

How Does Social Support Help Build Healthy Habits?
Understanding Social Support and Its Mechanisms of Action

by

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ABSTRACT

Perceived social support, broadly defined as resources or assistance provided by another person, has been consistently identified as a predictor of health and well-being. These outcomes may be partially explained by direct physiological effects, or the effects of perceived social support on psychological mechanisms that influence engagement in health behaviors, though what exactly these mechanisms are remains unclear. Previous work has proposed that through enhanced self-efficacy and self-esteem, perceived social support increases engagement in health behaviors, though direct evidence for this relationship is limited. Attachment, which plays a crucial role in healthy romantic relationships, may relate to social support's influence on behavioral outcomes. This study utilized a novel social support priming task to examine if attachment-related working models of romantic partners mediate the relationships among different forms of social support, self-efficacy, and self-esteem in predicting behavioral intentions for self-nominated health goals. Broadly, primed social support positively predicted how supported individuals felt, which in turn predicted working models of their romantic partners. Working models significantly predicted self-esteem, self-efficacy, and intentions to work toward a personally relevant health goal. Self-esteem and self-efficacy also predicted behavioral intentions.

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HOW DOES SOCIAL SUPPORT HELP BUILD HEALTHY HABITS?

UNDERSTANDING SOCIAL SUPPORT AND ITS MECHANISMS OF ACTION

Close relationships are a ubiquitous aspect of daily life, and the context for many of our most impactful experiences, with potent implications for the health and well-being of those involved. In particular, perceived social support, defined as perception of assistance or comfort one receives from others—especially in times of stress—has been linked to mortality and morbidity across a variety of health conditions and the magnitude of these effects is strong (Holt-Lunstad & Uchino, 2015). It is critical to understand the mechanisms through which perceived social support facilitates these outcomes, to maximize effectiveness of social support-based efforts to promote health and well-being.

What is Social Support?

Social support is broadly defined as resources or assistance provided by another person, though further distinctions can be made among subcategories of supportive behaviors (Schwarzer & Lepper, 1988). *Emotional support* refers to the verbal and nonverbal processes through which care, concern, and comfort are communicated to an individual under stress. Emotional support may involve listening to someone talk through their problems, validating feelings or experiences, or providing physical comfort (such as hugging or handholding). *Instrumental support* involves tangible actions that function to help someone solve a problem or work toward a specific goal. Instrumental support may involve assistance with specific tasks, help planning future actions, or sharing of information and advice. *Capitalization* is a support process through which someone shares good news with a close other, who in turn responds in a celebratory way that

perpetuates shared positivity (Gable & Reis, 2010). Together, these behaviors contribute to an individual's perceived social support: the perception that support is available, and that close others can and do engage in supportive behaviors such as those described above. Importantly, perceptions of support and actual received support are not interchangeable constructs (Haber et al., 2007), with extensive research highlighting perceived support as a more robust, positive predictor of health outcomes (Holt-Lunstad et al., 2010; Uchino, 2009). However, given the extensive literature examining the unique effects of emotional support, instrumental support, and capitalization, and the frequency with which they occur in close relationships, understanding how perceptions of each specific support behavior uniquely contribute to health and well-being may prove useful.

Physiological and Psychological Outcomes of Perceived Social Support

Perceived social support has been consistently identified as a predictor of health and well-being, and these outcomes may be the consequence of direct physiological effects of perceived social support. Most existing work tying social support to physiological outcomes has focused on cardiovascular health, with strong evidence linking social support to aspects of cardiovascular functioning that result in decreased disease risk (Uchino et al., 2012). Generally, this body of work points to social support as a buffer of the potentially deleterious effects of stress-induced cardiovascular reactivity (Cohen & Wills, 1985). Social support has also been shown to impact the progression of cardiovascular disease after diagnosis, such that social support slows the progression of disease (Angerer et al., 2000; Wang et al., 2005). Additionally, multiple studies suggest that social support may also bolster immune system functioning, decreasing vulnerability

to illness (Dixon et al., 2001; Esterling et al., 1996; Lutgendorf et al., 2005; Miyazaki et al., 2005).

