased, whereas preparation in the domains of emergency situations, dependence/independence, housing, and finances increased linearly up to the age of 80. These results indicate that preparations for old age are multidimensional and that the focus on specific domains may depend on specific characteristics of the individual, such as their age and living conditions, highlighting the importance of taking a much broader approach to examine preparations for old age.

Perceived Control and Preparation for Old Age

Whereas age has been shown to be one factor that influences preparations, other factors that vary across individuals may also be of interest. One potentially important factor that may be linked to individual differences in preparation for old age relates to control beliefs regarding one's capacity to bring about a given outcome (Krause, 2007; Lachman & Weaver, 1998). That is, people with high control may be more likely to engage in preparations for the future. Some researchers proposed a curvilinear relationship between control beliefs and planning (Lachman & Burack, 1993; Scholnick & Friedman, 1993), suggesting less engagement in planning in both individuals with a high sense of control due to overconfidence as well as in people with low sense of control due to the assumption that they cannot influence outcomes. In later research, a positive relationship between control beliefs and future-oriented planning was found (Prenda & Lachman, 2001). Although these studies highlight the potential role of control in planning, they are limited in terms of the contexts of planning that were studied. In addition, they also do not take into consideration the domain-specific nature of control beliefs (e.g., Lachman & Weaver, 1998). Although general views of control may be of interest in certain contexts, perceptions of control within particular life domains are likely to be influenced by beliefs, knowledge, and experiences associated with that domain (e.g., Skinner, 1996). This suggests that the effects of perceived control on planning in a specific life domain may be best understood by considering perceptions of control within that domain.

As mentioned previously, the research on planning is also somewhat limited in terms of the ages of individuals studied. We suggest that the relationship between control and preparation may be further influenced by the age. For example, control may become increasingly important as the relevance of preparations for old age increases with advancing age, with further moderation being dependent on age. Thus, we expected that the relationship between perceived control and preparation for old age within

each domain will vary by age, with the association generally increasing with age due to the increased salience of preparations.

Future-Self View as a Mediator

In addition to the aforementioned findings and assumptions regarding perceived control, the question remains as to how perceived control is tied to preparation for one's old age. A first explanation for effects of perceived control on preparation is that individuals with high versus low control differ in their beliefs regarding the capability to execute relevant activities (e.g., low control may undermine the conviction that one can successfully maintain physical activities or save money for later times).

Another more indirect influence to help understand potential variability in the impact of perceived control relates to how individuals perceive themselves in old age (i.e., future-self views [FSV]). It is well-established that perceived control and self-efficacy are aspects of self-perception (Bandura, 1990). Thus, a sense of control may be closely related to future-self perceptions. That is, individuals with a high sense of control may have a more positive outlook on their future, because they expect that they can shape their lives in accordance with their goals, and they are confident that they can successfully prevent or overcome any problems that might occur in later life. Such a positive outlook on the personal future will eventually manifest itself in positive FSV, depicting how the person expects to be like in later life. On the other hand, perceiving a low sense of control will typically result in anticipating a negative future for oneself, thus seeing one's life as being influenced by external or unwanted influences. These positive and negative FSV, in turn, provide an important source of motivation for engaging (vs not engaging) in activities related to the personal future and old age. If one's old age is portrayed as something that one is looking forward to, then this facilitates making plans for the future, thinking about what is needed to realize these plans, and implementing the necessary steps toward reaching these goals. Negative FSV, on the other hand, portray old age as a phase in life that is threatening and which is no longer worth living. Having such a negative outlook on one's future will lead people to avoid thinking about this phase of life, and to view it as something that one will have to endure rather than as something that one can actively shape.

Consistent with this perspective, Kornadt, Voss, and Rothermund (2015) suggested that FSV involved expectations, hopes, and fears regarding what the individual would be like in later life. That is, as preparations involve expectations about what is going to happen in the future, future-oriented self-views could serve as a motivational factor for future goals and preparations. Supporting this idea, longitudinal (Kornadt et al., 2015) and cross-sectional (Kornadt, Voss, Fung, Hess, & Rothermund, 2019) studies have demonstrated the linkage between FSV and preparation

for age-related changes: more positive views of one's own aging are related to increased preparations.

