Running Head: SOCIAL SUPPORT AND GOAL ADJUSTMENT

Satisfaction with Social Support in Older Adulthood:

The Influence of Social Support Changes and Goal Adjustment Capacities

Carsten Wrosch

Rebecca Rueggeberg

Concordia University, Montreal, Canada

Christiane Hoppmann

University of British Columbia, Vancouver, Canada

This is a word file of an unedited manuscript that has been accepted for publication in *Psychology and Aging*. The manuscript will undergo copyediting, typesetting, and review of the resulting proof before it is published in its final form. Please note that during the production process errors may be discovered which could affect the content.

This study was funded by grants from Canadian Institutes of Health Research to Carsten Wrosch. Completion of the manuscript was further supported by grants from Social Sciences and Humanities Research Council of Canada to Carsten Wrosch or Christiane Hoppmann and an award from Michael Smith Foundation for Health Research to Christiane Hoppmann. Correspondence concerning this article should be addressed to Carsten Wrosch, Concordia University, Department of Psychology and Centre for Research in Human Development, 7141 Sherbrooke Street West, Montreal, QC, H4B 1R6, Canada; e-mail: [carsten.wrosch@concordia.ca](mailto:carsten.wrosch@concordia.ca).

Please cite this article as: Wrosch, C., Rueggeberg, R., & Hoppmann, C. A. (2013). Satisfaction with social support in older adulthood: The influence of social support declines and goal adjustment capacities. *Psychology & Aging, 28*, 875-885.

Abstract

A six-year longitudinal study of 180 older adults (*M* age at baseline = 72.12 years) examined whether goal adjustment capacities (i.e., goal disengagement and goal reengagement) moderate the associations between transient and long-term longitudinal changes in social support partners with social support satisfaction. Results from hierarchical linear models show that high levels of, and increases in, goal disengagement capacities buffered the adverse effect of transient declines in perceptions of social support partners on satisfaction with social support. Moreover, increases in goal disengagement buffered the effect of long-term longitudinal declines in perceived social support on reduced levels of social support satisfaction. However, when participants perceived longitudinal increases in the number of social support partners, low levels of, and declines in, goal reengagement capacities were associated with high levels or increases in social support satisfaction. This pattern of findings suggests that goal disengagement can ameliorate social support satisfaction if older adults perceive a reduction in their social support network. Withdrawing from engagement in new goals, by contrast, may facilitate social support satisfaction if older adults perceive an increase in the number of social support partners.

Key words: social support; well-being; goal disengagement; goal reengagement; older adulthood.

Word count: 7877

Satisfaction with Social Support in Older Adulthood:

The Influence of Social Support Declines and Goal Adjustment Capacities

Research suggests that despite age-normative reductions in the size of social networks, older adults can maintain high levels of well-being (Carstensen, Mikels, & Mather, 2006; Lang & Carstensen, 1994). However, there is much variability in the trajectories of well-being (Roberts, Lee, & Roberts, 1991; Rothermund & Brandtstädter, 2003), which indicates that some older individuals encounter difficulty adjusting to age-related challenges and experience reduced well-being (Charles & Carstensen, 2010; Isaacowitz & Blanchard-Fields, 2012; Wrzus, Mueller, Wagner, Lindenberger, & Riediger, 2013). Further, such declines in well-being could derive, at least in part, from the possibility that a loss of social relationships compromises older adults’ perception of available social support partners (Charles, 2010; Seeman & Berkman, 1988). To shed light on this possibility, we examined in a six-year longitudinal study of older adults whether transient and long-term longitudinal changes in perceived social support networks are associated with social support satisfaction. In addition, we investigated whether certain self-regulation capacities could moderate this association. Based on research documenting that the ability to disengage from unattainable goals can protect well-being among older adults who confront age-related challenges (Dunne, Wrosch, & Miller, 2011), we hypothesized that goal disengagement capacities may ameliorate social support satisfaction if older adults perceive a reduction of their social support network.

*Management of Declines in Perceived Social Support in Older Adulthood*

Quantitative and qualitative aspects of social relationships serve the fundamental human need to belong and contribute to psychological well-being across the life span (Baumeister & Leary, 1995; Uchino, 2009). While people who feel socially connected report high levels of social satisfaction and general well-being, the loss of social partners can have the reverse effect (Barnett & Gotlib, 1988; Charles, 2010; Cohen & Wills, 1985; Murphy, 1982). Moreover, individuals’ social networks undergo significant changes across the adult life span. For example, older individuals have been shown to report fewer social contacts than their younger counterparts (Antonucci & Akiyama, 1987). Research also suggests that the number of peripheral as well as close social partners can become smaller in old age (Lang & Carstensen, 1994), and that such age-related declines in social networks could compromise older adults’ well-being (Pinquart & Sörensen, 2000).

Contrary to this possibility, a substantial body of research has documented that subjective well-being is relatively well maintained into later adulthood (for reviews, see Charles & Carstensen, 2007, 2010). To explain this paradox, prominent theories of successful aging postulate that with decreasing future time horizons, older adults protect their well-being in the context of age-related challenges by increasingly focusing on the pursuit of social goals that involve emotionally meaningful interactions (Carstensen, Isaacowitz, & Charles, 1999). In addition, older individuals tend to maintain smaller social networks that involve relatively more emotionally close social partners than their younger counterparts (Antonucci, 2001; Lang & Carstensen, 2002). These proactive changes in older adults’ social networks have been associated with socio-emotional benefits, including higher satisfaction and prevention of loneliness (Lang & Carstensen, 1994; Lang, Staudinger, & Carstensen, 1998).

Other longitudinal research, however, suggests that there is much variability in older adults’ subjective well-being, and that well-being can deteriorate in older adulthood (Roberts et al., 1991; Rothermund & Brandtstädter, 2003; Wallace & O’Hara, 1992). While such threats to older adults’ well-being can be related to a host of age-related problems (e.g., chronic disease or functional disability, Lenze et al., 2001), they may at least in part result from age-related changes in social networks. For example, it has been argued that effective socio-emotional functioning requires older individuals to draw on personal resources to prevent dissatisfaction or loneliness (Charles, 2010). However, age-related constraints in personal resources (e.g., functional limitations or poor vision) may render older adults’ engagement with important social partners difficult or impossible (Burmedi, Becker, Heyl, Wahl, & Himmelsbach, 2002; Newsom & Schulz, 1996). Further, external factors, such as the death, severe disability, or absence of close network partners may threaten the availability of established and meaningful relationships, and prevent an older person temporarily or permanently from engaging in social interactions that are key to well-being (Turvey, Carney, Arndt, Wallace, & Herzog, 1999). These scenarios illustrate that social network declines may not only be a function of older adults’ proactive motivational shift towards close and emotionally meaningful relationships, but that they can also occur involuntarily due to waning personal resources and factors that operate outside of a person’s control.

Importantly, reduced social networks are likely to compromise older adults’ perception of social support (Seeman & Berkman, 1988), which is an important contributor to well-being (Wills & Shinar, 2000).[[1]](#endnote-1) As a consequence, a perceived decline in available social support partners could threaten older adults’ satisfaction with their social support networks. A corollary of this argument is that age-related declines in the perception of social support partners may require older individuals to engage in self-regulation aimed at adjusting to social losses and the respective goals that are no longer feasible. This assumption is consistent with different theories of self-regulation, control, and coping, which point to the importance of goal adjustment processes for individuals’ well-being (Brandtstädter & Renner, 1990; Folkman, 1997; Heckhausen, Wrosch, & Schulz, 2010; Wrosch, Scheier, Carver, & Schulz, 2003a). These theories converge on the proposition that the experience of unattainable goals requires individuals to disengage from goals and to reengage in other new activities (Wrosch, 2011).

They further suggest that individuals differ in their general reactions to the experience of unattainable goals across different circumstances (Brandtstädter & Renner, 1990; Wrosch, Scheier, Miller, et al., 2003b).[[2]](#endnote-2) In particular, the model of goal adjustment capacities has documented reliable individual differences in people’s general tendencies to a) reduce effort and commitment from the pursuit of an unattainable goal (i.e., goal disengagement capacities), and b) identify, commit to, and pursue other new goals if unattainable goals are encountered (i.e., goal reengagement capacities, Wrosch et al., 2003b). These self-regulation capacities are supposed to foster well-being if individuals can no longer pursue valued activities. In such circumstances, goal disengagement is likely to prevent repeated failure experiences, and goal reengagement should facilitate purpose in life (Wrosch et al., 2003a).

