

Do Control Beliefs Mediate the Relationship Between Social Exchanges and Health? Examining a Mediation Model across the Lifespan

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Social exchanges and control beliefs are each associated with health yet rarely considered together. This research examined whether control beliefs are a plausible mechanism linking domain specific social exchanges (both supportive and unsupportive) to health. The sample consisted of 2,348 adults drawn from the Midlife in the United States Survey (MIDUS). All participants were married or in a cohabitating relationship; they were primarily White and educated. Structural equation modeling was used to test multiple mediational models. When the model was tested for the entire sample, control beliefs were found to serve as a mediator, significantly mediating the relationship between social exchanges and subjective well-being, but not physical health. When the model was tested for separate age groups, evidence for mediation was found for the young (24-39) and middle-aged (40-59) groups, but not the older (60-75) group. Results suggest a mediational model in young and middle adulthood is plausible, but that social exchanges may serve different functions and have different associations with control beliefs across the lifespan. Thus, social network theory should consider adopting a lifespan perspective sensitive to the developmental tasks and goals at varying ages.

Key Words: Social Support, control beliefs, health, lifespan

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The examination of the relationship between psychosocial variables and health is an important area of study. Social exchanges (both supportive and unsupportive) and control beliefs are two psychosocial variables that have often been linked to health; the evidence that these variables are related to health outcomes is robust (e.g., House, Landis, & Umberson, 1988; Östberg & Lennartsson, 2007; Rodin, Timko, & Harris, 1985).

There are many parallels between the areas of social exchanges and health and control beliefs and health. For example, studies indicate that those with greater levels of social support or a strong sense of control have better physical health and less severe illnesses or health problems (Berkman & Syme, 1979; Cohen & Wills, 1985; Rodin et al., 1985). Furthermore, both constructs have been related to psychological outcomes, like decreased levels of depression, greater overall mental health, and increased optimism (Antonucci & Akiyama, 1987; Bandura, 1997; Lachman, 1986; Takizawa et al., 2006). Other work, which has focused attention on the detrimental aspect of social exchanges, has found evidence that social strain or social burden is negatively related to health outcomes (e.g., DeLongis, Capreol, Holtzman, O'Brien & Campbell, 2004; Rook, 1992; Schuster, Kessler, & Aseltine, 1990). Although much of the research that links these psychosocial factors to health is cross-sectional, a number of longitudinal and experimental studies suggest that these variables lead to beneficial outcomes in the case of supportive exchanges and control beliefs, and detrimental outcomes in the case of strained, or unsupportive, social exchanges (e.g., Eaton, 1978; Langer & Rodin, 1976; Seeman et al., 1995).

Social exchanges and control beliefs are themselves related. For example, those high in control beliefs report more social interactions and a more positive perception of the environment than those with low control beliefs, and those with an internal locus of control derive greater benefits from social support than those with an external locus of control (e.g., Lemke & Moos, 1981).

While social exchanges and control beliefs are related, rarely are these two constructs considered together when predicting health (e.g., Lachman, Ziff, & Spiro, 1994; Ferreira & Sherman, 2007). Research that examines models including these variables may assist in understanding the mechanisms that link social exchanges and control beliefs to health-related outcomes. While a number of different models could be postulated, one model postulates that social exchanges affect health through their influence on control beliefs. Such a mediational model has been suggested by a number of researchers. For example, some posit that the perception of control comes from having successfully coped with stressors (Pierce, Sarason, & Sarason, 1996; Sarason, Sarason, & Pierce, 1995). They conclude that perceiving the world as a supportive place has an effect on feelings of control; if one thinks that caring and encouraging people are available and will be helpful if needed, they will be more likely to take risks that (when successful) lead to feelings of personal efficacy, which in turn affect well-being.

Deci and Ryan, in their self-determination theory (1985, 1991, 2000), propose a similar framework. In their model, supportive behaviors are linked to outcomes by providing information about basic human needs (i.e., autonomy, competence, and relatedness). Thus, they hypothesize that personal control is the mechanism that links social support to positive outcomes. In such a model, social strain would reduce control (i.e., competence) and lead to negative outcomes. Thus, given the wide variety of

constructs related to health, it may that these factors are simply different facets or manifestations of control beliefs; control is a parsimonious, integrating concept.

Three published studies have examined and found support for a mediational model (Cutrona & Troutman, 1986; Major et al., 1990; Martire, Stephens, & Townsend, 1998). All of these studies incorporated domain-specific control measures in highly exclusive samples examining women shortly after giving birth and parenting efficacy (Cutrona & Troutman), post-abortion adjustment (Major et al.), and women in midlife occupying multiple roles (Martire et al.). The present study examines a large sample, aged 24 – 75, using a general measure of control.

The present paper expands on existing knowledge by using structural equation modeling techniques to test the plausibility of a model hypothesizing that the relationship between social exchanges and health is mediated by control beliefs; that is, are control beliefs one mechanism through which social exchanges might affect health? This model was examined for the entire sample as well as for young, middle-aged, and older adults, separately. The rationale for examining different age groups stemmed from research in both the social network and control literature suggesting these constructs may not only have different meaning, but operate differently at different points in the lifespan (e.g., Carstensen, 1991; Gupta & Korte, 1994; Heckhausen & Schulz, 1995; Lachman & Weaver, 1998; Levitt, Weber, & Guacci, 1993; Okun & Keith, 1998). The study included measures of both positive and negative social exchanges (support and strain), based on growing evidence that negative social exchanges are powerfully and consistently related to well-being. To help develop a more explicit theory of social networks, relationship-specific measures of social exchanges in the domains of partner, family, and friends were also included. Furthermore, a two-factor model of health was investigated that included both a subjective well-being (SWB) and a physical health aspect.