In addition, age is expected to moderate the relationships between control, FSV, and preparations for old age. Specifically, with increasing age, FSV of oneself as an old person reflect more immediate future projections that are close to one's current state rather than characterizing a distant and abstract future. Because of this aspect of FSV, linkages between perceived control and FSV of oneself as an old person should thus become stronger with increasing age. Likewise, effects of FSV on preparation behavior should become stronger in old age due to the increasing relevance of age-related preparation.

Cultural Influences

Finally, preparation for old age does not occur in a contextual vacuum. It is not only influenced by individual, but also by social and cultural factors. Above all, the associations between future-oriented perspectives and preparation may be influenced by cultural differences in values, traditions, and social welfare programs across cultures. Both views of oneself in the future (e.g., Hess et al., 2017; Kornadt & Rothermund, 2011) and preparations (Kornadt et al., 2019) have been shown to differ across cultures and domains of functioning in a complex manner, potentially reflecting these factors. In general, it might be expected that the association between perceived control, FSV, and preparations may be buffered by the degree to which social or institutional supports exist within a culture. Thus, for cultures where strong institutional programs are in place within a specific domain of functioning, weaker associations would be expected (e.g., perceived control would have less of an impact on FSV) than for cultures without such supports. For example, the availability of strong public pension programs or comprehensive socialized health care for older adults within a culture may limit the degree of control as well as the necessity of planning within those domains when compared to cultures with less sufficient retirement and health care systems.

The Current Study

The goal of the present study was to investigate the interrelationships between perceived control, views of oneself in later life, and preparation for old age. We examined these relationships across four different domains of functioning (social relationships, finances, work, and health) in three different cultures (Germany, Hong Kong, and the United States). We reasoned that this would allow us to investigate planning in areas that are important to adaptive functioning in later life across cultures that vary in terms of both the available social supports and expectations regarding life in old age. We hypothesized that perceived control would be positively associated with preparations, with this effect increasing in strength with age. We further hypothesized

that the impact of control on preparations would be mediated by views of oneself as an older adult (i.e., FSV), with the strength of the mediation effect increasing with age.

Consistent with the foregoing reasoning and our multidimensional perspective, we also hypothesized that the strength of these mediation effects would vary across domains of functioning and culture. Within the domain of social relationships, we expected these relationships to be weaker in Hong Kong, where there is a strong tradition of filial piety (Cheng & Chan, 2006; Lee & Hong-kin, 2005), and thus there may be less emphasis on extra-familial relationships than in the United States and Germany. That is, a tradition of filial piety in Hong Kong may lead to expectations of narrow, prolonged, and cohesive family relationships, with less importance assigned to other social relationships in later life (Adams & Kurtis, 2015). On the other hand, western cultures affected by Christianity hold ideas of more general attitudes or behaviors towards others, which are not limited to consanguinity (Yuan & Wang, 2011). Relatively higher levels of geographic dispersions of family in the United States may result in an especially strong emphasis on developing a supportive social network in later life. In Germany, lower rates of home-ownership than in other developed countries (e.g., Kaas, Kocharkov, Preugschat, & Siassi, 2017) and government-supported finances for retiree communities or apartments since 2013 may lead to increasing preference for moving into those places and the resulting need to develop new relationships.

With respect to work, we hypothesized that the impact of control on preparations would be stronger in the United States than in Germany and, to a lesser extent, Hong Kong, where mandatory retirement policies exist. The absence of mandatory retirement and the associated flexibility in employment opportunities would necessitate greater importance being attached to planning, with the influence of control and associated perceptions of oneself in the future being elevated. We also expected that connections between perceived control, FSV, and preparations in the financial domain would be weaker in Germany than in Hong Kong and the United States due to differences in the levels of financial support provided by government-based pension systems. Finally, within the health domain, we predicted that associations involving perceived control, FSV, and preparations will be strongest in the United States, where government-supported health care is low and medical expenses are high, necessitating greater need for preparation and a potentially stronger impact of perceived control.