Individuals’ capacities to adjust to unattainable goals also show significant changes across the human life span. Longitudinal research has shown that goal adjustment capacities increase in adolescence (Wrosch & Miller, 2009), and age-comparative studies suggest that these improvements extend into older adulthood (Brandtstädter & Renner, 1990; Heckhausen, 1997; Wrosch et al., 2003b). Age differences in goal adjustment capacities have further been implicated in the maintenance of older adults’ well-being and should become paramount if individuals are confronted with managing an increasing number of age-related constraints on the pursuit of their personal goals (Brandtstädter & Renner, 1990; Heckhausen et al., 2010).

Consistent with these assumptions, research on goal adjustment capacities has documented in a variety of populations, including older adults, that the capacity to disengage from unattainable goals provides widespread benefits across a broad spectrum of psychological and physical health indices (e.g., reduced negative mood, better biological functioning, or improved physical health; Dunne et al., 2011; Miller & Wrosch, 2007; Wrosch, Amir, & Miller, 2011; Wrosch & Miller, 2009; Wrosch, et al., 2003b). Moreover, goal reengagement capacities have been associated with positive emotions and purpose in life (Wrosch et al., 2003b, Wrosch & Sabiston, 2013). However, recent studies also suggest that goal reengagement does not always predict adaptive outcomes (Dunne et al., 2011) and, at times, can be associated with negative psychological states (Wrosch et al., 2011). Such adverse effects of goal reengagement could occur if individuals become stretched too thin and the pursuit of new goals undermines their ability to cope with critical life challenges (Wrosch, Bauer, & Scheier, 2005; Wrosch et al., 2011).

Although there is no research examining the role of goal adjustment in the association between older adults’ perceptions of social support networks and their satisfaction with social support, the widespread benefits documented above make it possible that goal disengagement capacities in particular could play an important role in this association. In the context of declining personal resources, the capacity to disengage from unattainable goals may help older individuals to accept that certain social support partners are unavailable, which may foster psychological and behavioral disengagement from unfeasible social goals. Goal disengagement may thus facilitate psychological adjustment to the loss of desired social support partners by making them less important for a person’s life. By contrast, older adults who perceive a decline of their social support network, but who are unable to disengage from unattainable goals, could have difficulty to detach their thoughts from relevant social losses, encounter repeated problems with pursuing social goals, and experience an associated reduction in their social support satisfaction.

Given that the literature on goal reengagement is more mixed, we feel less confident to make firm predictions about the role of goal reengagement capacities (Wrosch et al., 2003, 2005, 2011). For example, although it may be difficult to replace certain close ties in old age (e.g., after the loss of a spouse), it may still benefit older adults who have lost a long-term partner to invest in new and supportive relationships (Antonucci, Lansford, & Akiyama, 2001). However, allocating time and effort to too many relationships or pursuing maladaptive goals has the potential to deplete an older individual’s resources and jeopardize the relationship quality with existing social support partners. Given these opposing possibilities, goal reengagement capacities may be less likely to directly ameliorate social support satisfaction among older adults who perceive a reduction in their social support networks.

*The Present Research*

This longitudinal study examined the associations between older adults’ goal adjustment capacities, number of perceived social support partners, and social support satisfaction using four waves of data collected over six years. We first examined longitudinal changes in social support measures and expected that participants would generally perceive a reduction in the number of social support partners over time, but not necessarily a decline in their satisfaction with the available social support. Second, we tested the hypothesis that an association between perceived declines in social support partners and lower social support satisfaction would depend on participants’ goal adjustment capacities. This hypothesis was tested for two different scenarios. On the one hand, we examined transient changes in perceptions of social support partners by keeping longitudinal trends constant and comparing waves of data, in which participants perceived more or fewer social support partners than their individual average. On the other hand, we examined longitudinal changes in the number of social support partners and compared participants who perceived a decline versus increase in social support partners over time. Given the general benefits and age-related increases of goal disengagement capacities, we expected for both scenarios that high overall levels of, and increases in, goal disengagement capacities would buffer an adverse effect of perceived reductions in social support networks on lower social support satisfaction. We did not expect such buffering effects to emerge for participants’ goal reengagement capacities.

Method

*Participants*

This study is based on a heterogeneous community sample of older adults from Montreal(MAHS, Wrosch, Schulz, Miller, Lupien, & Dunne, 2007).Two-hundred-fifteen participants were recruited in 2004 through advertisements in local Montreal newspapers. The only inclusion criterion was that they had to be 60 years or older because we were interested in examining a normative sample of older adults. Participants were contacted and invited for an initial appointment to the laboratory and instructed to respond to a questionnaire. If participants were unable to come to the laboratory, they were visited in their homes. A second, third, and fourth wave of the studywere collected approximately two years (*M* = 1.89, *SD* = .08, *range* = 1.72 to 2.13 years, *n* = 184), four years (*M* = 3.78, *SD* = .24, *range* = 3.28 to 4.77 years, *n* = 164), and six years (*M* = 6.05, *SD* = .20, *range* = 5.52 to 6.40 years, *n* = 137) after baseline. Participants received $50 for their participation in each of the first three waves, and $70 for participating in the fourth wave of the study.

We included into the analyses 180 participants, who provided data for social support measures and goal adjustment capacities in at least two waves of the study. Of these 180 participants, 124 participated in all four waves (3 waves = 39 participants; 2 waves = 17 participants).[[3]](#endnote-3) These 180 participants did not significantly differ from the excluded participants in baseline levels of the study’s variables, all |*r*|s < .14, all *p*s > .05. At baseline, participants included in the study were on average 72.12 years old (*SD* = 5.70; *range* = 64-94), 52.2% were female, 36.3% had received an undergraduate degree or a higher education, and 52.2% were married or cohabitating. The sociodemographic and health variables of the study were within the normative range of older adults residing at home (see Rueggeberg, Wrosch, Miller, & McDade, 2012).

# *Materials*

The main study variables incorporated repeated measures of participants’ perceptions of social support and goal adjustment capacities. In addition, inter-individual differences in socio-demographic variables (age, sex, socioeconomic status, and partnership status), chronic illness, and mortality were assessed as control variables.

*Perceived social support* was measured across waves by administering items from the *Social Support Questionnaire* (SSQ, Sarason et al., 1983). Participants were provided with 8 different scenarios associated with social support (i.e., listening when a person needs to talk, a crisis situation, giving useful suggestions to avoid mistakes, talking frankly without watching what one says, having dependable people if help is needed, death of a close family member, needing comfort or being held in a person’s arms, being a part of others’ lives). They were asked to list up to 9 individuals who they could really count on, or who would qualify, for each of these situations. In addition, participants reported how satisfied they were with the available overall support for each of the scenarios, using a Likert-type scale (endpoints: 1 = *very dissatisfied* to 6 = *very satisfied*).

To obtain measures of participants’ typical number of perceived social support partners in situations where it is needed, we averaged for each wave the number of reported social support partners across the eight situations (*MT1* = 2.69, *SDT1* = 1.75, *MT2* = 2.68, *SDT2* = 1.90, *MT3* = 2.48, *SDT3* = 1.48, *MT4* = 2.35, *SDT4* = 1.54; *α*s = .91 to .94). In addition, we calculated for each wave participants’ overall social support satisfaction by averaging their satisfaction scores across the eight situations (*MT1* = 5.11, *SDT1* = .95, *MT2* = 5.00, *SDT2* = 1.13, *MT3* = 5.13, *SDT3* = 1.00, *MT4* = 5.10, *SDT4* = 1.05, *α*s = .94 to .96). Within each wave, measures of social support partners and social support satisfaction were positively correlated with each other, *r*s = .20 to .30, *p*s ≤ .01, and measures of social support partners, *r*s = .49 to .67, *p*s < .01, and social support satisfaction, *r*s = .36 to .52, *p*s < .01, were positively correlated across waves. We computed two types of individual difference measures. First, to obtain indicators of participants’ average social support measures during the entire study period, we separately averaged the reported number of social support partners (*M* = 2.58, *SD* = 1.48,  = .87) and social support satisfaction (*M* = 5.09, *SD* = .78,  = .76) across all assessments. Second, we obtained longitudinal change scores by predicting in separate HLM models variability in social support partners and social support satisfaction by years since study entry, and saving the resulting individual slopes for further analysis (see Results section).