Importantly, the effects of perceived social support on health and well-being may also be explained by indirect effects of perceived social support through psychological mechanisms that impact engagement in health-relevant behaviors. Integrating various theoretical models, Uchino (2006) proposed that through enhanced self-efficacy and self-esteem, perceived social support serves to buffer stress, leading to increased health behaviors and thus better health. Self-esteem, an individual's sense of self-worth, is a positive predictor of health-promoting behaviors (Huntsinger & Luecken, 2004). Perceived social support may boost feelings of self-worth by demonstrating that the recipient is valued by those around them. Though not a large literature, some studies have documented a positive relationship between social support and self-esteem, with some studies demonstrating that self-esteem mediates the relationship between social support and psychological adjustment (DuBois et al., 2002; Goodwin et al., 2004; Kleiman & Riskand, 2013; Schroevers et al., 2003; Symister & Friend, 2003). Generalizability is limited, however, as participants were limited to either clinical populations or undergraduate students.

Self-efficacy, defined as an individual's belief in their ability to execute behaviors necessary to achieve a goal, is a robust determinant of successful behavior change (Bauman et al., 2012). Perceived social support—when derived from responsive, instrumental actions or attempts to boost morale—may bolster an individual's belief in their ability to reach their goals. Some cross-sectional studies have documented a positive

relationship between social support and self-efficacy (Coffman & Gilligan, 2002; Karademas, 2006). Moreover, Shaw and colleagues (2004) found evidence for links among perceived support, self-esteem, and feelings of control in a nationally representative sample, though future work is clearly still needed.

Though these studies provide initial evidence for relationships among social support, self-esteem, and self-efficacy, researchers have yet to systematically examine esteem and efficacy as mechanisms through which support influences behavioral outcomes. Moreover, none of the existing evidence linking perceived social support to self-esteem and self-efficacy is experimental; it remains uncertain if social support is an antecedent of esteem and efficacy, or if these positive self-views facilitate higher quality, more responsive relationships. It is also uncertain whether perceptions of support directly impact self-views, or if other components of quality relationships may play a role.

Attachment-Related Working Models of the Self and Others

Though it remains unclear how exactly perceived support influences an individual's thoughts, feelings, and actions, an extensive literature points to attachment-related processes as robust predictors of psychological and behavioral outcomes. Secure attachment, which exists at the dispositional level, is defined as having faith and trust in an attachment figure's responsiveness to one's needs, and confidence in one's own worth and abilities (Mikulincer & Shaver, 2005). Attachment figures may serve as a source of comfort and safety in the face of stress (*safe haven*), as well as a source of security and confidence for exploring and taking risks (*secure base*) (Fraley & Shaver, 2000).

Moreover, attachment beliefs are derived from responsive interactions (or lack thereof), which highlights attachment as a plausible mechanism of perceived support.

Though attachment style is often described at the dispositional level, attachment bonds are dynamic in nature, and are comprised of affective, cognitive, and behavioral components that fluctuate over time. Of specific interest to the current study are the working models of both the self and particular attachment figures that individuals possess. These working models are internalizations of the attachment figure's behaviors, and function as prototypes for judging how the attachment figure will respond to various situations. Individuals hold beliefs about whether or not an attachment figure is someone who provides responsive support, and whether or not the self is a recipient of that support and should be viewed positively (Bartholomew & Horowitz, 1991). Specifically, expectations about attachment figures' willingness and ability to engage in responsive behaviors should influence self-esteem and self-efficacy, which are related, but characteristically distinct, working models of the self.

Why might self-esteem and self-efficacy be influenced by working models of attachment figures? Past work has proposed that self-esteem functions as an interpersonal monitoring system, such that self-esteem fluctuates as a function of the degree to which one feels valued by close others (Leary & Baumeister, 2000; Leary, 2005). An individual's expectation that an attachment figure will engage in supportive, nurturing behaviors should signal that the attachment figure in question is invested in and values their well-being, which in turn should bolster feelings of self-esteem. Relatedly, Bandura's (1997) theory of self-efficacy highlights that efficacy can be derived from a

variety of sources, including social influences. Expecting an attachment figure to be responsive in times of need should increase the likelihood that an individual will feel equipped with the resources and skills needed to work toward their goals, thus resulting in greater perceptions of self-efficacy.