Method

Sample

The sample consisted of 3,485 non-institutionalized adult participants from the Midlife in the United States Survey (MIDUS), conducted by the John D. and Catherine T. MacArthur Foundation Research Network on Successful Midlife Development. This national probability sample was recruited using random digit dialing. Respondents were interviewed for 20-30 min by telephone (70% response rate) and also completed two self-administered questionnaires that they received in the mail (87% response rate). The age of the participants ranged from 25 to 75 ($M = 47.8$, $SD = 13.1$), and 50.6% were female. Those who reported they were married or in a cohabiting relationship served as the subsample for this study. Non-partnered individuals were not included because they would not have responded to questions pertaining to the partner domain, which was of interest in this study. This subsample ($N = 2,348$; M age = 46.3, $SD = 12.9$) closely resembled the larger sample; they were primarily White (90%) and educated (59% had at least some college or a higher degree). Compared to the Current Populations Survey data, this sample was positively biased in terms of social class. The sample underrepresented minorities and those with low income and education; this was likely due to the methods used (i.e., telephone surveys and lengthy self-report questionnaires).

Health Measures

A two-factor model of health was developed that included three indicators for each factor: poor health (chronic health problems, functional limitations, and number of medications), and subjective well-being (positive affect, negative affect, and life satisfaction). This model was developed in an earlier study (Lyons, 1999) and used by others (e.g., Russell, 1998; Wallston, 1998). Individual indicators are described in detail below.

Chronic health problems. Chronic health problems were assessed via a summary score (ranging from 0-28) based on the number of health problems respondents endorsed. Respondents stated whether or not they had experienced or been treated for 28 health problems in the past 12 months. Examples included asthma, arthritis, high blood pressure or hypertension, migraine headaches, heart attack or heart problem, and cancer.

Functional limitations. This scale was adapted from the physical health subscale of the Sort Form 36 (SF-36; Ware & Sherbourne, 1992). Nine questions asked respondents how much their health limited them in performing various activities, such as carrying groceries, walking several blocks, and doing vigorous activity. Items were rated on a scale from 1 (*a lot*) to 4 (*not at all*) and were recoded so that 0 (*not at all*) and 3 (*a lot*). Thus, 0 indicated an absence of functional limitations. Scores were computed by finding the mean of available items and multiplying by the number of items (9). Thus, scores could range from 0 to 27. Cronbach's alpha for this scale in the current study was .93.

Number of medications. Participants were asked whether or not they had taken any prescription medication over the past 30 days, for any of the following conditions: hypertension, diabetes, high cholesterol, a heart condition, lung problems, ulcers, arthritis, or headaches. Scores could range from 0 to 8.

Positive mood. Positive mood was assessed by a mean score derived by a 6-item scale that respondents answered by reflecting over the past 30 days. Questions were answered on a 5-point scale ranging from 1 (*all of the time*) to 5 (*none of the time*). Scores were recoded so that a higher score indicated more positive mood. The items read: "During the past 30 days, how much of the time did you feel (a) cheerful, (b) in good spirits, (c) extremely happy, (d) calm and peaceful, (e) satisfied, and (f) full of life?" Cronbach's alpha for this scale was .91 and mean scores could range from 1 to 6.

Negative mood. Negative mood was assessed by a mean score derived using a 6-item scale. Respondents indicated on a 5-point scale, ranging from 1 (*all of the time*) to 5 (*none of the time*), the extent to which they had experienced each of the items over the past 30 days. The scale was recoded so that a higher score indicated more negative mood. The items read: "During the past 30 days, how much of the time did you feel (a) so sad nothing could cheer you up, (b) nervous, (c) restless or fidgety, (d) hopeless, (e) that everything was an effort, and (f) worthless?" Cronbach's alpha for this scale was .86 and mean scores could range from 1 to 6.

Life satisfaction. General life satisfaction was measured with the following question: "Using a scale from 0 to 10, where 0 means *the worst possible life overall* and 10 means *the best possible life overall*, how would you rate your life these days?"

Control

The items used in this study were developed based on the assumption that control involves two-factors: personal mastery and perceived constraints (Lachman & Weaver,

1998; Pearlin & Schooler, 1978). This conception of control includes aspects of both competence and contingency, as described by Skinner (1996). A strong sense of control, as measured by these items, would imply that one views the self as competent and efficacious, and the world as responsive. The proposed two-factor model of control was developed in an earlier study (Lyons, 1999).

Personal mastery. Personal mastery assesses one's sense of efficacy and was measured with a mean score from a 4-item scale. Items were rated on a scale ranging from 1 (*strongly agree*) to 7 (*strongly disagree*); items were recoded so that a higher score indicated more mastery. A sample item reads, "I can do just about anything I set my mind to." Cronbach's alpha for this scale was .69 and mean scores could range from 1 to 7.

