Time for a change: Temporal perspectives and health goals

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ABSTRACT

Future time perspective influences the relations among age and health behaviors (Stahl & Patrick, 2012). However, past and present temporal perspectives may also play a role in the goals that people pursue. Whether age interacts with temporal perspectives to influence health goals has not been fully examined. Thus, the aim of the current study was to examine the associations among age, different temporal frames, and behavioral change goals related to health. We examined these questions using data provided by 253 adults, ages 18–87 years ($M = 40.74$, $SD = 14.82$). Results from mediational regression analyses showed that age and a full range of valenced temporal perspectives accounted for 12% of the variance in the number of health goals adults endorsed. Only positive present temporal perspective related directly to health goals. By using a broader measure of temporal frames simultaneously, we may have a more accurate view of temporal perspective in adulthood.

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1. Introduction

Temporal perspectives involve attitudes, thoughts, and affective tone regarding our personal past, present, and future. As such, temporal perspectives influence our current and future behaviors (Lennings, 2000). Although a multidimensional construct comprised of temporal frames (i.e., past, present, future), depth or length of extension (e.g., near past, far future), emotional valence (e.g., positive, neutral, negative), structuration or degree of continuity across temporal frames, and the vividness and realism of one's views (Kazakina, 2015; Nuttin & Lens, 1985), most researchers have considered only one or two of the dimensions of temporal perspectives, with the bulk of research focusing on future time perspectives (Boniwell & Zimbardo, 2004).

The perception of future time as either expansive or limited influences most behaviors and psychological processes in adulthood (Carstensen, 2006). Goal selection is inherently a future-focused behavior that is influenced by our temporal perspective (Baltes & Baltes, 1990; Deci & Ryan, 2000). Relative to a narrow future horizon, individuals with an expansive future time perspective generally have more goals (Brothers, Chui, & Diehl, 2014), more motivation to work on goals (Lens, Paixao, Herrera, & Grobler, 2012), anticipate having energy to complete tasks (Stolarski, Matthews, Postek, Zimbardo, & Bitner, 2014), and report more frequent engagement in health-promoting behaviors (Gellert, Ziegelmann, Lippke, & Schwarzer, 2012; Henson, Carey, Carey, & Maisto, 2006; Stahl & Patrick, 2012). Although there is some literature to suggest that future goals are directly shaped by our present feelings and behaviors (Lewin, 1939; Nuttin & Lens, 1985),

whether past and the present influence goal selection remains relatively unexamined.

1.1. Time and health-related goals

Much of the current literature on the role of temporal perspective and health behaviors focuses on discrete health behaviors among college students or among community-dwelling younger and middle-aged adults. Kornadt and Rothermund (2014) discussed the implications of focusing on domain-general versus domain-specific behaviors, including the need to isolate underlying motivations for behavior change within domains. Of course, extending investigations beyond midlife is also an important endeavor, as differences in goals and in the motivations for pursuing those goals may vary across age, temporal perspective, or both (Rossi & Isaacowitz, 2006).

Using data from a large group of undergraduates (N = 1568), Henson et al. (2006) found that students with an expansive future perspective were less likely to engage in high-risk health behaviors, such as substance abuse. Expansive future time perspective was also related to health-promotion behaviors, including more exercise, more frequent condom use, and among women, use of birth control.

Similar results are found in non-college samples of adults, as well. Across several different nations and age groups, an expansive future time perspective predicts successful smoking cessation 8 years later (Hall, Fong, & Meng, 2014). Future orientation has been linked to health promotion behaviors in community-dwelling adults, as well. Among younger and middle-aged adults, Stahl and Patrick (2012) reported that age effects on physical activity were partially mediated by future perspective. Gellert et al. (2012) also reported associations with future

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perspective and physical activity goals to predict physical activity 6 months after baseline.

Although there is evidence that future perspective influences both risky health behaviors and health promotion behaviors, few studies have simultaneously examined other temporal frames. An exception is a recent study reported by Griva, Tseferidi, and Anagnostopoulos (2015). Using data from more than 400 adults (ages 18–56 years), they reported a link between future orientation and physical exercise, but they also found roles for past and present orientations as related to body mass index (BMI). Thus, a growing literature supports the relations among various temporal frames and specific health behaviors, in isolation. Whether and in what ways past, present, and future frames influence risky health behaviors and health promotion behaviors among a wide age range of adults have not been examined.

1.2. Current study

The current study focuses on goals to improve physical health because they are relatively under-studied in the area of temporal perspective and because they have important implications for community-based health promotion efforts (Fisher et al., 2011). Based on the work by Rossi and Isaacowitz (2006) and Kornadt and Rothermund (2014), we anticipated that younger adults would have fewer health change goals relative to their more senior counterparts. However, there is little evidence to suggest whether age differences would be evident in the type of health goals endorsed. We also anticipated significant associations between age and temporal perspectives (Carstensen, Isaacowitz, & Charles, 1999; Spreng & Levine, 2006). The main focus, however, was to examine whether temporal frames governed the association between the number health goals across age groups. Although Fingerman and Perlmutter (2001) suggested that time might operate differently across age groups, research examining the effects of multiple temporal perspectives is rare.