Given that attachment figures may engage in some, but not necessarily all, types of supportive behaviors, separate working models may represent attachment figures as a secure base and/or a safe haven. For example, an attachment figure may consistently provide comfort when under stress (safe haven), but fail to provide encouragement for pursuing personal goals (secure base). Though the secure base and safe haven behaviors are both indicative of quality attachment bonds and may fall under a larger umbrella of expectations of support from one's attachment figure, they are distinct behaviors that could correspond to independent facets of working models. Moreover, experiences of emotional support, instrumental support, and capitalization may have unique effects on these distinct facets of working models.

Importantly, working models are revised and updated based on relevant experiences and contextual demands, suggesting that beliefs about attachment figures can evolve over the long term or even fluctuate over the short term (Bartholomew & Horowitz, 1991; Davila et al., 1999; Davila & Sargent, 2003; Feeney & Noller, 1992; Kirkpatrick & Hazan, 1994). Experimental work has demonstrated the malleability of attachment-related beliefs, with several studies utilizing priming techniques to shift feelings of security, resulting in notable effects on affect, emotional well-being, attitudes, and behavior (Gillath & Karantzas, 2019; Gillath et al., 2022). These findings suggest

that social support from a romantic partner—a particularly important attachment figure in adulthood—may influence working models of the self as well as the partner, with predictable implications for downstream behavior. Moreover, these effects may differ based on qualities of the support behavior in question.

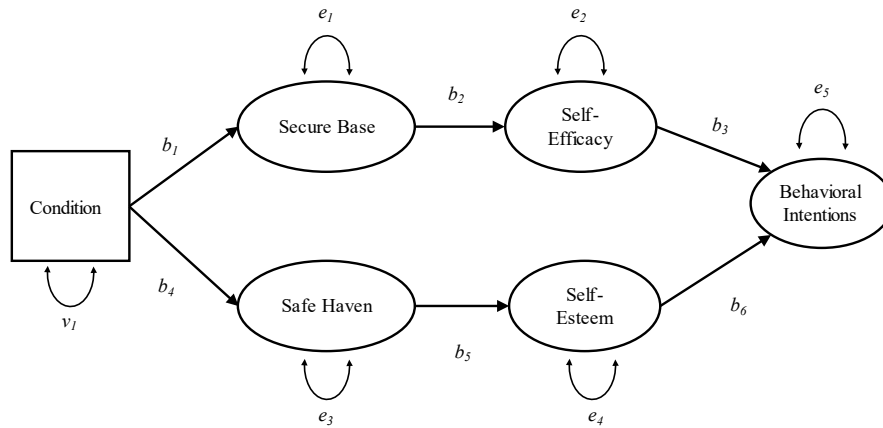


Figure 1: Proposed model of mechanisms through which perceived support influences behavioral intentions.

Perceived Social Support, Working Models, and Health Behavior

How might attachment account for some of the effects of perceived social support on health behavior? Social support exchanges may inform working models of one's partner, influencing expectations that one's partner will act as a *safe haven*, providing comfort and safety in the face of stress. When under stress, acts of emotional and instrumental support may signal that one is worthy of love, care, and comfort, boosting feelings of self-esteem (Goodwin et al., 2004). The safe haven component of attachment may also prove useful in managing stress specific to the health behavior goal in question; a romantic partner who serves as a source of comfort and reassurance (rather than criticism or judgement) when inevitable missteps occur should boost esteem in a way that helps maintain motivation and increase goal re-engagement.

Working models of one's romantic partner behaving as a *secure base*, someone who is a reliable resource who can provide guidance, encouragement, and stability, should help an individual embrace new goals and behaviors with fewer reservations and less fear of failure. Though social support is often mobilized by stress, stress is not a requirement for social support processes to unfold. In the absence of hardship or challenge, social support from a romantic partner may enable an individual to actively pursue opportunities for growth and personal development. Support behaviors that validate one's personal goals, aspirations, and capabilities (capitalization) and directly or indirectly facilitate acting upon one's goals (instrumental support) should activate beliefs that one's romantic partner is a secure base who supports autonomy, but can and will provide affirmation as needed. Receiving these forms of support in low-stress contexts should help individuals feel more efficacious in their ability to work toward their health goals.