Method

Participants

The sample consisted of $N = 1,813$ persons (aged from 35 to 85) recruited as a part of the Ageing as Future Study from: (a) Wake County, North Carolina, the United States ($N = 515$, 51.7% female; Mean age = 58.42, $SD = 14.08$); (b) Jena and Erlangen, Germany ($N = 811$, 49.4% female; Mean age = 59.28, $SD = 14.10$); and (c) Hong Kong, China

($N = 487$, 56.10% female; Mean age = 58.73, $SD = 13.44$). Private marketing firms (the United States and China) or local registry offices (Germany) provided the randomly selected lists to meet targeted age and gender distributions. Data for the present study was obtained based on responses to a questionnaire that was sent to each participant. Participants received a \$25 gift card for participation.

Household income was assessed on an eight-point scale with the currency adjusted to each country. The scale was recoded into five categories for commensurability (Kornadt et al., 2019), indicating higher average income levels in the United States ($M = 3.89$, $SD = 0.73$) than in Hong Kong ($M = 3.47$, $SD = 1.35$), and both were significantly higher than Germany ($M = 3.04$, $SD = 0.90$), $F(2, 1782) = 110.74$, $p < .001$. Self-rated general health was assessed with a single item ("How would you describe your current state of health?") using a five-point scale (1 = not good at all, 5 = very good). Mean ratings on this item were higher in the United States ($M = 3.11$, $SD = .85$) than in other two cultures (Hong Kong: $M = 2.59$, $SD = 0.67$; Germany: $M = 2.51$, $SD = 1.01$), $F(2, 1794) = 75.61$, $p < .001$.

Measures

Participants completed a paper-and-pencil questionnaire that contained a short demographic questionnaire as well as several domain-specific and general sets of questions assessing a wide variety of constructs. For the present study, responses to the following three instruments were of particular interest.

Preparation for the future

Preparation for age-related changes was assessed with a questionnaire developed by Kornadt and Rothermund (2014). Although nine different life domains (e.g., finances, emergency situations, physical and mental fitness, housing, appearance, social relations, health, leisure, and work) were included in the original instrument, we only used responses to the four domains of specific interest to the present study and for which responses were available on the other measures: social relations, finances, work, and health. Respondents provided ratings on three items within each domain: active preparation (e.g., "I am actively working to maintain my personal relations in old age."), thought about it (e.g., "I think about the topic"), and gathering information (e.g., "I try to gather information about the subject and discuss it with others"). Participants rated their responses to each item on a four-point scale (1 = not at all; 4 = a lot). The three items on each domain of preparations seemingly reflect different aspects of preparation proceeding from thinking about preparation to active preparation. However, preparations have been shown to involve "gathering information" and "thinking" as well as "doing something" (Ekerdt, Hackney, Kosloski, & DeViney, 2001; Kornadt & Rothermund, 2014). In addition, confirmatory factor analyses indicated that all three items loaded on the same general preparations factor in each domain (see below).

Perceived control

A single item assessed perceptions of control in each of the four target domains (i.e., “Regarding my personal situation in the domain of ____”). Participants rated their responses to each item on a five-point scale with the option “I have no control at all,” “little control,” “some control,” “adequate control,” and “a lot of control.” Higher scores indicated greater perceived control.

Future-self views

FSV were assessed within each of the four domains using three to five items. For each item, participants rated themselves as older persons (“When I am older...”) on an eight-point scale. Each item addressed a specific aspect of functioning associated with the domain using two opposing statements (e.g., “When I am older, I will find it difficult to make new friends” versus “When I am older, I will find it easy to make new friends”). Participants gave their responses to each item on an eight-point scale, with higher scores indicating more positive views and lower scores indicating more negative views (The complete questionnaire can be found in Hess et al., 2017.).