2. Method

2.1. Power analysis

A formal power analysis, implemented in G*Power (Erdfeld, Faul, & Buchner, 1996), suggested that data from 253 adults would provide sufficient power (power > 0.95) to detect medium-sized effects ($f^2 = 0.15$) in a 7-variable regression equation ($p < 0.05$).

2.2. Participants

Participants were drawn from community-dwelling adults who responded to print and electronic ads to complete an online prescreen for a health coaching study. The prescreen consisted of a 25-page online survey. Participants completed the survey in about 38 min ($SD = 31.4$, range 25–60 min). Although the prescreen for the larger study included a variety of measures (e.g., physical and mental health, decision making, technology use, and social exchanges), only those related to the current study are discussed in this report. All participants were offered $5 for completing the survey.

A total of 285 adults started the instrument, with 253 completing the temporal perspective and demographic items. Respondents consisted of 61 men (24.1%) and 192 women (75.9%). The adults ranged in age from 18 to 87 years, with 76 younger adults (M age = 23.89, range 18–29 years), 96 early middle-aged adults (M age = 38.91, range 30–49) and 81 late middle-age and older adults (M age = 58.73, range 50–87).

2.3. Measures

2.3.1. Number of goals

Drawn from the broader research on behavioral change and positive psychology, adults were queried regarding nine health behavioral

change goals. Participants endorsed a mean of 3.31 ($SD = 1.93$) of the nine goals, including to: lose weight (59.3%), gain weight (3.2%), increase exercise (65.6%), reduce tobacco use (9.1%), reduce alcohol use (14.6%), walk more (62.1%), eat healthier foods (71.5%), sleep more (40.3%), and sleep less (5.5%). Although count data are often not appropriate for use as outcomes in regression models, the current measure was normally distributed, with skew and kurtosis in acceptable ranges. Moreover, there were few scores of zero (11%).

2.3.2. Time perspective

The Time Attitudes Scale (TAS; Mello & Worrell, 2012; Mello et al., 2016; Worrell, Mello, & Buhl, 2011) was used to index temporal perspectives. The TAS included 30 items, each scored on a 5-point Likert-type scale. Six subscales are rendered, with higher scores representing higher levels of the underlying construct. The six subscales are: positive past (e.g., I have very happy memories of my childhood), negative past (e.g., My past is a time in my life that I would like to forget), positive present (e.g., I am happy with my current life), negative present (e.g., I am not satisfied with my life right now), positive future (e.g., I look forward to my future), and negative future (e.g., I doubt I will make something of myself).

3. Results

3.1. Preliminary analyses

Completion rates for individual time perspective items were high, with fewer than 1% of the items missing. Individual item mean imputation for 13 missing data points was used. Indices for the six valenced temporal frames were computed, and were similar to those reported by Mello et al. (2016), for: positive past ($\alpha = 0.91$); negative past ($\alpha = 0.91$); positive present ($\alpha = 0.94$); negative present ($\alpha = 0.89$); positive future ($\alpha = 0.93$); and negative future ($\alpha = 0.84$).

Because women were over-represented in our sample, we examined the relation of gender with the model constructs using partial correlations and t-tests. In no instance did gender relate significantly with temporal frame, valence, or health goals. Thus, for the sake of parsimony, we did not include gender in our model testing. Based on inspection of the first four moments of the distributions, the data met the underlying assumptions of the General Linear Model (GLM). As shown in Table 1, younger adults had a significantly lower positive past score than early middle-aged adults. No other age group differences were observed in the constructs of interest. Similarly, based on the correlation coefficients shown in Table 2, no significant associations were observed between age and the number of health goals ($r(253) = 0.10$, $p = 0.11$). Correlations between age and the valenced temporal frames were small, and with the exception of negative past and age ($r(253) = -0.15$, $p = 0.02$), they failed to reach significance. Despite these low bivariate associations, age was retained in the model because whether age exerted indirect effects on health change goals via the different valenced temporal frames was of interest.

3.2. Model testing

The well-known Baron and Kenny (1986) approach to mediation requires a significant regression path between the predictor variable (X) and the outcome (Y). If this relation is not evident, the analysis stops, precluding an examination of indirect effects of the predictor on the outcome through its association with the proposed mediator. An additional limitation to this approach lies in the inflated statistical error due to the use of multiple tests (Fritz & MacKinnon, 2007). An alternative approach is to examine conditional and indirect effects, whereby the predictor which fails to exert direct effects on an outcome might exert influence via its association with the mediator. In order to examine both direct effects of age on health goals and the indirect effects of