*Goal adjustment capacities* were measured across waves by administering the *Goal Adjustment Scales* (Wrosch et al., 2003b). This instrument assesses individuals’ general tendencies to disengage from unattainable goals and to reengage in alternative goals. Participants were instructed to report how they typically react if they have to stop pursuing an important goal in their life. Four items measured goal disengagement capacities (e.g., *It’s easy* *for me to stop thinking about the goal and let it go*), and six items measured goal reengagement capacities (e.g., *I start working on other new goals to pursue*). Responses were measured on 5-point Likert-type scales, ranging from 1 = *strongly disagree*, to 5 = *strongly agree*. Mean scores were computed for all waves separately for goal disengagement (*MT1* = 3.04, *SDT1* = .73, *MT2* = 3.11, *SDT2* = .77, *MT3* = 3.11, *SDT3* = .68, *MT4* = 3.11, *SDT4* = .76, *α*s = .74 to .55) and goal reengagement (*MT1* = 3.73, *SDT1* = .63, *MT2* = 3.63, *SDT2* = .69, *MT3* = 3.58, *SDT3* = .73, *MT4* = 3.64, *SDT4* = .66, *α*s = .91 to .86). The goal disengagement and goal reengagement scales were not highly correlated within each wave, *r* = .08, *p* = .30 to *r* = .35, *p* < .01, and both the goal disengagement, *r*s = .33 to .46, *p*s < .01, and goal reengagement scales, *r*s = .36 to .47, *p*s < .01, were significantly correlated across waves. We computed the average level of goal disengagement (*M* = 3.08, *SD* = .56,  = .75) and goal reengagement (*M* = 3.65, *SD* = .52,  = .74) across all waves. In addition, we obtained measures of individual differences in longitudinal change by predicting in separate HLM models variability in goal disengagement and goal reengagement by years since study entry, and saving the resulting individual slopes for further analysis (see Footnote 6 in Results section).

*Covariates*. To minimize the possibility of spurious associations, the analyses controlled for inter-individual differences in relevant socio-demographic variables (i.e., age, sex, socioeconomic status, partnership status), chronic illness, and mortality.[[4]](#endnote-4) Socioeconomic status was measured at baseline as participants’ 1) education level (0 = no education, 1 = high school, 2 = collegial or trade school, 3 = bachelor’s degree, 4 = masters or doctorate, *M* = 2.11, *SD* = 1.06); 2) annual family income (0 = less than $17,000, 1 = up to $34,000, 2 = up to $51,000, 3 = up to $68,000, 4 = up to $85,000, 5 = more than $85,000, *M* = 1.53, *SD* = 1.31); and 3) perceived socioeconomic status (Adler, Epel, Castellazzo, & Ickovics, 2000, *M* = 6.21, *SD* = 1.77). These three indicators of SES were correlated in our study (*r*s = .37 to .53, *p*s < .01), and we therefore computed a global measure of SES by averaging the standardized scores of the single indicators (*M* = -.02, *SD* = .81). Partnership status was coded at baseline, distinguishing between participants who were married or cohabitating (*N* = 94) and participants who were single, divorced or widowed (*N* = 86). In addition, we obtained a global measure of chronic illness by counting the presence of 17 different health problems (e.g., coronary heart disease, cancer, osteoarthritis, or diabetes) at baseline and follow-ups (*MT1* = 2.27, *SDT1* = 1.62, *MT2* = 2.45 *SDT2* = 1.79, *MT3* = 2.47, *SDT3* = 1.92, *MT4* = 2.65, *SDT4* = 2.04). Measures of chronic illness were correlated across waves, *r*s = .66 to .80, *p*s < .01, and averaged to obtain a global measure of chronic illness (*M* = 2.48, *SD* = 1.66). Finally, we computed a dichotomous variable, indicating whether participants had died during the study period (17 participants died; *M* = .09, *SD*= .29).

*Data Analysis*. We tested the study’s hypotheses in three sets of analyses by employing hierarchical linear modeling (using HLM 7.0). First, we examined longitudinal changes in perceptions of the number of social support partners and satisfaction with social support. These analyses tested in the Level-1 models whether years since study entry would predict within-person variability in social support satisfaction and number of perceived social support partners across waves. We also saved the OLS estimates of participants’ resulting slopes (i.e., longitudinal changes in outcomes over time) for further analysis.

Second, we examined the effects of transient changes in perceived social support partners on social support satisfaction by predicting in another Level-1 model the variability in social support satisfaction by person-centered scores of participants’ number of social support partners. The Level-1 model also controlled for years since study entry to adjust for potential confounds with long-term longitudinal changes in social support. The subsequent Level-2 model tested whether average levels of, and longitudinal changes in, goal adjustment capacities would produce significant cross-level interactions and moderate the effect of transient within-person changes in number of perceived social support partners on social support satisfaction. The Level-2 model was adjusted for the previously described covariates (i.e., age, sex, SES, partnership status, chronic illness, and mortality) and the average number of social support partners across the study period.[[5]](#endnote-5)

Finally, we examined the effects of long-term longitudinal changes in perceived social support partners on social support satisfaction by adjusting the previous analysis. In particular, we excluded perceptions of the number of social support partners from the Level-1 model, and included longitudinal changes in the perception of the number of social support partners (obtained in the first set of analyses) as a Level-2 predictor. In a subsequent step, we tested the interactions between longitudinal changes in perceived social support partners and goal adjustment capacities (both average levels and changes) on changes in social support satisfaction for significance. All Level-2 predictors were standardized prior to conducting the analysis, and the reported effects are based on models using restricted maximum likelihood estimation and robust standard errors. Notations for the specific models are reported in Table OSM1 to Table OSM3 of the “Online Supplemental Materials” [OSM].

Results

*Longitudinal Changes in Perceived Social Support*

Two Level-1 growth models were conducted to estimate variability in social support satisfaction and perceptions of the number of social support partners across waves by an intercept, person-centered years since study entry, and a residual term. The intercepts corresponded to participants’ averaged levels of social support measures across waves, and the slopes represented yearly change in social support measures over time. The first analysis revealed a significant intercept for social support satisfaction, *coefficient* = 5.08, *SE* = .06, *t* = 87.33, *df* = 179, *p* < .01, implying that average levels of social support satisfaction were significantly different from zero. This analysis did not show a significant slope effect, *coefficient* = .01, *SE* = .01, *t* = .63, *df* = 179, *p* = .53, which suggests that social support satisfaction remained fairly stable across time. The second analysis also indicated a significant intercept for number of social support partners, *coefficient* = 2.58, *SE* = .11, *t* = 23.65, *df* = 179, *p* < .01. However, different from the first analysis, it also demonstrated a significant negative slope for number of social support partners, *coefficient* = -.05, *SE* = .02, *t* = -2.28, *df* = 179, *p* = .02, documenting that participants perceived a reduction in their number of social support partners over time.[[6]](#endnote-6)

*Effects of Transient Changes in Perceived Social Support Partners*

To examine the effects of transient within-person changes in number of perceived social support partners, we repeated the previous analysis for predicting social support satisfaction and included the number of social support partners as an additional predictor into the Level-1 model. Note that this model controlled at Level-1 for time in study and thus estimated the effect of deviations from a person’s average number of social support partners on social support satisfaction, holding longitudinal changes in social support measures constant. In the Level-2 model, we subsequently predicted all parameters of the Level-1 model by the main effects of average levels of, and changes in, goal adjustment capacities (in addition to the covariates and average number of social support partners) to test the hypothesis of potential buffering effects of these variables.