Statistical Analysis

Confirmatory factor analyses for FSV and preparations for old age were conducted using M-Plus (Muthen & Muthen, 2012). The goal was twofold: to establish measurement invariance across cultures and age groups in order to determine whether participants from different cultures and age groups interpret these measures in a conceptually similar way, and to obtain latent factor scores for FSV and preparation for old age within each domain. Satisfactory model fits providing evidence of metric invariance were obtained for both measures (for details, see Hess et al., 2017 and Kornadt et al., 2019). Note that in addition to the domain-specific preparations factors, the preparations CFA included two additional methods factors to control for shared variance in items having the same stems (i.e., thought and gathering information) across all domains (Kornadt et al., 2019).

We used the PROCESS macro for SPSS (Hayes, 2018) to examine our hypotheses involving moderated mediation. The macro used 5000 bootstrap samples at 95% confidence interval to measure direct and indirect effects, which has been found to maintain the highest power while controlling for Type I error rate (MacKinnon, Lockwood, & Williams, 2004). The significance of an effect is determined by the 95% CI without zero at $p < .05$ (two-tailed). Listwise deletion was implemented to remove cases with missing data in the small percentage of missing data (less than 3.0%) in each domain analysis.

Within each culture, we ran the moderated mediation models with age as a moderator on all paths for each domain (Model 59, see Figure 1). The models were first examined with gender as a covariate. However, given that gender did not emerge as a significant predictor in predicting

preparations, it was excluded from further consideration. The previously described income and health variables were included as a common covariate across cultures when examined in the domains of finance and health, respectively, due to their relevance to these specific domains.

We explored specific age-related moderation effects at representative points on the age distribution: 1 SD above and below the sample mean. As shown in Figure 1, conditional indirect effects refer to the age-moderated effects of perceived control on preparation through FSV. Conditional direct effects reflect the age-moderated effect of perceived control on preparations. When the same moderator is entered into more than one path that defines an indirect effect, the moderated indirect effect becomes a nonlinear function of the moderator (Hayes, 2018). In that case, the index of moderated mediation as a whole is not available. Thus, our conclusions regarding moderation are based on comparisons of conditional indirect effects and conditional direct effects at each level of the moderator (age).

Results

Correlations

Correlations among all variables are presented in Table 1. Significant ($p < .05$) positive correlations between perceived control and both FSV and preparations were found in four domains across three cultures. In contrast, the associations involving age varied across domains and cultures. For example, within the U.S. sample, positive correlations were found between age and preparations in social relationships, finances, and health, whereas negative associations were observed in work. These comparisons suggest that the impetus for preparing for old age at specific points in life varies as a function of domain (e.g., there is less need to prepare for work in later life when one is no longer part of the workforce). Comparisons within the same domain across cultures may also illuminate similarities or differences in the age-graded expectations associated with behavior in that domain. Regarding finances, for instance,

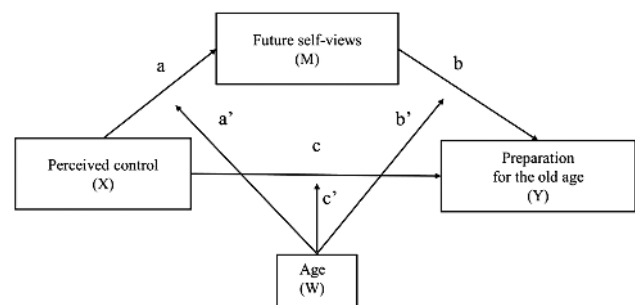


Figure 1. Illustrations of a Model 59. Conditional indirect effect of perceived control on preparation through future-self views = $(a + a'W)(b + b'W)$; Conditional direct effect of perceived control on preparation = $c + c'W$; a': interaction between perceived control and age, b': interaction between FSV and age, c': interaction between perceived control and age.