Perceived constraints. Perceived constraints refer to the extent to which one believes that there are other factors that prohibit goal attainment, and for this study was assessed by a mean score derived from an 8-item scale. Items were rated on a scale ranging from 1 (*strongly agree*) to 7 (*strongly disagree*); items were recoded so that a higher score indicated more constraints. A sample item reads, "There are many things that interfere with what I want to do." Cronbach's alpha for this scale was .86 and mean scores could range from 1 to 8.

Social Support and Social Strain Measures

Social support and social strain were examined using mean scale scores by relationship type: family members (not including one's spouse or partner), friends, and spouse/partner. All items were answered on 4-point Likert-type scale. Support items were rated from 1 (*a lot*) to 4 (*not at all*), while strain items were rated from 1 (*often*) to 4 (*never*). Items were recoded so that higher scores indicated either higher support or strain. Supportive network exchanges were measured through four items that were parallel for spouse/partner, family members, and friends: (a) How much do they (family members, not including your spouse or partner; friends; spouse/partner) understand the way you feel about things? (b) How much do they really care about you? (c) How much can you rely on them for help if you have a serious problem? and (d) How much can you open up to them if you need to talk about your worries? Strained network exchanges were also measured through four parallel items that read (a) How often do they criticize you? (b) How often do they make too many demands on you? (c) How often do they let you down when you are counting on them? and (d) How often do they get on your nerves? Similar items were used in a study conducted by Schuster et al. (1990).

A modified six-factor model of social exchanges was developed that included method factors as latent variables for the parallel items (Lyons, 1999). Cronbach's alpha for each subscale was as follows: family support (.82), family strain (.80), friend support (.88), friend strain (.79), partner support (.86), and partner strain (.81). For all scales, mean scores could range from 1 to 4.

Demographic Variables

Age, gender, and education were entered as correlated exogenous variables when estimating models for the entire sample. When conducting multi-group analyses for age, gender and education were entered as correlated exogenous variables.

Analysis Strategy

Preliminary Model Development

The health, control, and social exchange measurement models were developed and refined using a confirmatory factor analysis framework with structural equation modeling techniques. In previous research with these models, measurement equivalence was supported across each age group (Lyons, 1999). Thus, for the multi-group analyses reported here, the measurement models were estimated for the first group and factor loadings were then constrained for the remaining groups.

Testing Mediation Models

The testing of a mediational model was conducted using the following steps. First, an analysis was conducted that specified paths from social exchanges to health. Next, an analysis was conducted that specified paths from social exchanges to control, the proposed mediator. Using these models, relevant significant pathways were tested in a final mediational model (see Kenny, Kashy & Bolger, 1998). For example, if partner support predicted both SWB and control, a direct pathway from partner support and SWB, as well as an indirect pathway from partner support to SWB through control was specified. Mediation was observed when either a previously significant direct pathway became non-significant or was significantly reduced after the indirect paths were estimated (Kenny et al.).

Results

Descriptive Statistics

Means and standard deviations for the factors (computed by creating mean scores of items that comprised a factor) and variables used in this study are presented by age group in Table 1 (for analyses reporting differences on these variables by sample subgroups, refer to Walen & Lachman, 2000). Correlations between variables are presented in Table 2.

Reporting Mediation Models

For all figures, parameters reported are LISREL estimates; they are equivalent to unstandardized regression coefficients obtained in a regression equation. Standard errors are reported in parentheses. Estimates are presented for significant paths only and dotted lines indicate mediation. That is, a dotted line represents a pathway that either became non significant or was significantly reduced with the addition of control into the model (note that estimates appear with a dotted line only if the relationship was still significant, even after a statistically significant reduction in strength). To assist in readability, the correlations among the support and strain items are not presented visually.

Testing a Mediation Model: Entire Sample

When testing the entire sample, age, education, and gender were entered as correlated exogenous variables. Based on the results of the first two steps involved in testing mediational models, the model presented in Figure 1 was tested ($\chi^2 [540] = 3379.06$, GFI = .91, CFI = .90, NNFI = .89, RMSEA = .05)¹. The model accounted for 20% of the

¹ Evaluating model fit is based on a number of criteria. For the GFI, CFI, and NNFI, numbers at or above approximately .90 are indicative of a good fit. For RMSEA, numbers below .08 are considered reasonable, with those at or below .05 considered good to excellent (Hoyle, 1995).

variance in control, 56% of the variance in SWB, and 14% of the variance in poor health. As suggested in Kenny et al. (1998), possible mediational paths were tested statistically. As evidenced by the dotted lines, there were five cases of mediation. Ninety-two percent of the total effect of friend support and 47% of the total effect of partner strain on SWB was mediated by control.