Existing evidence supports the plausibility of these proposed relationships, but most prior work examines the effects of attachment *style*, rather than working models of attachment figures and of the self. Though links between attachment bonds and self-esteem are implied by the conceptual definition of attachment, some work has provided direct evidence for this relationship, especially in adolescents (Bylsma et al., 1997; Gorrese & Ruggieri, 2013; Foster et al., 2007). Bender and Ingram (2018) also found evidence that attachment security is predictive of greater self-efficacy, though future work is clearly still needed. Moreover, a limited body of work has linked attachment style to health behaviors; insecure attachment has been shown to predict poor health behaviors including increased drug and alcohol use, risky sexual behavior, poorer diet and

decreased physical activity in both adolescents and young adults, and some of these effects are partially explained by increased distress experienced by those who are insecurely attached (Cooper, Shaver, & Collins, 1998; Feeney, Peterson, Gallois, & Terry, 2000). Figure 1 depicts the hypothesized theoretical model.

Given the impact of social support on health outcomes, it is critical that future work connect these disparate literatures to examine the unique roles social support, working models of attachment figures, self-esteem, and self-efficacy play in health behavior outcomes, within the context of the same study. Moreover, fine-grained, experimental examinations of fluctuations in attachment-related working models, rather than solely examining attachment as a static dispositional trait, would provide clarity on the potentially sequential relationships among these variables in predicting behavioral outcomes.

The Current Study

The present study asks if exposure to primes activating memories of receiving specific types of social support—emotional support, instrumental support, and capitalization—from a romantic partner results in increased behavioral intentions to work toward personally meaningful, health-relevant goals. Moreover, this study explores if individuals' working models of their romantic partner, as well as self-esteem and self-efficacy, mediate the relationship between primed support and health-related behavioral intentions. Key study hypotheses are as follows:

H1: Exposure to a prime of emotional support (as compared to a control) will be positively associated with behavioral intentions, and this

association will be serially mediated by viewing one's partner as a safe haven and feelings of self-esteem.

H2: Exposure to a prime of instrumental support (as compared to a control) will be positively associated with behavioral intentions, and this association will be serially mediated by viewing one's partner as a safe haven and feelings of self-esteem, as well as viewing one's partner as a secure base and feelings of self-efficacy

H3: Exposure to a prime of capitalization/esteem support (as compared to a control) will be positively associated with behavioral intentions, and this association will be serially mediated by viewing one's partner as a secure base and feelings of self-efficacy.

Method

Participants

A total sample of $N = 1008$ was recruited (approximately 250 per condition), aiming for a final sample of at least 800 (200 per condition) participants, after removing those who failed to meet the inclusion criteria. Given two serial mediators, this sample size provides over 90% power to detect a small to medium effect for the $a1d2b$ path, assuming $\alpha = .05$ (estimated using the Monte Carlo Power Analysis for Indirect Effects app created by Schoemann and colleagues, 2018). To ensure high data quality, multiple attention checks were included throughout the study; participants who failed any of the attention checks were removed from the final sample.

After removing participants who failed any of the three attention checks and/or did not appropriately complete the social support priming task, the final sample was reduced to 857 participants. Demographic information of both the final sample and excluded participants can be found in Table 1.

Sampling

Participants were recruited via the Cloud Research platform. Specifically, individuals who were (1) currently in a romantic relationship, (2) currently residing in the US, and (3) fluent in written English were eligible to participate. Participants were paid \$1.25 for their participation. This study was approved by the ASU IRB.

Procedure

Those interested in participating joined the study via a Qualtrics link. Participants were first presented with an online consent form, and upon completion of consent were asked to report the length of their current relationship, as well as whether or not they live with their partner. Next, participants completed a measure of attachment style. Participants were then asked to describe a current health-related goal they hold. Participants were then randomly assigned to one of four conditions (emotional support, instrumental support, capitalization, or control) for the social support priming task. Participants were asked to recall and describe a situation in which their romantic partner engaged in the behavior specified by their condition. Participants were asked to describe the situation, what their romantic partner did to make them feel supported, and how their partner's actions made them feel. The priming task lasted approximately five minutes, and was immediately followed by a manipulation check. Participants then completed

measures of working models of their romantic partner, self-esteem, self-efficacy, and behavioral intentions specific to their self-nominated health goals. Next, participants completed demographic questions. Finally, participants completed a second manipulation check, then were debriefed.