Table 1. Correlations of Age, Perceived Control, Future-Self Views, and Preparation for the Old Age Within Domains in Each Culture

Domain	Variable	Germany				Hong Kong				United States			
		AGE	CON	FSV	PREP	AGE	CON	FSV	PREP	AGE	CON	FSV	PREP
SOC	CON	-.291***	1			-.050	1			.052	1		
	FSV	-.031	.324***	1		.032	.272***	1		.105*	.388***	1	
	PREP	.159**	.167***	.295***	1	.150**	.141**	.210***	1	.417***	.245***	.372***	1
FIN	CON	-.087*	1			.045	1			.088*	1		
	FSV	.033	.359***	1		-.148**	.278***	1		-.079	.337***	1	
	PREP	.083*	.166***	.193***	1	-.159***	.244**	.201***	1	.343***	.349***	.283***	1
WRK	(Income)	-.305***	.270***	.452***	1	-.202***	.015	.112*	.094*	-.114*	.200***	.340***	.200***
	CON	-.413***	1			-.138**	1			-.159***	1		
	FSV	.035	.217***	1		-.061	.239***	1		-.028	.161***	1	
HEA	PREP	-.249***	.299***	.183***	1	.055	.212***	.177***	1	-.017	.138**	.222***	1
	CON	-.124***	1			-.044	1			-.101*	1		
	FSV	-.001	.409***	1		-.067	.466***	1		.027	.453***	1	
(Health)	PREP	.283***	.112**	.112**	1	.108*	.165***	.119***	1	.394***	.188***	.301***	1
	(Health)	-.301***	.419***	.490***	1	-.128**	.332***	.219***	.145**	-.134**	.445***	.496***	.175***

Note. CON = Perceived control; FSV = Future-self views; PREP = Preparation for the old age; SOC = Friends and other social relationships; FIN = Financial situation and dealing with money; WRK = Work and professional life; HEA = Physical health. * $p < .05$. ** $p < .01$. *** $p < .001$.

positive correlations were observed between age and preparations in the United States and Germany, with the correlation being particularly strong in the former. On the other hand, a significant ($p < .05$) negative association was found in the Hong Kong sample within the same age range.

Moderated Mediation Analyses

Turning to our primary focus, we next examined whether FSV mediated the relationship between perceived control and preparations for old age within each domain and culture, and the extent to which age moderated each relationship in this model. The results are presented for each domain in Table 2. As can be seen, the impact of age as a moderator was generally greater on the direct effects than on the indirect effects. In the following sections, variations in the nature and strength of effects across domains and cultures are described in detail.

Social relationships

Consistent with our hypothesis, age moderated the impact of perceived control on preparations, with the strength of this relationship increasing with age in each culture. Despite similar patterns of the moderated direct effects, some evidence of cultural differences also existed. Specifically, the strength of moderated mediation involving perceived control and FSV increased with age in Germany and the United States, but decreased in Hong Kong. In addition, the overall strength of effects to account for preparation for social relationships was weaker in Hong Kong than in Germany and the United States, supporting our hypothesis of less emphasis on extra-familial relationships in cultures with a strong tradition of filial piety.

Finances

Age was a significant moderator of perceived control on preparations, with the strength of the direct effect increasing with age in Hong Kong and the United States, but decreasing with age in Germany. Also, the overall strength of effects for preparations was weaker in Germany than in the other two cultures. The differences between Germany and both the United States and Hong Kong supported our hypothesis that the effects regarding finances would be weaker in cultures with relatively strong government-supported pension system. The form of the moderated indirect effects also varied across cultures, but those effects were small and nonsignificant.

Work¹

Age moderated the direct effect of perceived control on preparations, with the strength of this association increasing with age in all three cultures. Conditional indirect effects

¹ We considered the possibility that retirees in the analysis of work domain might have influenced our results. When retirees were eliminated, our results remained relatively unaffected. Thus, all participants were included.

Table 2. Moderated Mediation—Conditional Indirect Effect and Conditional Direct Effect Within Domains in Each Culture