The main results of the analysis are reported in Table 2. The Level-1 model showed a significant effect of number of social support partners, suggesting that participants were more likely to experience lower levels of social support satisfaction in waves in which they perceived fewer, as compared to more, perceived social support partners than their personal average.[[7]](#endnote-7) The results from the Level-2 model showed no significant effects of the covariates on levels of social support satisfaction or on the association between perceived social support partners and social support satisfaction, all *|t*s| < 1.30, all *p*s > .19. However, higher average levels of perceived social support partners and higher average levels of goal disengagement capacities were significantly associated with higher levels of social support satisfaction (see estimates for intercept in Table 2). In addition, the findings demonstrated that both, average levels of, and longitudinal changes in, goal disengagement produced significant cross-level interaction effects on the within-person association between number of perceived social support partners and social support satisfaction (see estimates for slope in Table 2). There were no significant effects of levels of, or changes in, goal reengagement. After controlling for the covariates and average levels of perceived social support partners, the inclusion of the measures of goal adjustment capacities into the Level-2 model explained 7.43% of the variability in social support satisfaction.[[8]](#endnote-8)

The significant cross-level interactions are illustrated in Figure 1. We plotted the within-person associations between number of perceived social support partners and social support satisfaction, using the average upper quartiles (UQ) and lower quartiles (LQ) as reference points of the continuous distributions, separately for participants who had high (UQ = 1.29) versus low levels (LQ = -1.38, see upper panel) of goal disengagement, and who reported longitudinal increases (UQ = 1.26) versus declines (LQ = -1.29, see lower panel), in goal disengagement. Figure 1 shows that the perception of lower than average number of social support partners was significantly associated with reduced levels of social support satisfaction among participants who had low levels of goal disengagement,  = .21, *SE* = .07, *p* < .01, or reported declines in goal disengagement,  = .20, *SE* = .05, *p* < .01. These effects were not significant among participants who had high levels of goal disengagement or reported increases in goal disengagement, s = .01, *SE*s = .05 to .06, *p*s > .83.

*Effects of Longitudinal Changes in Perceived Social Support Partners*

We finally examined the associations between participants’ longitudinal changes in number of perceived social support partners and social support satisfaction by again adjusting the previous analysis. In particular, we excluded number of perceived social support partners from the Level-1 model and instead included the individual difference variable of longitudinal changes perceived social support partners into the Level-2 model (in addition to all other Level-2 predictors included in the previous analysis). Subsequently, we tested the four interaction terms between longitudinal changes in perceived social support partners with average levels of, and changes in, goal disengagement and goal reengagement on longitudinal changes in social support satisfaction separately for significance.

Table 3 summarizes the results of the analysis. Level-1 effects were identical to the results reported in the first set of analyses. In the Level-2 model, none of the control variables exerted a significant effect on either average levels or longitudinal changes in social support satisfaction, all *|t*s| < 1.36, all *p*s > .17. Similar to the previously reported results, higher overall levels of number of perceived social support partners and goal disengagement capacities were significantly associated with higher average levels of social support satisfaction (see estimates for intercept in Table 3). Moreover, longitudinal changes in goal disengagement capacities predicted changes in social support satisfaction over time (see estimates for slope in Table 3). The positive coefficient of this effect implies that the more participants increased their goal disengagement capacities over time, the more they also experienced increases (as compared to declines) in social support satisfaction. None of the other main effects produced significant cross-level associations with levels of, or changes in, social support satisfaction.

The inclusion of the interaction terms demonstrated that changes in goal disengagement capacities and averaged levels of goal reengagement capacities both interacted significantly with changes in number of perceived social support partners in predicting longitudinal changes in social support satisfaction (see estimates for slope in Table 3). In addition, changes in goal reengagement interacted with changes in perceived social support partners in predicting average levels of social support satisfaction (see estimates for intercept in Table 3). None of the other interactions showed significant effects. Above and beyond the influence of the covariates and average social support partners, the Level-2 predictors of changes in number of social support partners and goal adjustment capacities (including the three significant interactions) explained 8.91% of the variability in social support satisfaction.

To interpret the interaction effects on longitudinal changes in social support satisfaction, we reported in Table 4 the slope values (i.e., average yearly change) of social support satisfaction separately for participants who experienced a longitudinal increase versus decline in the number of perceived social support partners as a function of decline versus and increase in goal disengagement capacities (and low versus high levels of goal reengagement capacities), using the average lower and upper quartiles of the distributions as reference points. Table 4 shows that among participants who perceived a longitudinal decline in social support partners, those who also reported a decline in goal disengagement capacities experienced a significant reduction of their social support satisfaction over time. This adverse effect was not obtained among participants who reported an increase in their goal disengagement capacities. In addition, there were no significant longitudinal changes in social support satisfaction among participants who perceived an increase in the number of social support partners (independent of changes in goal disengagement, see Table 4).

A different pattern of results was obtained for the interaction between levels of goal reengagement and longitudinal changes in the number of perceived social support partners. Here, a significant longitudinal increase in social support satisfaction was obtained among participants who perceived an increase in social support partners, but had low levels of goal reengagement. No significant longitudinal changes in social support satisfaction were observed among participants who perceived an increase in number of social support satisfaction and had high levels of goal reengagement, or among participants who perceived a decline in the number of social support partners (independent of levels of goal reengagement capacities, see Table 4).

Finally, although not predicted by our hypotheses, follow-up analyses of the observed interaction effect between changes in goal reengagement and changes in perceived social support partners on levels of social support satisfaction showed that particularly high average levels of social support satisfaction were observed among participants who perceived an increase in the number of social support partners and a decline in goal reengagement capacities. Increases in perceptions of social support partners were significantly associated with high levels of social support satisfaction only among participants who reported declines (but not increases) in goal reengagement, ** = .15, *SE* = .07, *p* = .03. In addition, declines in goal reengagement were associated with high levels of social support satisfaction among participants who perceived increases (but not declines) in the number of social support partners, ** = -.21, *SE* = .07, *p* < .01.

Discussion

This study of older adults showed that participants generally perceived a reduction in the number of social support partners over time, but not in their satisfaction with the available social support. In addition, it demonstrated that long-term longitudinal declines in the number of perceived social support partners can be associated with a reduction of social support satisfaction, but only among older adults who exhibited a decline in their goal disengagement capacities, and not among their counterparts who increased their goal disengagement capacities over time. Moreover, our findings demonstrate that transient within-person reductions in the number of perceived social support partners (independent of long-term longitudinal trends) were also associated with a decline in social support satisfaction. However, high overall levels of, and increases in, goal disengagement capacities buffered this adverse association, documenting that when older adults perceived fewer social support partners than their personal average, goal disengagement capacities protected them from experiencing a reduction in their social support satisfaction.

These findings demonstrate that goal disengagement can facilitate adjustment to a perceived loss of available social support partners, thereby preventing older individuals from the experience of reduced social support satisfaction. By contrast, older adults who tend to persist in the pursuit of unattainable goals may struggle with adjusting to the loss of social support partners, which may put them at risk of experiencing repeated problems with pursuing social goals thereby reducing social support satisfaction. In addition, the findings suggest that goal disengagement capacities are less influential among older adults who did not perceive declines in their social support networks, presumably because these individuals continue to rely on intact social support networks and are thus less likely to encounter goal-related constraints in social domains. These conclusions are consistent with a number of theories, which point to the importance of goal disengagement (Brandtstädter & Renner, 1990; Heckhausen, 1997; Wrosch et al., 2003a) and social relationships (Carstensen et al., 1999; Charles, 2010) for older adults’ well-being.

A different pattern of findings was observed for participants’ goal reengagement capacities. Here, the results did not provide support for a buffering effect of goal reengagement on the association between perceived social support declines and social support satisfaction. Instead, the study’s results showed that, among participants who perceived a longitudinal increase in the number of social support partners, low average levels (but not high average levels) of goal reengagement capacities were associated with increases in social support satisfaction over time. Moreover, converging evidence was obtained for predicting participants’ overall levels of social support satisfaction across the entire study period. In this regard, the highest levels of social support satisfaction were observed among participants who perceived an increase in the number of social support partners and a decline in their goal reengagement capacities.

These findings suggest that the tendency to engage in new goals may not ameliorate social support satisfaction if older adults experience an expansion of their social support network. Further, they are consistent with previous work by showing that goal reengagement may not always produce beneficial effects on individuals’ well-being. For example, while goal reengagement has been linked to beneficial emotional consequences in the context of adaptive new goal pursuits (e.g., exercise behavior among breast cancer survivors, Wrosch & Sabiston, 2013), it has also been shown to be counterproductive if it prevents individuals from investing time and energy in addressing important goals or challenges (see research on life regrets or caregiving, Wrosch et al., 2005, 2011). Thus, goal reengagement may be less effective if it interferes with adaptive self-regulation, which could likely be the case among older adults who perceive an increase in the number of social support partners. Considering that social support often increases when individuals experience severe or chronic problems (Helgeson, 1993), those older adults who tend to engage in new goals could become stretched too thin and may not benefit emotionally from the increased number of social support partners. By contrast, older adults who tend to withdraw from engaging in new goals in such circumstances may be more likely to invest their time and resources into fostering long-standing relationships with their social support partners and experience an improvement in their social support satisfaction.