Table 1
Means and Standard Deviations for Factors and Variables by Age Group

Factor/Variable	Mean (SD)	Mean (SD)	Mean (SD)	Scale Range
Chronic problems	1.74 (.206)	2.33 (.241)	3.25 (.273)	0-28
Functional limitations	2.46 (.473)	4.06 (.580)	6.35 (.682)	0-27
# of Medications	.26 (.58)	.54 (.92)	.98 (1.10)	0-8
Positive mood	3.37 (.72)	3.37 (.73)	3.55 (.62)	1-6
Negative mood	1.58 (.59)	1.53 (.63)	1.39 (.48)	1-6
Life satisfaction	7.71 (1.44)	7.85 (1.48)	8.25 (1.40)	0-10
Personal mastery	5.96 (.85)	5.82 (1.05)	5.76 (1.01)	1-7
Perceived constraints	2.56 (1.08)	2.64 (1.27)	2.77 (1.34)	1-8
Family support	3.40 (.63)	3.43 (.59)	3.61 (.47)	1-4
Family strain	2.17 (.66)	2.11 (.59)	1.90 (.50)	1-4
Friend support	3.21 (.67)	3.19 (.68)	3.19 (.61)	1-4
Friend strain	1.94 (.51)	1.93 (.49)	1.81 (.45)	1-4
Partner support	3.58 (.55)	3.55 (.58)	3.63 (.56)	1-4
Partner strain	2.17 (.62)	2.18 (.64)	2.10 (.61)	1-4

Note. *Ns* are as follows: young = 606; middle = 864; older = 327

Table 2
Correlations Between Factors and Variables

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
1. Age	--																
2. Sex	-.06	--															
3. Education	-.05	-.08	--														
4. Fam Sup	.13	.06	.04	--													
5. Fam Strain	-.16	.15	-.04	-.39	--												
6. Fri Sup	.01	.16	.07	.38	-.14	--											
7. Fri Strain	-.10	-.01	.02	-.12	.44	-.08	--										
8. Part Sup	.03	-.15	.02	.26	-.15	.19	-.09	--									
9. Part Strain	-.05	.13	-.01	-.19	.31	-.14	.28	-.64	--								
10. Mastery	-.09	-.12	.03	.16	-.10	.22	-.03	.24	-.19	--							
11. Constraint	.06	.11	-.19	-.23	.20	-.25	.14	-.29	.30	-.47	--						
12. Func Lim	.24	.12	-.16	-.07	.09	-.06	.06	-.09	.12	-.15	.27	--					
13. Chronic	.23	.11	-.15	-.05	.09	-.05	.06	-.11	.13	-.16	.27	.44	--				
14. # of Meds	.31	.05	-.09	.02	.03	.02	.04	-.02	.07	-.06	.21	.42	.53	--			
15. Pos Mood	.09	-.06	.05	.25	-.22	.22	-.13	.31	-.31	.30	-.45	-.21	-.24	-.14	--		
16. Neg Mood	-.13	.11	-.12	-.23	.24	-.15	.15	-.26	.27	-.24	.49	.28	.33	.19	-.63	--	
17. Life Sat	.15	-.00	.06	.32	-.22	.23	-.17	.44	-.41	.28	-.42	-.19	-.16	-.07	.50	-.44	--

Note. Fam Sup = family support, Fam Strain = family strain, Fri Sup = friend support, Fri Strain = friend strain, Part Sup = partner support, Part Strain = partner strain, Fun Lim = functional limitations, Chronic = chronic problems, # of Meds = number of medications, Pos Mood = positive mood, Neg Mood = negative mood, Life Sat = life satisfaction. Correlations > .04 are significant at $p < .05$; correlations > .06 are significant at $p < .01$. $N = 1,912$

Sixty percent of the total effect of partner strain on poor health was mediated by control. Additionally, control partially mediated the relationship between family strain and partner support and SWB. For these cases, 39% of the total effect of family strain and 28% of the total effect of partner support were mediated by control. Thus, there was evidence that a mediational relationship may exist between social exchanges and well-being.

Testing a Mediational Model: Age Groups

The previous model presented a general framework for modeling the relationships between the variables investigated; however, the model controlled for age. In this section, Steps 1 through 3 were conducted using multi-sample analyses, allowing for differences between age groups to be revealed.

The test of a mediational model was estimated for three age groups: young (24-39), middle (40-59), and older (60-75). In this model, because the pathways were estimated separately for each age group, both gender and education were included as correlated exogenous variables. Based on the results from Steps 1 and 2, a final analysis was conducted to test the mediational hypothesis; results are presented in Figures 2 - 4 ($\chi^2 [1574] = 5151.12$, GFI = .84, CFI = .89, NNFI = .87, RMSEA = .05). For younger adults, the model accounted for 27% of the variance in control, 60% of the variance in SWB, and 17% of the variance in poor health. For middle-aged adults, the model accounted for 24% of the variance in control, 58% of the variance in SWB, and 17% of the variance in poor health. Finally, for older adults, the model accounted for 0% of the variance in control, 49% of the variance in SWB, and 16% of the variance in poor health.