	Germany						Hong Kong						United States					
	Conditional indirect effect			Conditional direct effect			Conditional indirect effect			Conditional direct effect			Conditional indirect effect			Conditional direct effect		
	Younger ^b	Middle	Older	Younger	Middle	Older	Younger	Middle	Older	Younger	Middle	Older	Younger	Middle	Older	Younger	Middle	Older
SOC	<i>R</i> ² = .140																	
<i>β</i> (<i>SE</i>)	.045 ^a (.014)	.059 ^a (.010)	.076 ^a (.017)	.050 (.040)	.101 ^a (.026)	.154 ^a (.037)	.043 ^a (.019)	.036 ^a (.011)	.026 (.019)	.037 (.048)	.067 ^a (.032)	.103 ^a (.047)	.046 ^a (.019)	.086 ^a (.016)	.130 ^a (.032)	.069 (.046)	.089 ^a (.031)	.109 ^a (.051)
CI	.019,.074	.040,.080	.044,.112	-.028,.128	.051,.151	.080,.227	.012,.084	.016,.060	-.005,.070	-.058,.131	.003,.130	.011,.194	.014,.090	.057,.118	.072,.195	-.021,.158	.028,.150	.008,.210
	<i>R</i> ² = .077																	
FIN	<i>R</i> ² = .295																	
<i>β</i> (<i>SE</i>)	.010 (.007)	.007 (.005)	.005 (.007)	.051 ^a (.024)	.045 ^a (.015)	.039 (.022)	.012 (.015)	.019 (.010)	.029 (.017)	.121 ^a (.037)	.128 ^a (.027)	.138 ^a (.044)	.025 (.014)	.027 ^a (.008)	.014 (.016)	.133 ^a (.036)	.139 ^a (.023)	.144 ^a (.037)
CI	-.004,.025	-.001,.017	-.008,.018	.004,.098	.016,.074	-.003,.081	-.019,.042	-.001,.040	-.001,.040	-.001,.067	.047,.194	.075,.182	.053,.224	-.004,.053	.012,.044	-.016,.046	.063,.204	.094,.183
	<i>R</i> ² = .106																	
WRK	<i>R</i> ² = .295																	
<i>β</i> (<i>SE</i>)	.023 (.014)	.023 ^a (.008)	.018 ^a (.008)	.102 ^a (.037)	.117 ^a (.023)	.135 ^a (.030)	.013 (.013)	.021 ^a (.010)	.032 (.020)	.080 (.052)	.131 ^a (.035)	.193 ^a (.048)	.009 (.012)	.020 ^a (.008)	.031 ^a (.015)	.065 (.053)	.070 ^a (.031)	.074 (.042)
CI	-.004,.053	.009,.039	.005,.035	.029,.174	.073,.162	.075,.194	-.009,.044	.004,.043	-.001,.078	-.022,.182	.063,.199	.099,.288	-.012,.039	.006,.039	.007,.066	-.038,.169	.009,.131	-.008,.157
	<i>R</i> ² = .074																	
HEA	<i>R</i> ² = .059																	
<i>β</i> (<i>SE</i>)	.015 (.008)	.014 ^a (.006)	.012 (.009)	.069 ^a (.029)	.081 ^a (.021)	.093 ^a (.031)	.0001 (.018)	.005 (.014)	.013 (.024)	.030 (.044)	.067 ^a (.031)	.112 ^a (.047)	.041 ^a (.020)	.035 ^a (.011)	.028 (.016)	.036 (.042)	.059 ^a (.027)	.081 ^a (.043)
CI	-.001,.032	.002,.025	-.007,.030	.012,.126	.041,.121	.003,.153	-.033,.038	-.021,.033	-.036,.061	-.056,.116	.006,.128	.020,.204	.010,.086	.017,.059	-.001,.063	-.046,.119	.005,.112	-.002,.165
	<i>R</i> ² = .114																	

Note: CI = confidence interval; HEA = Physical health; FIN = Financial situation and dealing with money; SE = standard error; SOC = Friends and other social relationships; WRK = Work and professional life.

^aCI does not contain 0, indicating there is a statistically significant result.

^bAge effects were estimated at mean sample age (middle aged), 1 SD below the mean (younger), 1 SD above the mean (older).

were rather small, but showed increasing trend in Hong Kong and the United States, but not Germany. Inconsistent with our expectations, however, the overall impact of control, FSV, and age on preparations was somewhat weaker in the United States than in Germany or Hong Kong.