Overall, the study’s findings have important implications for identifying pathways to successful aging. First, they substantiate theory and research by demonstrating that high levels of, and improvements in, goal disengagement capacities become particularly adaptive if older adults encounter challenges in the pursuit of personal goals (Brandtstädter & Renner, 1990; Heckhausen et al., 2010). They further contribute to the extant literature by revealing a novel process through which goal disengagement capacities can ameliorate the adverse consequences of both transient and long-term longitudinal threats to older adults’ social support networks. In this regard, our research suggests that not all older adults adjust well to perceived declines in social support networks. Thus, reductions in social support networks may render valued social goals unfeasible and thereby increase some older individuals’ risk of experiencing a decline in their social support satisfaction. In such circumstances, the capacity to withdraw effort and commitment from goals that are no longer attainable may facilitate the management of dwindling social support networks by scaling down the importance of valued social activities and goals for an older person’s well-being.

Second, our findings suggest that there are circumstances in older adulthood when it is more adaptive not to engage in new goals. Such situations may be observed among older adults who perceive an increase in their social support networks, which often occurs in the context of emerging health problems (Helgeson, 1993). In such circumstances, withdrawing from engagement in new goals could improve older adults’ relationships with available social support partners, thereby increasing social support satisfaction. This conclusion is consistent with assumptions from socio-emotional selectivity theory, suggesting that effective emotion regulation requires older adults to focus their time and energy on emotionally meaningful partners (Carstensen et al., 1999). Nonetheless, our data also suggest that this process may depend on individual differences in goal reengagement, and that only those older adults who hold back on engaging in new goals may improve their social support satisfaction when they experience age-related problems.

Finally, the observed net stability of social support satisfaction over time converges with the theoretical proposition that well-being can be well maintained in later adulthood (Charles & Carstensen, 2007, 2010). However, such effects have not been found consistently across studies (Pinquart & Sörensen, 2000), with some research even pointing to decreases in well-being in older adulthood (Roberts et al., 1991; Rothermund & Brandtstädter, 2003; Wallace & O’Hara, 1992). Our findings contribute to a better understanding of these mixed findings by documenting that there is a remarkable amount of inter- and intra-individual variability in the trajectories of social support satisfaction. In addition, they demonstrate that both transient and longitudinal declines in perceived social support networks are capable of reducing older adults’ social support satisfaction. The study’s findings could thus imply that within older adulthood, a reduction of social networks may not always reflect a proactive process of adaptation to the challenges of aging (cf. Carstensen et al., 1999). In fact, perceived social support reductions may be triggered by waning resources or factors that operate outside of an individual’s control. As a consequence, reduced social support networks could compromise older adults’ psychological functioning unless individuals are able to adequately cope with such social losses. Note that our findings may or may not generalize to other types of social relationships, given that the reported data are limited to perceived social support networks. In addition, we acknowledge that our study did not capture individual differences in the extent to which participants felt emotionally close to their social support partners. Nonetheless, given that the administered social support scenarios captured relationships that involve a substantial degree of emotional closeness (see SSQ, Sarason et al., 1983), and that SSQ scores have been shown to predict feelings of loneliness after controlling for a variety of structural variables (Sarason et al., 1987), the reported results may reflect, at least in part, the psychological consequences of perceived losses of emotionally close social support partners. However, it is entirely possible that our study also captured social support partners that have been less close to the study participants, and it would thus be important to specifically distinguish in future research peripheral from close social support partners. Research along these lines may reveal the psychological consequences of different types of social support declines and illuminate how older adults can cope with such challenges.

*Limitations and Future Research*

There are further limitations to this study that need to be addressed in future research. First, although the sociodemographic and health characteristics of our sample were within the normative range of older adults, the analyses are based on a relatively small community sample of older adults, which could differ in their psychological characteristics from the general population. Thus, future research should replicate our findings in larger and representative samples of older adults.

Second, there are likely other factors that could influence social support satisfaction. For example, individuals may feel strongly connected with others, even if they do not have goals to interact with them or if others do not actively provide support at a specific moment in time (e.g., children). There may also be qualitative shifts in social support networks, independent of the number of support partners. In addition, our analysis did not examine the processes that contributed to declines in social support networks. In this regard, the emotional consequences of social network changes may vary according to whether these changes are driven by controllable or uncontrollable processes (Charles, 2010). This implies that other factors, including the reasons for perceiving reductions in the number of social support partners, may influence older adults’ social support satisfaction. While we could not address these possibilities in the present research, future studies should assess these variables to improve our understanding of the associations between type of relationship and social loss, self-regulation processes, and well-being.

Third, we did not assess participants’ specific goals. Instead, we focused our analysis on general goal adjustment capacities because declines in perceived social support networks are likely to affect the pursuit of self-relevant goals across various life domains. However, as discussed earlier, the extant literature suggests that, depending on the specific type of new goals that are being adopted, goal reengagement can either protect or compromise a person’s well-being in the context of challenges (Wrosch et al., 2011). We therefore suggest that future studies should examine both general self-regulation capacities as well as how individuals manage their specific goals.

Finally, we focused in our analysis on predicting individuals’ social support satisfaction as a proximal indicator of social well-being that is influenced by perceived social support declines. However, other research has shown that social support declines can also influence a person’s general well-being and physical health (Cohen & Wills, 1985; Uchino, 2009), which raises the possibility that the observed differences in social support satisfaction could have further consequences on a variety of indicators of quality of life (e.g., depression, biological dysregulation, and physical disease). As a consequence, we suggest that future research should be conducted to examine more comprehensively how older adults can effectively manage perceived losses in their social environment and protect their psychological and physical health.

References

Adler, N. E., Epel, E. S., Castellazzo, G., & Ickovics, J. R. (2000). Relationship of subjective and objective social status with psychological and physiological functioning: Preliminary data in healthy, White women. *Health Psychology, 19,* 586-592. doi:10.1037/0278 – 6133.19.6.586

Antonucci, T. C. (2001).  Social relations: An examination of social networks, social support and sense of control.  In J. E. Birren & K. W. Schaie (Eds.), Handbook of the psychology of aging(5th Edition, pp. 427-453). New York: Academic Press.

Antonucci, T. C., & Akiyama, H. (1987). Social networks in adult life and a preliminary examination of the convoy model. Journal *of* Gerontology, 42, 519-527.

Antonucci, T. C., Lansford, J. E. & Akiyama, H. (2001). The impact of positive and negative aspects of marital relationships and friendships on well-being of older adults. *Applied Developmental Science, 5,* 68-75.

Barnett, P. A., & Gotlib, I. H. (1988). Psychosocial functioning and depression: Distinguishing among antecedents, concomitants, and consequences. *Psychological Bulletin*, *104*, 97-126. [doi.org/10.1037/0033-2909.104.1.97](http://dx.doi.org/10.1037/0033-2909.104.1.97" \t "_blank)

Baumeister, R. F., & Leary, M. R. (1995). The need to belong: Desire for interpersonal attachments as a fundamental human motivation. *Psychological Bulletin, 117*, 497-529. [doi.org/10.1037/0033-2909.117.3.497](http://dx.doi.org/10.1037/0033-2909.117.3.497" \t "_blank)

Brandtstädter, J., & Renner, G. (1990). Tenacious goal pursuit and flexible goal adjustment: Explication and age-related analysis of assimilative and accommodative strategies of coping. *Psychology and Aging, 5,* 58–67. [doi.org/10.1037/0882-7974.5.1.58](http://dx.doi.org/10.1037/0882-7974.5.1.58" \t "_blank)

Burmedi, D. Becker, S. Heyl, V. Wahl, H.-W., & Himmelsbach, I. (2002). Behavioral consequences of age-related low vision: A narrative review. *Visual Impairment Research, 4,* 15-45. [doi.org/10.1076/vimr.4.1.15.15633](http://dx.doi.org/10.1076/vimr.4.1.15.15633" \t "_blank)

Carstensen, L. L., Isaacowitz, D. M., & Charles, S. T. (1999). Taking time seriously: A theory of socioemotional selectivity. *American Psychologist,* *54*, 165-181. [doi.org/10.1037/0003-066X.54.3.165](http://dx.doi.org/10.1037/0003-066X.54.3.165" \t "_blank)

Carstensen, L. L., Mikels, J. A., & Mather, M. (2006). Aging and the intersection of cognition, motivation and emotion. In J. Birren & K. W. Schaie (Eds.), *Handbook of the psychology of aging* (pp. 343-362). San Diego: Academic Press.