Measures

Experiences in Close Relationships Scale – Short Form

The ECR – Short Form (Wei et al., 2007) is a 12-item measure of adult attachment style, which captures two subscales of attachment: avoidance ($\alpha = .84$) and anxiety ($\alpha = .74$). Items are rated on a scale of 1 (strongly disagree) to 7 (strongly agree), with higher scores on each subscale reflecting either greater anxiety or avoidance.

Working Models of Romantic Partners

Given that no existing questionnaire directly captures these constructs in adults, a series of novel items measuring working models of one's romantic partner as they relate to the safe haven and secure base functions of attachment were developed. Participants were asked to respond to 20 items as they relate to their current romantic partner. Safe haven items included: "My partner will think less of me if I fail to achieve my goals" and "When I make a mistake, my partner typically judges me harshly." Secure base items include: "When I am working toward a goal, my partner and I are in it together" and "My partner will do what they can to help me pursue my goals." Items were rated on a scale of 1 (strongly disagree) to 7 (strongly agree).

An exploratory factor analysis was used to determine the factor structure of these items, prior to testing the hypothesized model. It was expected that the items would

produce a two-factor structure, as ten items were designed to capture the safe haven function of attachment figures, and another ten the secure base function. The scree plot derived from a principal component analysis with direct oblimin rotation suggested a one-factor solution, however, which included factor loadings that ranged from .71-.89. Given that a one-factor solution represented the items quite well, the overall model was revised to include one latent variable reflecting positive working models of romantic partners ($\alpha = .98$), as depicted in Figure 2.

General Self-Efficacy Scale

The General Self-Efficacy Scale (Jerusalem & Schwarzer, 1995) is a 10-item scale that assesses an individual's level of self-efficacy: the belief that one is capable of performing difficult or novel tasks and overcoming challenging or stressful circumstances ($\alpha = .92$). Responses are rated on a 4-point Likert scale ranging from 1 (not true at all) to 4 (exactly true).

Rosenberg Self-Esteem Scale

The Rosenberg Self-Esteem Scale (Rosenberg, 1965) is a 10-item measure of global feelings of self-worth and self-respect ($\alpha = .92$). Responses are rated on a 4-point Likert scale ranging from 1 (strongly agree) to 4 (strongly disagree).

Behavioral Intentions for Health Goals

Nine items were drafted based on the Theory of Planned Behavior (Ajzen, 2002; 2006) to measure behavioral intentions related to participants' self-nominated health goals (two items, $\alpha = .86$), behavioral norms within the context of one's romantic relationship related to the self-nominated goal (two items, $\alpha = .65$), partner approval of

one's health goal (one item), perceived control of one's health behaviors (two items, $\alpha = .67$), and progress made toward the self-nominated goal over the past three months (one item). Items are rated on a scale of 1 to 7, with scale labels varying among items (e.g., likely – unlikely, agree – disagree, true – false).

Manipulation Checks

To assess the effectiveness of the priming task, two manipulation checks were included throughout the study. The first was presented to participants immediately after completion of the priming task. Participants were asked to rate how supported they felt during the recalled experience. Response options ranged from 1 (not at all supported) to 5 (extremely supported). The second manipulation check was presented at the end of the study, and asked participants to recall and select which version of the priming task they completed. Response options included descriptions of each of the target support behaviors, in lay terms.

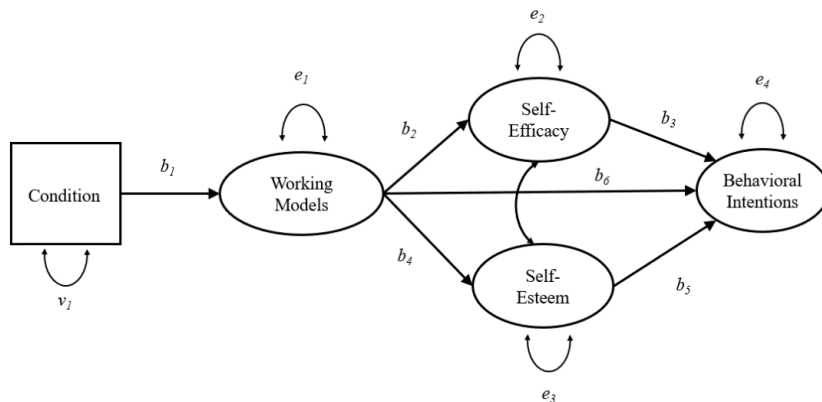


Figure 2: Revised model of mechanisms through which perceived support influences behavioral intentions.