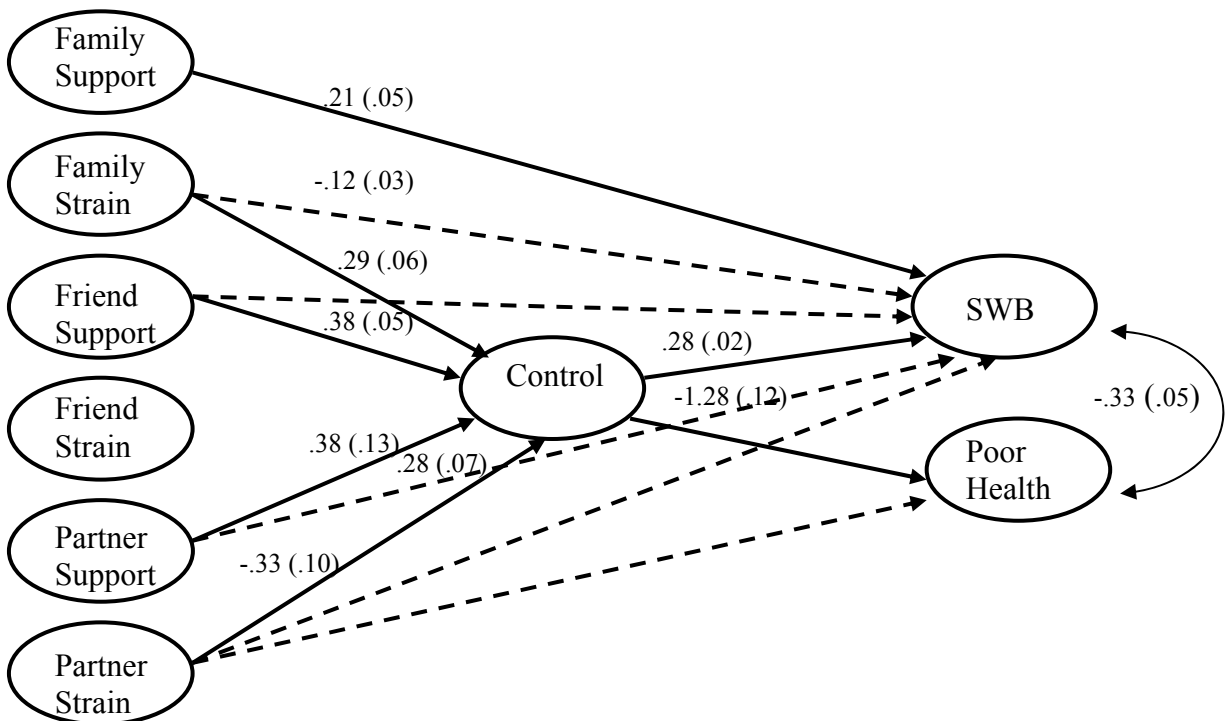


Figure 1. Results of Testing a Mediational Model: Entire Sample

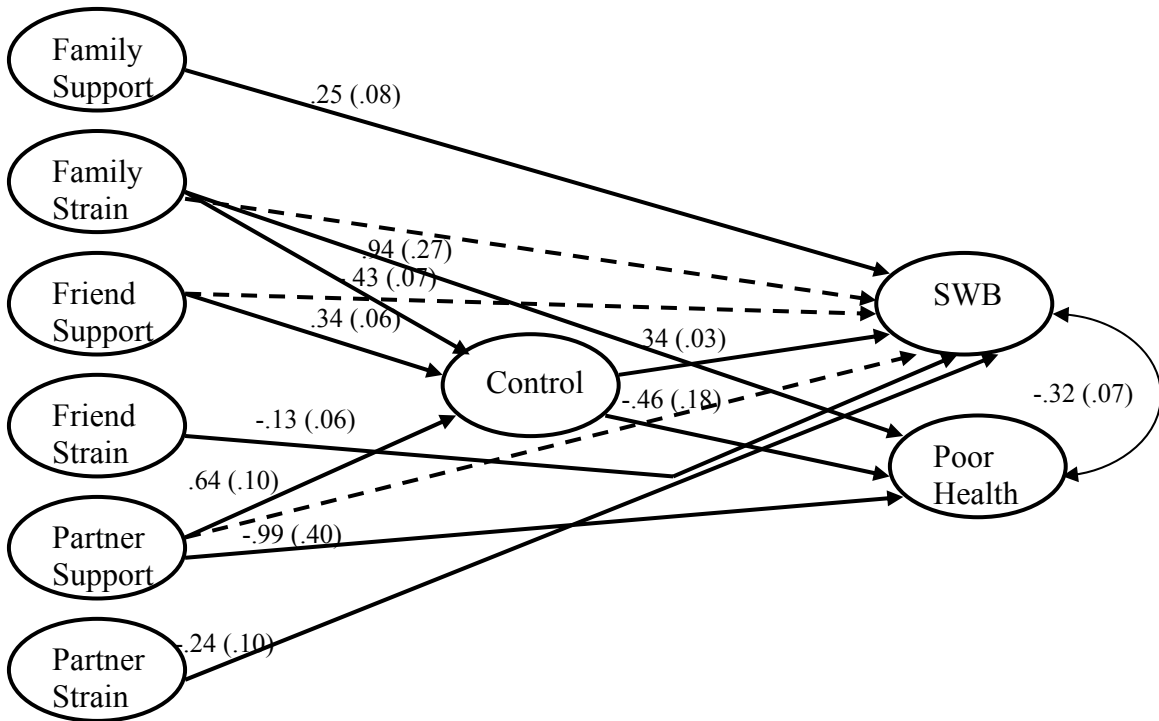


Figure 2. Results of Testing a Mediation Model: Young Adults (24-39 years)