Charles, S. T. (2010). Strength and vulnerability integration (SAVI): A model of emotional well-being in later adulthood. *Psychological Bulletin, 136,*1068-1091*.* [doi.org/10.1037/a0021232](http://dx.doi.org/10.1037/a0021232" \t "_blank)

Charles, S. T., & Carstensen, L. L. (2007) Emotion regulation and aging. In J Gross (Ed.), *Handbook of emotion regulation* (pp. 307–320). Guilford Press, New York.

Charles, S. T. & Carstensen, L. L. (2010). Social and emotional aging. *Annual Review of Psychology, 61,* 383-409. doi: 10.1146/annurev.psych.093008.100448

Cohen, S. & Wills, T. A. (1985). Stress, social support, and the buffering hypothesis. *Psychological Bulletin*, *98,* 310-57, 1985. [doi.org/10.1037/0033-2909.98.2.310](http://dx.doi.org/10.1037/0033-2909.98.2.310" \t "_blank)

|  |  |
| --- | --- |
|  | Coyne, J. C., & DeLongis, A. (1986). Going beyond social support: The role of social relationships in adaptation. *Journal of Consulting and Clinical Psychology*, *54*, 454. |

Dunne, E., Wrosch, C., & Miller, G. E. (2011). Goal disengagement, functional disability, and depressive symptoms in old age. *Health Psychology, 30*, 763-770. [doi.org/10.1037/a0024019](http://dx.doi.org/10.1037/a0024019" \t "_blank)

Folkman, S. (1997). Positive psychological states and coping with severe stress. *Social Science & Medicine, 45,* 1207–1221. doi:10.1016/S0277- 9536(97)00040-3

Heckhausen, J. (1997). Developmental regulation across adulthood: Primary and secondary control of age-related challenges. *Developmental Psychology*, *33*, 176–187. [doi.org/10.1037/0012-1649.33.1.176](http://dx.doi.org/10.1037/0012-1649.33.1.176" \t "_blank)

Heckhausen, J., Wrosch, C., & Schulz, R. (2010). A motivational theory of life-span development. *Psychological Review, 117,* 32–60. doi:10.1037/ a0017668

Helgeson, V. S. (1993). The onset of chronic illness: Its effect on the patient-spouse relationship. *Journal of Social and Clinical Psychology*, *12*(4), 406-428.

Isaacowitz, D. M., & Blanchard-Fields, F. (2012). Linking process and outcome in the study of emotion and aging. *Perspectives on Psychological Science, 7,* 3-17. [doi.org/10.1177/1745691611424750](http://dx.doi.org/10.1177/1745691611424750" \t "_blank)

Lang, F. R., & Carstensen, L. L. (1994). Close emotional relationships in late life: Further support for proactive aging in the social domain. *Psychology and Aging, 9,* 315–324. [doi.org/10.1037/0882-7974.9.2.315](http://dx.doi.org/10.1037/0882-7974.9.2.315" \t "_blank)

Lang, F. R., & Carstensen, L. L. (2002). Time counts: Future time perspective, goals and social relationships. *Psychology and Aging*, *17*, 125-139. [doi.org/10.1037//0882-7974.17.1.125](http://dx.doi.org/10.1037/0882-7974.17.1.125" \t "_blank)

Lang, F. R., Staudinger, U., & Carstensen, L. L. (1998). [Perspectives on socioemotional selectivity in late life: How personality and social context do (and do not) make a difference.](http://www-psych.stanford.edu/~lifespan/publications/psysci_98.pdf) *Journal of Gerontology*: *Psychological Sciences*, *53*, 21-30. [doi.org/10.1093/geronb/53B.1.P21](http://dx.doi.org/10.1093/geronb/53B.1.P21" \t "_blank)

Lenze, E. J., Rogers, J. C., Martire, L. M., Mulsant, B. H., Rollman, B. L., Dew, M. A., Schulz, R., & Reynolds, C. F. (2001). The associations of late-life depression and anxiety with physical disability: A review of the literature and prospectus for future research. *American Journal of Geriatric Psychiatry, 9,* 113–135. [doi.org/10.1176/appi.ajgp.9.2.113](http://dx.doi.org/10.1176/appi.ajgp.9.2.113" \t "_blank)

Miller, G. E., & Wrosch, C. (2007). You’ve gotta know when to fold’em: Goal disengagement and systemic inflammation in adolescence. *Psychological Science, 18,* 773–777. [doi.org/10.1111/j.1467-9280.2007.01977.x](http://dx.doi.org/10.1111/j.1467-9280.2007.01977.x" \t "_blank)

Murphy, E. (1982) Social origins of depression in old age. *British Journal of Psychiatry, 141*, 135 - 142. [doi.org/10.1192/bjp.141.2.135](http://dx.doi.org/10.1192/bjp.141.2.135" \t "_blank)

Newsom, J. T., & Schulz, R. (1996). Social support as a mediator in the relation between functional status and quality of life in older adults. *Psychology and Aging, 11,* 34-44. [doi.org/10.1037/0882-7974.11.1.34](http://dx.doi.org/10.1037/0882-7974.11.1.34" \t "_blank)

Pinquart, M., & Sörensen S. (2000). Influences of socioeconomic status, social network, and competence on subjective well-being in later life: a meta-analysis. *Psychology and Aging, 15,* 187-224. [doi.org/10.1037/0882-7974.15.2.187](http://dx.doi.org/10.1037/0882-7974.15.2.187" \t "_blank)

Roberts, R. E., Lee, E. S., & Roberts, C. R. (1991). Changes in prevalence of depressive symptoms in Alameda County: Age, period, and cohort trends. Journal of Aging and Health, 3, 66 – 86. doi:10.1177/089826439100300104

Rothermund, K., & Brandtstädter, J. (2003). Depression in later life: Cross-sequential patterns and possible determinants. *Psychology and Aging, 18,* 80–90. doi:10.1037/0882–7974.18.1.80

Rueggeberg, R., Wrosch, C., Miller, G. E., McDade, T. W. (2012). Associations between health-related self-protection, diurnal cortisol, and C-reactive protein in lonely older adults. *Psychosomatic Medicine, 74*, 937-944. doi: 0033-3174/12/7409Y0937

Sarason, I. G., Levine, H. M., Basham, R. B., & Sarason, B. R. (1983). Assessing social support: The social support questionnaire. *Journal of Personality and Social Psychology, 44,* 127-39. [doi.org/10.1037/0022-3514.44.1.127](http://dx.doi.org/10.1037/0022-3514.44.1.127" \t "_blank)

Sarason I. G., Sarason, B. R., Shearin, E. N., & Pierce, G. R. (1987). A brief measure of social support: Practical and theoretical implications. *Journal of Social and Personal Relations, 4,* 497-610. [doi.org/10.1177/0265407587044007](http://dx.doi.org/10.1177/0265407587044007" \t "_blank)

Seeman, T. E., & Berkman, L. F. (1988). Structural characteristics of social networks and their relationship with social support in the elderly: who provides support. *Social Science & Medicine*, *26*, 737-749.

Snijders, T., & Bosker, R. (1999). Multilevel Analysis: an introduction to basic and advanced multilevel modeling. London: Sage Publications.

Turvey, C. L., Carney, C., Arndt, S., Wallace, R. B., & Herzog, R. (1999). Conjugal loss and syndromal depression in a sample of elders aged 70 years or older*. American Journal of Psychiatry, 156*, 1596-1601. PMid:10518172

Uchino, B. N. (2009). Understanding the links between social support and physical health: A life-span perspective with emphasis on the separability of perceived and received support. *Perspectives on Psychological Science, 4,* 236-255. doi: 10.1111/j.1745-6924.2009.01122.x

Wallace, J., & O'Hara, M. W. (1992). Increases in depressive symptomatology in the rural elderly: Results from a cross-sectional and longitudinal study. *Journal of Abnormal Psychology, 101,* 398-404. [doi.org/10.1037/0021-843X.101.3.398](http://dx.doi.org/10.1037/0021-843X.101.3.398" \t "_blank)

|  |  |
| --- | --- |
|  | Wills, T. A., & Shinar, O. (2000). Measuring perceived and received social support. In S. Cohen, L. G. Underwood, & B. H. Gottlieb (Eds.), *Social support measurement and intervention: A guide for health and social scientists*, pp. 86-135). New York: Oxford University Press. |

Wrosch, C. (2011). Self-regulation of unattainable goals and pathways to quality of life. In S. Folkman (Ed.). *The* *Oxford Handbook of Stress, Health, and Coping* (pp. 319-333). New York: Oxford University Press.