Analytical Strategy

The lavaan package in R was used to examine the proposed path models. Experimental condition was considered a manifest variable. Working models, self-

efficacy, self-esteem, and behavioral intentions were latent variables. Missing data was handled using listwise deletion. The following equations specify the hypothesized significant effects based on the revised theoretical model:

$$\text{WorkingModels}_i = b_1 \cdot \text{Condition}_i + e_{1i}$$

$$\text{SelfEfficacy}_i = b_2 \cdot \text{WorkingModels}_i + e_{2i}$$

$$\text{SelfEsteem}_i = b_4 \cdot \text{WorkingModels}_i + e_{3i}$$

$$\text{BehavInt}_i = b_3 \cdot \text{SelfEfficacy}_i + b_5 \cdot \text{SelfEsteem}_i + e_{4i}$$

The path model tested included these paths, as well as direct paths from condition to self-esteem, self-efficacy, and behavioral intentions, and direct paths from working models to behavioral intentions. Correlations among parallel mediators (self-efficacy and self-esteem) were included in the model. Gender was included as a covariate. Acceptable model fit will be assessed using the following criteria: a TLI and CFI greater than .93 (Hu & Bentler, 1999), a SRMR less than .08 (Hu & Bentler, 1999), and a RMSEA less than .10 (Browne & Cudeck, 1992).

Results

Preliminary Analyses

Descriptive statistics. A full breakdown of descriptive statistics for the overall sample, as well as by experimental condition, can be found in Table 2. Based on criteria outlined by Curran and colleagues (1996), the variables of interest meet normality assumptions.

Manipulation checks. Immediately after completing their assigned prime, participants were asked to report how supported they felt during the recalled experience.

There was a significant main effect of condition ($F(3, 853) = 259.14, p < .001$), with those in the emotional support ($M = 4.66, p < .001$), instrumental support ($M = 4.58, p < .001$), and capitalization ($M = 4.69, p < .001$) conditions having reported feeling significantly more supported than those in the physical presence control ($M = 2.87$) condition. However, the three experimental support-based conditions did not significantly differ from one another (all $ps > .05$). In the second manipulation check, participants were asked to select which version of the priming task they completed; 75.7% of participants identified their condition correctly. Across conditions, emotional support was the most commonly selected, such that 38.6% of participants selected emotional support as their assigned condition, despite only 27.0% of participants in the final sample having been assigned to that condition. Participants who incorrectly reported their condition were not excluded from analyses, with models described below approached as intent-to-treat analyses.

Hypothesized Model Fit

Main study hypotheses were tested using a series of three models. A full summary of these models can be found in Table 4 and Figures 3-6. In the first model, the effects of the emotional support prime were compared to those of the control prime. The χ^2 test of model fit indicated that the hypothesized model produced a covariance matrix that was not significantly different than the sample covariance matrix, $\chi^2(1) = 0.72, p > .05$. This was supported by the other model fit indices TLI = 1.01; CFI = 1.00; SRMR = 0.01; RMSEA = 0.000 [.000, .085]. Considering the combination of fit indices, the hypothesized model represented the data quite well. Contrary to hypotheses, experimental

condition did not significantly predict working models of romantic partners (.03, $p > .05$). As predicted, working models of romantic partners did significantly predict self-esteem (.17, $p < .001$) and self-efficacy (.15, $p < .001$). As predicted, working models of romantic partners (.19, $p < .001$), self-esteem (.19, $p < .01$) and self-efficacy (.43, $p < .001$) significantly predicted behavioral intentions.

In the second model, the effects of the instrumental support prime were compared to those of the control prime. The χ^2 test of model fit indicated that the second hypothesized model produced a covariance matrix that was not significantly different than the sample covariance matrix, $\chi^2(1) = 0.11, p > .05$, and this was supported by the other model fit indices: TLI = 1.02; CFI = 1.00; SRMR = 0.002; RMSEA = 0.000 [.000, .063]. Contrary to hypotheses, experimental condition again did not significantly predict working models of romantic partners (.07, $p > .05$). Working models of romantic partners did significantly predict self-esteem (.17, $p < .001$) and self-efficacy (.15, $p < .001$), as predicted. Moreover, working models of romantic partners (.19, $p < .001$), self-esteem (.19, $p < .01$) and self-efficacy (.43, $p < .001$) again significantly predicted behavioral intentions.