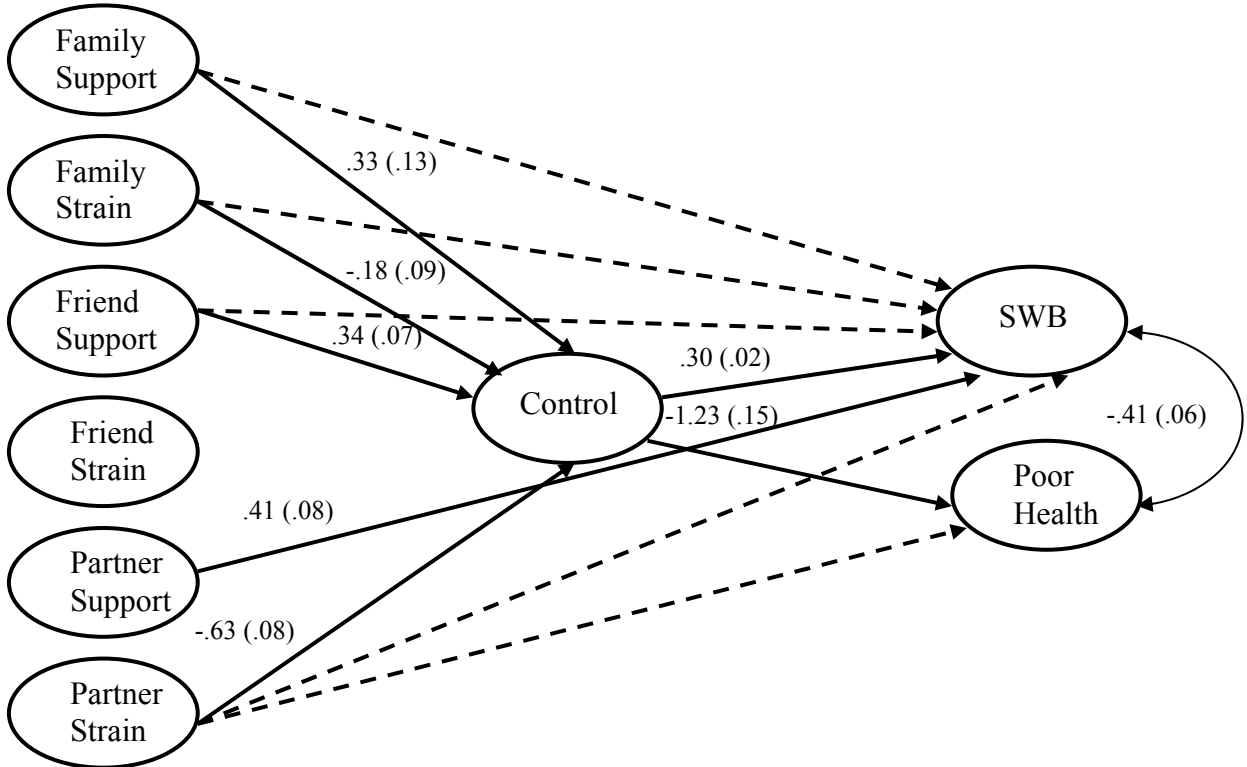


Figure 3. Results of Testing a Mediation Model: Middle-Aged Adults (40-59 years)