Wrosch, C., Amir, E., & Miller, G. E. (2011). Goal adjustment capacities, coping, and subjective well-being: The sample case of caregiving for a family member with mental illness. *Journal of Personality and Social Psychology, 100,* 934-946. [doi.org/10.1037/a0022873](http://dx.doi.org/10.1037/a0022873" \t "_blank)

Wrosch, C., Bauer, I., & Scheier, M. F. (2005). Regret and quality of life across the adult life span: The influence of disengagement and available future goals. *Psychology and Aging, 20,* 657-670. [doi.org/10.1037/0882-7974.20.4.657](http://dx.doi.org/10.1037/0882-7974.20.4.657" \t "_blank)

Wrosch, C., & Miller, G. E. (2009). Depressive symptoms can be useful: Self-regulatory and emotional benefits of dysphoric mood in adolescence. *Journal of Personality and Social Psychology, 96*, 1181-1190. [doi.org/10.1037/a0015172](http://dx.doi.org/10.1037/a0015172" \t "_blank)

Wrosch, C., & Sabiston, C. M. (2013). Goal adjustment, physical and sedentary activity, and well-being and health among breast cancer survivors. *Psychooncology, 22*, 581-589. doi: 10.1002/pon.3037

Wrosch, C., Scheier, M. F., Carver, C. S., & Schulz, R. (2003a). The importance of goal disengagement in adaptive self-regulation: When giving up is beneficial. *Self and Identity, 2*, 1-20. [doi.org/10.1080/15298860309021](http://dx.doi.org/10.1080/15298860309021" \t "_blank)

Wrosch, C., Scheier, M. F., Miller, G. E., Schulz, R., & Carver, C. S. (2003b). Adaptive self-regulation of unattainable goals: Goal disengagement, goal reengagement, and subjective well-being. *Personality and Social Psychology Bulletin, 29*, 1494-1508. [doi.org/10.1177/0146167203256921](http://dx.doi.org/10.1177/0146167203256921" \t "_blank)

Wrosch, C., Schulz, R., Miller, G. E., Lupien, S., & Dunne, E. (2007). Physical health problems, depressive mood, and cortisol secretion in old age: Buffer effects of health engagement control strategies. *Health Psychology, 26,* 341-349. [doi.org/10.1037/0278-6133.26.3.341](http://dx.doi.org/10.1037/0278-6133.26.3.341" \t "_blank)

Wrzus, C., Mueller, V., Wagner, G. G., Lindenberger, U., & Riediger, M. (2013). Affective and cardiovascular responding to unpleasant events from adolescence to old age: Complexity of events matters. *Developmental Psychology, 49*, 384-397.

Footnotes

Table 1

*Zero-Order Correlations Between Main Variables.*

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 |
| 1. Average social support partners |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 2. Change in social support partners | .06 |  |  |  |  |  |  |  |  |  |  |  |  |
| 3. Average social support satisfaction | .32\*\* | .09 |  |  |  |  |  |  |  |  |  |  |  |
| 4. Change in social support satisfaction | .01 | .09 | .10 |  |  |  |  |  |  |  |  |  |  |
| 5. Average goal disengagement | .06 | -.01 | .26\*\* | -.06 |  |  |  |  |  |  |  |  |  |
| 6. Change in goal disengagement | .14 | .23\*\* | .04 | .24\*\* | -.06 |  |  |  |  |  |  |  |  |
| 7. Average goal reengagement | .23\*\* | .05 | .25\*\* | -.11 | .27\*\* | .07 |  |  |  |  |  |  |  |
| 8. Change in goal reengagement | .18\* | -.01 | -.05 | .05 | .10 | .11 | .08 |  |  |  |  |  |  |
| 9. Age | .03 | .13 | .07 | .04 | -.01 | -.01 | -.10 | -.01 |  |  |  |  |  |
| 10. Sex a | .23\*\* | .00 | -.04 | .06 | -.01 | .03 | .09 | .00 | .04 |  |  |  |  |
| 11. Socioeconomic status | .25\*\* | -.08 | .07 | -.04 | .04 | .04 | .05 | -.07 | -.04 | -.16\* |  |  |  |
| 12. Partnership status a | -.02 | -.05 | -.10 | .04 | -.05 | .12 | -.03 | .00 | -.03 | .25\*\* | -.27\*\* |  |  |
| 13. Chronic illness  14. Mortality | -.12  .18\* | -.20\*\*  .06 | -.01  .12 | -.12  -.06 | -.01  .07 | -.08  -.08 | -.04  .13 | .01  -.02 | .02  .20\*\* | -.17\*  -.03 | -.04  .04 | .07  .00 | -.02 |

*Note*. a Higher values represent females and participants without a partner. \*\* *p* < .01; \* *p* < .05.

Table 2

*Results from HLM Analyses Examining the Effects of Transient Change in the Number of Social Support Partners and Level and Longitudinal Change in Goal Adjustment Capacities on Social Support Satisfaction (N = 180).*

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | Social support satisfaction | | | |
|  | Average level  (Intercept) | | Effect of social support partners (Slope) | |
|  | *Coefficient (SE)* | *t* | *Coefficient (SE)* | *t* |
| Level-1  Level-2  Average social support partners Average goal disengagement  Average goal reengagement  Change in goal disengagement  Change in goal reengagement | 5.08 (.06)  .25 (.06)  .17 (.05)  .12 (.07)  .00 (.05)  -.10 (.06) | 87.09\*\*  4.42\*\*  3.19\*\*  1.74  .04  -1.74 | .12 (.03)  -.04 (.03)  -.07 (.03)  -.03 (.03)  -.07 (.03)  .03 (.04) | 3.73\*\*  -1.31  -2.12\*  -.84  -2.09\*  .76 |

*Note.* All estimates were controlled for person-centered time since study entry. In addition, Level-2 predictors were controlled for age, sex, partnership status, SES, chronic disease, and mortality.The Level-1 model had 179 *df*s and the Level-2 model had 168 *df*s.

\* *p* < .05; \*\* *p* < .01.

Table 3

*Results from HLM Analyses Examining the Effects of Longitudinal Change in the Number of Social Support Partners and Level and Longitudinal Change in Goal Adjustment Capacities on Longitudinal Change in Social Support Satisfaction (N = 180).*

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | Social support satisfaction | | | |
|  | Average level  (Intercept) | | Yearly change  (Slope) | | |
|  | *Coefficient (SE)* | *t* | *Coefficient (SE)* | *t* | |
| Level-1  Level-2 main effects  Average social support partners  Average goal disengagement (GD)  Average goal reengagement (GR)  Change in social support partners (SS)  Change in goal disengagement (GD)  Change in goal reengagement (GR)  Level-2 interaction effects  SS X GD  SS X GD  SS X GR  SS X GR | 5.08 (.06)  .25 (.06)  .17 (.05)  .12 (.07)  .05 (.05)  -.01 (.05)  -.11 (.06)  .01 (.05)  -.02 (.03)  .03 (.06)  -.05 (.02) | 87.33\*\*  4.35\*\*  3.21\*\*  1.71  1.00  -.26  -1.90  .22  .86  .43  -2.31\* | .01 (.01)  -.01 (.02)  .01 (.01)  -.00 (.02)  .02 (.02)  .05 (.02)  -.01 (.02)  -.01 (.02)  -.03 (.01)  -.05 (.02)  -.00 (.01) | .63  -.59  1.27  -.27  1.12  2.30\*  -0.57  -.40  -2.12\*  -2.44\*  -.17 | |

*Note.* Level-2 predictors were controlled for age, sex, partnership status, SES, chronic disease, and mortality.The Level-1 model had 179 *df*s, and Level-2 models had 167 *df*s (main effects) and 166 *df*s (interactions). \* *p* < .05; \*\* *p* < .01.