In the third model, the effects of the capitalization prime were compared to those of the control prime. The χ^2 test of model fit again indicated that the hypothesized model produced a covariance matrix that was not significantly different than the sample covariance matrix, $\chi^2(1) = 0.00, p > .05$, and this was supported by the other model fit indices: TLI = 1.02; CFI = 1.00; SRMR = 0.000; RMSEA = 0.000 [.000, .000]. Experimental condition once again did not significantly predict working models of

romantic partners (.10, $p > .05$). Working models of romantic partners did significantly predict self-esteem (.17, $p < .001$) and self-efficacy (.15, $p < .001$). Working models of romantic partners (.19, $p < .001$), self-esteem (.19, $p < .01$) and self-efficacy (.43, $p < .001$) significantly predicted behavioral intentions.

Given that the three social support conditions did not significantly differ from one another in the amount of support felt in response to the primes, a fourth model was tested to compare the effects of the three social support conditions collapsed together to the control group. The χ^2 test of model fit indicated that the model produced a covariance matrix that was not significantly different than the sample covariance matrix, $\chi^2(1) = 0.23, p > .05$, and this was supported by the other model fit indices: TLI = 1.02; CFI = 1.00; SRMR = 0.004; RMSEA = 0.000 [.000, .071]. Experimental condition once again did not significantly predict working models of romantic partners (.06, $p > .05$). Working models of romantic partners did significantly predict self-esteem (.17, $p < .001$) and self-efficacy (.15, $p < .001$). Working models of romantic partners (.19, $p < .001$), self-esteem (.19, $p < .01$) and self-efficacy (.43, $p < .001$) significantly predicted behavioral intentions.

Exploratory Analyses

Given that experimental condition did not significantly directly predict attachment-specific working models of romantic partners, but preliminary analyses indicated that the support-based conditions did differ from the control condition in the extent to which participants reported feeling supported, four models that included felt support as a mediator of the relationship between experimental condition and working

models were also tested, as depicted in Figure 7. A full summary of these models can be found in Table 5 and Figures 8-11.

In the first model, the effects of the emotional support prime were again compared to those of the control prime. The χ^2 test of model fit indicated that the exploratory model produced a covariance matrix that was not significantly different than the sample covariance matrix, $\chi^2(1) = 6.15, p > .05$, and this was supported by the other model fit indices: TLI = 0.99; CFI = 1.00; SRMR = 0.015; RMSEA = 0.025 [.000, .062]. As predicted, condition significantly predicted how supported individuals felt (.88, $p < .001$), and felt support (.45, $p < .001$) significantly predicted working models of romantic partners. In addition, a non-hypothesized negative direct effect from condition to working models was also significant, such that the emotional support condition resulted in more *negative* working models of the partner after controlling for the pathway through felt support, as compared to the control condition (-0.38, $p < .001$). Working models of romantic partners did significantly predict self-esteem (.17, $p < .001$) and self-efficacy (.15, $p < .001$). Working models of romantic partners (.19, $p < .001$), self-esteem (.19, $p < .01$) and self-efficacy (.43, $p < .001$) significantly predicted behavioral intentions.

In the second model, the effects of the instrumental support prime were compared to those of the control prime. The χ^2 test of model fit indicated that the exploratory model produced a covariance matrix that was significantly different than the sample covariance matrix, $\chi^2(1) = 9.51, p < .05$, though other model fit indices suggested the model fit well: TLI = 0.97; CFI = 1.00; SRMR = 0.019; RMSEA = 0.040 [.000, .074]. As predicted, condition significantly predicted how supported individuals felt (.87, $p < .001$), and felt

support (.42, $p < .001$) significantly predicted working models of romantic partners. A non-hypothesized negative direct effect from condition to working models was also significant in this model, such that the instrumental support condition resulted in more negative working models after controlling for the pathway through felt support, as compared to the control condition ($-0.29, p < .001$). Working models of romantic partners did significantly predict self-esteem (.17, $p < .001$) and self-efficacy (.15, $p < .001$). Working models of romantic partners (.19, $p < .001$), self-esteem (.19, $p < .01$) and self-efficacy (.43, $p < .001$) significantly predicted behavioral intentions.