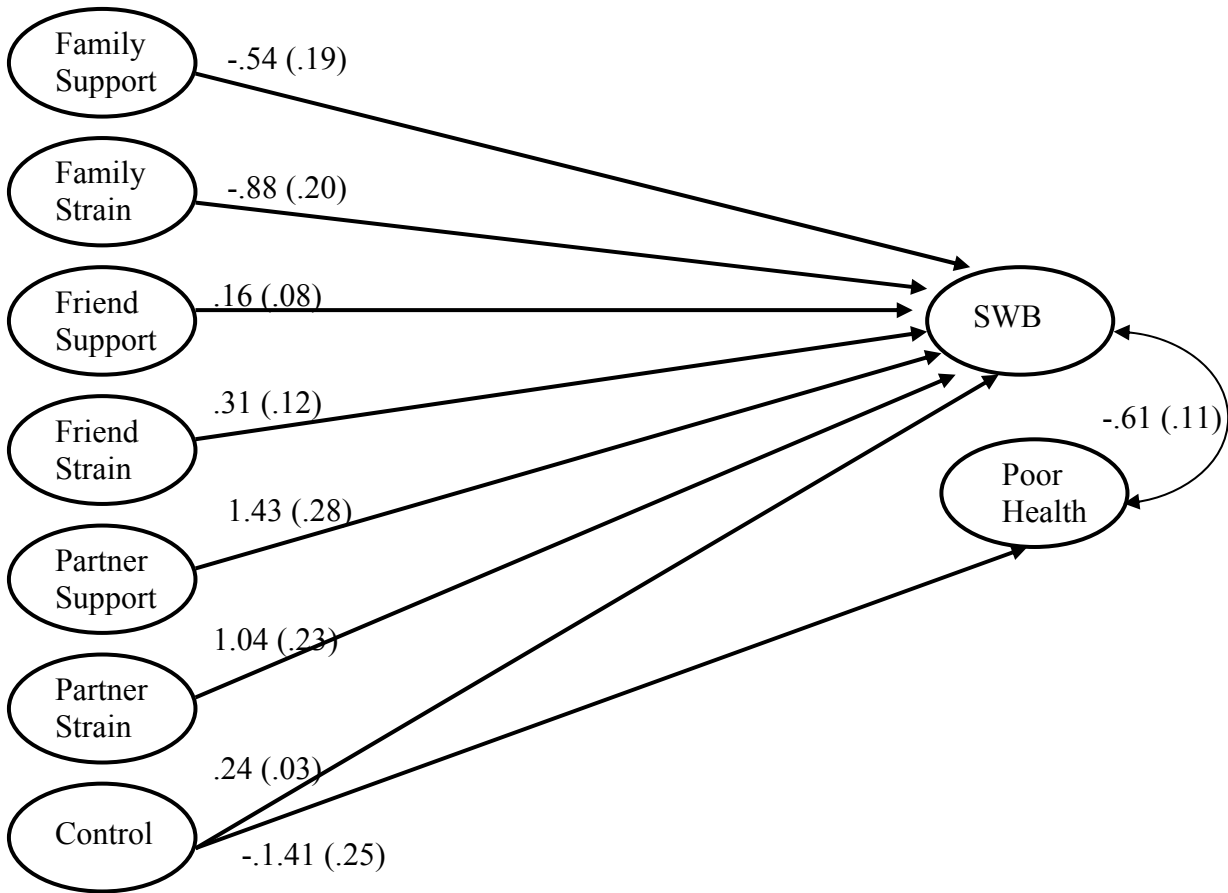


Figure 4. Results of Testing a Mediation Model: Older Adults (60-75 years)

The most striking outcome of these analyses was that control did not mediate the relationship between any of the social exchange variables and health for the older adults. That is, for this subsample none of the social exchange variables were significantly associated with control, suggesting that in later life social relationships and control beliefs are relatively independent dimensions of health. All social exchange variables were associated with SWB, while control beliefs were associated with both SWB and poor health.

Interestingly, there were some contradictory findings for this age group involving three of the social exchange variables: family support was negatively related to SWB, while both friend and partner strain were positively related to SWB. Suppression was suspected, as SWB and poor health were highly negatively correlated for this subsample. Suppression is often exhibited when a force and counterforce occur together and have counteractive effects, as was the case with SWB and poor health for the older adults in this sample (see Cohen & Cohen, 1983, for more details).

Post hoc analyses were conducted to examine whether it was possible that suppression was occurring among the variables. For these analyses, the sample was divided into "healthy" ($n = 145$) and "unhealthy" ($n = 103$) older adults². Then

² This was accomplished by first computing and standardizing a factor score for poor health by combining the three indicators: chronic problems, functional limitations, and

correlations among the social exchange variables, poor health, and SWB were examined. For the healthy older adults, none of the three social exchange variables in question (family support, friend strain, or partner strain) were significantly related to SWB. Further, SWB was not significantly correlated with poor health. However, for the unhealthy older adults, poor health and SWB were significantly negatively correlated ($r = -.40$), while the three social exchange variables were significantly related to SWB in the expected directions.

The correlations between SWB and each social exchange variable were family support (.38), friend strain (-.25), and partner strain (-.37). Thus, there was evidence of suppression; the social exchange variables were related to SWB, but only for older adults with poor health. Because of the strong, negative correlation between poor health and SWB, the post hoc analyses suggest that the true direction of the relationship among these social exchange variables and well-being may be suppressed by poor health. These analyses also suggest that health status is an important factor to note when investigating the relationship among social exchange variables and well-being in older adults.

Unlike the case for older adults, nearly every social relationship variable (with the exception of partner support and friend strain) was mediated by control for middle-aged adults (Figure 3). This implies that midlife may be a time when social exchanges take on a distinct role in confirming a basic feeling of competence. Being successful in social relationships may be crucial to one's feelings of general control. The percent of total effect for a social exchange variable on SWB that was mediated through control was 43% for family support, 45% for family strain, 77% for friend support, and 89% for partner strain. Partner support had only direct effects on SWB, suggesting that a supportive partner facilitates SWB directly and is not generally related one's perception of control. Partner strain was the only social exchange variable related to poor health, and 67% of this effect was mediated through control beliefs.

For the young adults, control mediated the relationship between the following social exchange variables and SWB (the percent of the total effect that was mediated is reported in parentheses): family strain (94%), friend support (100%), and partner support (61 %), while family support, friend strain, and partner strain had direct effects on SWB only (Figure 2). That is, for younger adults supportive networks of people you choose to be around (and who choose to be around you), along with a strained family, may contribute to control beliefs, which then may affect well-being. On the other hand, stressful relations with friends and partners, as well as a supportive family, are directly related to SWB. Finally, partner support was both directly and indirectly related to poor health; 24% of the effect that partner support had on poor health was mediated through control.

number of medications (note that higher scores indicate worse health). Then those with a score of less than 0 (the average for a standardized variable) were selected as "healthy" ($n = 534$), while those with scores greater than 1 were selected as "unhealthy" ($n = 146$). This criterion was chosen after an examination of frequencies.

Discussion

A mediational model was estimated, and overall there was support for the idea that social exchanges may be related to psychological health through its effect on control beliefs. This extends previous work (Cutrona & Troutman, 1986; Major et al., 1990; Martire et al., 1998) that has found evidence of such a relationship within select samples. In the present study the social exchanges variables were often related to control beliefs, but this varied by subsample (e.g., none of the social exchange variables were related to control for the older age group). Furthermore, support and strain were related more often to SWB than poor health.