Table 4

*Longitudinal Change in Social Support Satisfaction (and Standard Errors) as a Function of Change in Number of Social Support Partners as well as Change in Goal Disengagement and Average Levels of Goal Reengagement (N = 180).*

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | Longitudinal change in social support satisfaction | | | | | | | |
|  | Social support partner increase | | | | Social support partner decline | | | |
|  | *Coefficient* (*SE*) | *t* | | *Coefficient* (*SE*) | | | *t* |
| Change in goal disengagement  Decline  Increase  Average goal reengagement  Low  High | .02 (.05)  .05 (.03)  .12 (.04)  -.04 (.04) | .52  1.72  3.07\*\*  -.98 | | -.12 (.04)  .08 (.05)  -.12 (.07)  .06 (.05) | | | -2.91\*\*  1.68  -1.73  1.38 |
| \* *p* < .05; \*\* *p* < .01. Note that the slopes for change in social support satisfactions were estimated for the upper average quartiles (UQ) and lower average quartiles (LQ) of the predictor variables. Change in social support partners: LQ = -1.29, UQ = 1.20; change in goal disengagement: LQ = -1.29, UQ = 1.26; average goal reengagement: LQ = -1.37, UQ = 1.19. | | | | | | | |
|  |  | |  | | |



*Figure 1*. Within-person associations between number of social support partners and social support satisfaction for participants with high versus low average levels of goal disengagement capacities (upper panel) and declines versus increases in goal disengagement (lower panel).

Online Supplemental Materials (OSM)

Satisfaction with Social Support in Older Adulthood: The Influence of Social Support Changes and Goal Adjustment Capacities

Carsten Wrosch, Rebecca Rueggeberg, and Christiane Hoppmann

This file includes:

Table OSM 1

Table OSM 2

Table OSM 3

Table OSM 1

*Specification of HLM models for Estimating Longitudinal Changes in Social Support Satisfaction, Number of Social Support Partners, Goal Disengagement Capacities, and Goal Reengagement Capacities.*

|  |
| --- |
| Level-1:  Social support satisfaction = β0j + β1j (Time) + rij  Number of social support partners = β0j + β1j (Time) + rij  Goal Disengagement capacities = β0j + β1j (Time) + rij  Goal reengagement capacities = β0j + β1j (Time) + rij |

*Note. Time* was person-centered and represented years since study entry. Note that the four β1j-values are based on OLS estimation and were saved and used as predictors in subsequent models representing inter-individual differences in intra-individual change (see Tables OSM2 and OSM3).

Table OSM 2

*Specification of HLM models for Estimating Effects of Transient Within-Person Changes in Social Support Partners on Social Support Satisfaction*

|  |
| --- |
| Level-1:  Social support satisfaction = β0j + β1j (Number of social support partners) + β2j (Time) + rij  Level-2:  β0j = γ00 + γ01 (Average social support partners) + γ02 (Average goal disengagement) + γ03 (Average goal reengagement) + γ04 (Change in goal disengagement)  + γ05 (Change in goal reengagement) + γ06 (Age) + γ07 (Sex) + γ08 (SES)  + γ09 (Partnership status) + γ010 (Chronic disease) + γ011 (Mortality) + u0j  β1j = γ10 + γ11 (Average social support partners) + γ12 (Average goal disengagement) + γ13 Average goal reengagement) + γ14 (Change in goal disengagement)  + γ15 (Change in goal reengagement) + γ16 (Age) + γ17 (Sex) + γ18 (SES)  + γ19 (Partnership status) + γ110 (Chronic disease) + γ111 (Mortality) + u1j  β2j = γ20 + γ21 (Average social support partners) + γ22 (Average goal disengagement) + γ23 (Average goal reengagement) + γ24 (Change in goal disengagement)  + γ25 (Change in goal reengagement) + γ26 (Age) + γ27 (Sex) + γ28 (SES)  + γ29 (Partnership status + γ210 (Chronic disease) + γ211 (Mortality) + u2j |

*Note. Number of social support partners* and *Time* were person-centered. *Time* represented years since study entry. *SES* = socioeconomic status.

Table OSM 3

*Specification of HLM models for Estimating Effects of Longitudinal Changes in Social Support Partners on Social Support Satisfaction*

|  |
| --- |
| Level-1:  Social support satisfaction = β0j + β1j (Time) + rij  Level-2 main effects:  β0j = γ00 + γ01 (Average social support partners) + γ02 (Average goal disengagement) + γ03 (Average goal reengagement) + γ04 (Change in social support partners) + γ05 (Change in goal disengagement) + γ06 (Change in goal reengagement) + γ07 (Age) + γ08 (Sex) + γ09 (SES) + γ010 (Partnership status) + γ011 (Chronic disease) + γ012 (Mortality) + u0j  β1j = γ10 + γ11 (Average social support partners) + γ12 (Average goal disengagement) + γ13 Average goal reengagement) + γ14 (Change in social support partners) + γ15 (Change in goal disengagement) + γ16 (Change in goal reengagement) + γ17 (Age) + γ18 (Sex) + γ19 (SES) + γ110 (Partnership status) + γ111 (Chronic disease) + γ112 (Mortality) + u1j  Level-2 interaction effects (only reported for the interaction between changes in social support partners changes in goal disengagement): a  β0j = γ00 + γ01 (Average social support partners) + γ02 (Average goal disengagement) + γ03 (Average goal reengagement) + γ04 (Change in social support partners) + γ05 (Change in goal disengagement) + γ06 (Change in goal reengagement) + γ07 (Age) + γ08 (Sex) + γ09 (SES) + γ010 (Partnership status) + γ011 (Chronic disease) + γ012 (Mortality) + γ013 (Changes in social support partners X Changes in goal disengagement) + u0j  β1j = γ10 + γ11 (Average social support partners) + γ12 (Average goal disengagement) + γ13 Average goal reengagement) + γ14 (Change in social support partners) + γ15 (Change in goal disengagement) + γ16 (Change in goal reengagement) + γ17 (Age) + γ18 (Sex) + γ19 (SES) + γ110 (Partnership status) + γ111 (Chronic disease) + γ112 (Mortality) + γ113 (Changes in social support partners X Changes in goal disengagement) + u1j |

*Note. Time* represented person-centered years since study entry. *SES* = socioeconomic status. a Note that three more interaction models were tested in subsequent analyses (Changes in social support partners X a) Average goal disengagement, b) Changes in goal reengagement, and c) Average goal reengagement).

1. Although social network size has been positively associated with perceived social support (Seeman & Berkman, 1988), not all social partners provide support (Coyne & DeLongis, 1986), and social network size may therefore not always be strongly associated with perceived social support. [↑](#endnote-ref-1)
2. While these theories have communalities, they also differ in term of their focus on addressing dispositional versus goal-specific self-regulation processes. [↑](#endnote-ref-2)
3. For estimating intra-individual associations, missing data were addressed within the HLM analyses, which calculated intercepts and slopes for each individual based on the number of available data points. We did not obtain missing data for all other variables used in the analyses. [↑](#endnote-ref-3)
4. Because of constraints in degrees of freedom, our models did not control for time-varying covariates. [↑](#endnote-ref-4)
5. Predictor variables at Level-1 were person-centered to allow for an interpretation of intercepts as the overall average of outcome levels across the study period. In addition, we adjusted the Level-2 effects for average number of social support partners because levels and changes in social support satisfaction could depend on general individual differences in network size. [↑](#endnote-ref-5)
6. There was considerable variability around the averaged intercepts and slopes for number of social support partners (intercept: 2 = 1313.93, *p* < .01; slope: 2 = 265.71, *p* < .01) and social support satisfaction (intercept: 2 = 605.66, p < .01; slope: 2 = 183.54, *p* = .39). We also conducted additional growth models for goal disengagement and goal reengagement (see Methods), indicating that both constructs did not significantly change over time, |*t*s| < 1.77, *p*s > .05. [↑](#endnote-ref-6)
7. There was considerable variability around the average level of social support satisfaction, 2 = 569.88, *p* < .01, and the average within-person association between number of social support partners and social support satisfaction, 2 = 173.69, *p* = .10. [↑](#endnote-ref-7)
8. The proportion of explained variance was calculated as Pseudo R-squared value, based on a full maximum likelihood solution (Snijders & Bosker, 1999). Note that the model also estimated effects of Level-2 predictors for yearly change in social support satisfaction. Because these effects were similar to the effects reported in subsequent analyses (see Table 3), they are not reported here. [↑](#endnote-ref-8)