Health

In line with our hypothesis, the strength of the direct effect of perceived control on preparations increased with age in all three cultures. The conditional indirect effects were somewhat small, with the strength of this relationship decreasing with age in the Germany and the United States. There was no significant conditional indirect effect in Hong Kong. Consistent with our hypothesis, the overall strength of observed effects involving control, FSV, and age on preparations was greater in the United States than in Germany and Hong Kong.

Discussion

The goal of this study was to investigate the impact of perceived control on preparing for old age, and the extent to which this relationship was mediated by views of oneself as an older adult. Furthermore, we tested the hypothesis that age would moderate both the direct and indirect (through FSV) effects of perceived control on preparations, with the expectation that both would increase in strength with advancing age. We also examined the degree to which the strength of this relationship varied across four domains (social relationships, finances, work, and health) in three different cultures (Germany, Hong Kong, and the United States).

Consistent with past studies, we found positive bivariate associations between perceived control, FSV, and preparations (Kornadt et al., 2019; Prenda & Lachman, 2001). The positive association between perceived control and FSV in our study supports the idea that control is an influential facet of self-perception (e.g., Bandura, 1990). More importantly, our expectations regarding the impact of perceived control on preparations through FSV were also supported, suggesting that people who are perceiving high levels of control are more likely to have positive views of themselves in later life, which in turn have a positive impact on engagement in preparations for the old age. That is, perceived control and FSV can be considered positive factors contributing to preparation for old age.

Culture and Context

As expected, we also found that the strength of associations varied across domains of functioning and cultures, providing further support for the multidimensionality and domain specificity of aging-related processes (Kornadt & Rothermund, 2011; Kornadt et al., 2019). For example, consistent with our hypothesis, stronger effects in the domain of social relationships were found in the United States

and Germany than in Hong Kong. This was thought to reflect cultural differences in emphases on preparations for future social relationships. Government financial support for living in retiree housing and low home-ownership in Germany as well as geographical dispersion of family with age in the United States were expected to be associated with an emphasis on building new social relationships in later life. In contrast, the tradition of filial piety in Eastern-Asian cultures such as Hong Kong was expected to result in a greater emphasis on family, with reduced focus on building other relationships (Cheng & Chan, 2006; Lee & Hong-kin, 2005). The stronger associations between perceived control, FSV, and preparations in Germany and the United States, compared with Hong Kong, can then be interpreted as a reflection of more self-directed efforts in preparing for later life.

Cultural differences were also observed in the domain of finances. Weaker predictive associations were found in Germany compared to the United States and Hong Kong. Due to a relatively well-provided state-supported pension system in Germany, preparations for finances may be less of an issue, and thus less affected by individual factors such as perceived control and FSV than in cultures where such systems are less generous. For the health domain, the expected pattern of stronger effects in the United States than in either Germany or Hong Kong was observed, conceivably reflecting low government-provided health care and high medical expenses in the United States. In addition, the youth-oriented culture in the United States (Westerhof, Whitbourne, & Freeman, 2012) may also increase the focus on managing and maintaining health. On the contrary, the necessity of preparations for health may not be perceived as strongly in Germany due to a well-provided universal health care for all individuals. Similarly, lower health-care expenses in public hospitals and clinics in Hong Kong may also lessen perceived necessity for preparations.

Age Effects

We had predicted that age would moderate both the direct and indirect effects of control on preparations. Whereas consistent moderation was observed in the former case, age-based moderation was less evident for the indirect effect. The relatively weak age effects on the mediation through FSV are suggestive of stable relationships across adulthood. For example, young adults with high-perceived control still expect their future-self to be positive, though perception of future-self as an older adult may be distant or abstract. In addition, even for young adults, positive expectations about their old age may induce those young adults to engage in future-related preparations.

For the work domain, the finding of weaker overall impact in the United States than in Germany or Hong Kong was contrary to our hypothesis. This was due to weaker age effects and lower impact of perceived control on preparations for work relative to the other two cultures. Given

that mandatory retirement is not policy in the United States, individuals regardless of age could be more likely to plan for work. However, despite their intentions, fast-changing job markets and low job security in the United States may lessen the impact of perceived control towards preparations for work, potentially accounting for the weaker effect.