Estimating Models for the Entire Sample

For the entire sample (controlling for age, gender, and education) control mediated the relationship between most of the social exchange variables and SWB. These findings would suggest that for the average married American adult, the perception of support from largely non-obligatory relationships and strain from obligatory ones have consequences for general feelings of control; these feelings in turn affect well-being. It also suggests that a supportive family may affect SWB may not directly affect control beliefs.

Finally, this general model suggests that in married adults, a stressful partner relationship is related to poor health. This may be because the chronic stresses of a distressing marital relationship actually result in poor health outcomes, or because people with ill health may be difficult to live and interact with. While these findings are interesting and give a very basic framework from which to theorize about the mediational model tested, controlling for age masked crucial differences in the structural relationships between the variables.

Estimating Models by Age Group

Distinct patterns of the structural relations emerged from the study by examining differing age groups. First and foremost, a mediational model did not hold for older adults. As suggested earlier, maintaining positive social networks may be a fundamental life task in early and mid-life, a basic need that has important consequences for general feelings of control. As Erikson (1964) theorized people in early (22-34) and middle (34-60) adulthood are faced with psychosocial crises relating to intimacy and generativity. Conversely, for the older adults, social relationships may have less impact on general feelings of control. Erikson viewed the psychosocial crisis in later life as one of integrity vs. despair. Thus, the focus may change to one of introspection where the goal is to come to terms with one's life. Erikson hypothesized that in later life one develops a more general relation to humanity, while at the same time developing a new level of caring and understanding with network members who are still living. Thus, social relationships may have less of an impact on feelings of efficacy, yet greatly affect well-being. It is more likely that, in this stage, health status largely determines feelings of control, and the present study did find a statistically significant relationship between control and poor health.

As suggested by Carstensen's socio-emotional selectivity theory (1991), relationships take on novel meanings in later life, serving to regulate emotions. These analyses suggested that family support, friend strain, and partner strain were related to SWB in the expected manner, but only for older adults with poor health status. However, such analyses are only suggestive. Past research has reported that older adults report less

strained and more supportive relationships, yet, how these are related to outcomes is not well understood and deserves further study.

Further evidence for the qualitative difference of relationships across the lifespan was found in the friend and partner domain for young and middle-aged adults. For young adults, friend strain was significantly negatively related to SWB; friend strain did not have any associations for middle-aged adults. Younger adults' networks typically consist of a larger proportion of friends than at any other age. Consequently, it is not surprising that not maintaining smooth relationships with this important aspect of a social network would have possible grave repercussions. Furthermore, in young adults, partner support was associated (negatively) with poor health, while in mid-life it was partner strain that was associated (positively) with poor health. It is reasonable to assume that, on average, the younger adults were partnered for a shorter time than were the middle-aged adults. Future research should examine whether early marriage may protect one from ill health, while, as the relationship matures, stress experienced with a partner may have especially negative effects on health.

Furthermore, the results imply that the support and strain of social relationships share variance with control in young and middle adulthood, perhaps functioning in part to develop and maintain feelings of efficacy, while they may serve a very different and unique function in later life. Overall, the results indicate the need for social network theory to be more explicit in describing the nature of relationships between social exchange variables and health by considering participant age. While the data is consistent with a mediational model overall and for young and middle-aged adults, other models (e.g., a buffering or interactive model) cannot be ruled out. For example, perhaps the directional relationship between social exchanges and control depends on whether one is facing a crisis. That is, high feelings of control may precede the harnessing of social support in times of need, which then affect outcomes.

Limitations

A number of limitations should be considered. First, the data were cross-sectional. A more explicit test of the mechanisms through which social exchanges operate would necessitate studying these variables over time in order to establish directionality. While cross-sectional studies are an efficient first step in exploring whether postulated relationships are consistent with the data. Collecting longitudinal data to investigate this question further would be worthwhile. Furthermore, longitudinal data are imperative in order to test the fit of alternative models.

Another limitation centered on the measures. The items used in this study were derived from a large survey that was not designed to test the specific hypotheses examined. Domain-specific social exchange measures were used, but the measure of control was general. While associations were found between relationship-specific support and strain and general control beliefs, it may be that support and strain operate more precisely in specific domains of control. For example, the theory of social control has recently been discussed in the social support literature (Rook, Thuras, & Lewis, 1990; Tucker & Anders, 2001). This theory, in part, suggests that interactions with network members may affect lifestyle choices (possibly by affecting control beliefs) that would be directly related to health and well-being. For example, a supportive spouse may offer to exercise with a sedentary mate, or concerned family members may criticize a smoker's behavior. These examples suggest that support and strain may affect specific types of

control beliefs that then relate to physical and psychological health. These are areas worth exploring if research is to identify specific and modifiable relationships. However, it is important to note that because the estimated models reasonably fit the data using general control beliefs, the most parsimonious approach to theory may be to concentrate on general mechanisms.

Although the sample was recruited via random digit dialing, it was primarily white and educated; generalization across social class and ethnicity should be made with caution. Additionally, because the partner relationship was a focus, single adults were excluded; the generalizability of these findings to single, divorced, or widowed persons is unknown.

Conclusion

The present results may aid in the development of a framework that accounts for age of participants as well as for the inclusion of specific types of social relationships, both the good and the bad aspects. In particular, this study offers evidence that social network theory should adopt a lifespan perspective, sensitive to developmental tasks and goals at varying ages.

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