Strengths and Limitations

A strength of the current study is that several domains of preparation for old age were investigated in a sample encompassing much of the adult lifespan comprised of individuals from three different cultures. This allowed us to explore both generalities across cultures as well as effects that were specific to particular life contexts. Whereas there were many commonalities in the nature of the obtained effects, the strength of the effects varied across cultures within specific domains of functioning, with these variations being meaningfully linked to cultural differences in institutional and traditional social support systems. Such findings emphasize the importance of considering aging from a contextual perspective as well as the limitations associated with more general approaches to understanding adaptive processes in later life.

The results of our study also extended recent work by Kornadt et al. (2019), who also examined cultural influences on preparations for old age. Kornadt and colleagues focused on how psychological variables relating to perceptions of the future (e.g., concreteness of perceptions of future time) influence cultural differences in preparations. In contrast, our study provides a somewhat different perspective by examining how current personal attributes (i.e., perceived control) influence both future-related constructs such as views of oneself as an older adult and preparations in each culture. Consistent with our prior work examining the relationship between personality, aging attitudes, and life satisfaction (Park & Hess, 2019), the present results suggest that current personal attributes that are not necessarily related to aging may have important outcomes on behavioral and psychological processes that are supportive of aging.

Nevertheless, some limitations should also be noted. Though we identified the impact of perceived control, FSV, age, culture, and domains on preparations, examination of other potential variables related to preparations would be useful to extend our understanding of planning for old age. For example, individuals who perceive future time as more expansive may be motivated to engage in greater preparation for the future. Also, although our data were obtained from three cultures, more targeted identification of cultures that vary systematically in, for example, the support systems and views regarding aging would allow more precise identification of determinants of cultural variation (see, e.g., North & Fiske, 2015). Moreover, as our data are cross-sectional, we cannot make strong conclusions regarding causality between perceived control, FSV, and preparations. Thus, for example, future longitudinal

studies should look at the extent to which perceived control and FSV at Time 1 predict preparation at Time 2. Such a longitudinal study may be beneficial to examine the effects of specific life transitions at the individual level as well as changes in regulations and values at the societal level. For example, greater financial planning may occur at times in adulthood when more disposable income is available for retirement savings (Flood, King, & Ruggles, & Warren, 2015). Similarly, the impact on preparations and perceptions of control associated with the institution of new social programs (e.g., legislation changes in pensions or retirement age) and within a culture could also be examined as a type of quasi-experiment.

Our conceptual framework and associated models also focused on FSV as predictive of preparations. It might be argued that alternative models may be just as viable (e.g., preparations lead to more positive views of oneself in later life). However, the results of longitudinal analyses demonstrating that change in FSV were more predictive of change in preparations than vice versa (Kornadt et al., 2015) support the present perspective. As a final limitation, although perception of high control is related to both positive views of oneself in later life and greater levels of preparation, it is still unclear which specific facets of control are operative in each domain. For example, other research viewed control beliefs in the context of internal (i.e., a belief that one can control one's life) versus external (i.e., a belief that life is controlled by other outside factors (Furnham & Steel, 1993; Lachman & Weaver, 1998). Shultz and Schultz (2016) found age-related changes in internal locus of control, with increases until middle age, and then decreases. In addition to age, different effects of locus of control across domains of functioning and cultures might be expected. Therefore, future research using a more extensive measure of control would be necessary to determine which specific control, and the extent to which control, are important in preparation for the old age.

Conclusion

Taken together, the current study investigated the interrelationships between control beliefs, FSV, and preparation for old age within different domains of functioning in individuals across adulthood in three cultures. We found positive effects of control beliefs through FSV on preparations, suggesting that the impact of control may at least partially reflect the extent to which it results in a positive perception of one's future and, potentially, the perceived benefits of preparation. In addition, the consistently increasing or decreasing effect size with age in the relationship between control and preparation provides evidence for importance of age salience in preparation research. Despite the limitations noted above, our study expands understanding of how individual perceptions of control and views of oneself as an older adult affect preparations in different-aged adults across domains of functioning and cultures.

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