In the third model, the effects of the capitalization prime were compared to those of the control prime. The χ^2 test of model fit indicated that the exploratory model produced a covariance matrix that was not significantly different than the sample covariance matrix, $\chi^2(1) = 6.83, p > .05$, and this was supported by the other model fit indices: TLI = 0.99; CFI = 1.00; SRMR = 0.013; RMSEA = 0.029 [.000, .065]. As predicted, condition significantly predicted how supported individuals felt (.93, $p < .001$), and felt support (.42, $p < .001$) significantly predicted working models of romantic partners. A non-hypothesized negative direct effect from condition to working models was also significant in this model, such that the capitalization condition resulted in more negative working models after controlling for the pathway through felt support, as compared to the control condition ($-.30, p < .001$). Working models of romantic partners did significantly predict self-esteem (.17, $p < .001$) and self-efficacy (.15, $p < .001$). Working models of romantic partners (.19, $p < .001$), self-esteem (.19, $p < .01$) and self-efficacy (.43, $p < .001$) significantly predicted behavioral intentions.

In the fourth model, the effects of the three social support conditions collapsed together were compared to those of the control group. The χ^2 test of model fit indicated that the exploratory model produced a covariance matrix that was not significantly different than the sample covariance matrix, $\chi^2(1) = 8.71, p > .05$, and this was supported by the other model fit indices: TLI = 0.98; CFI = 1.00; SRMR = 0.015; RMSEA = 0.037 [.000, .071]. As predicted, condition significantly predicted how supported individuals felt (.88, $p < .001$), and felt support (.54, $p < .001$) significantly predicted working models of romantic partners. A non-hypothesized negative direct effect from condition to working models was also significant in this model, such that the social support conditions resulted in more negative working models after controlling for the pathway through felt support, as compared to the control condition (-0.41, $p < .001$). Working models of romantic partners did significantly predict self-esteem (.17, $p < .001$) and self-efficacy (.15, $p < .001$). Working models of romantic partners (.19, $p < .001$), self-esteem (.19, $p < .01$) and self-efficacy (.43, $p < .001$) significantly predicted behavioral intentions.

Discussion

The current study sought to ask whether priming memories of receiving specific types of social support—emotional support, instrumental support, and capitalization—from a romantic partner would result in increased behavioral intentions to work toward personally meaningful, health-relevant goals, as compared to an active control. Working models of romantic partners, as well as self-esteem and self-efficacy, were examined as potential mediators of the relationship between primed support and health-related behavioral intentions. Contrary to hypotheses, the direct effect of social support priming

on working models of romantic partners was not significant. However, exploratory analyses revealed that primed social support did significantly predict how supported individuals felt, which in turn predicted working models of romantic partners in the expected direction. Moreover, working models of romantic partners consistently predicted both self-efficacy and self-esteem, and these beliefs about the self and one's romantic partner also positively predicted behavioral intentions. Overall, the current study adds to a sparse literature demonstrating mechanisms through which social support may function to produce beneficial outcomes downstream.

The current study demonstrates that perceptions of social support can be effectively manipulated through priming tasks. Though this alone may not be surprising, manipulating perceptions of social support influenced working models of romantic partners. Previous work has found not only that priming personal memories involving interpersonal closeness and interdependence increased feelings of security immediately following the prime (Gilath et al., 2022), but also that repeated priming had lasting effects over the long term (Hudson & Fraley, 2018). Likewise, interventions that highlight the importance of savoring and/or recalling social support experiences from a romantic partner may prove useful in improving not only immediate outcomes, such as intentions to engage in goal-relevant behaviors, but longer-term outcomes, including actual goal-directed behavior, behavior change attempts, and maintenance of newly adopted behaviors. Moreover, priming memories of social support from one's romantic partner may also influence short-term and long-term relationship-specific outcomes, such as satisfaction and maintenance.

The current study employed a novel approach to manipulating social support, allowing for causal evidence of the effects of social support on previously hypothesized mechanisms of self-esteem and self-efficacy. Importantly, working models of romantic partners mediated the effect of primed social support on these working models of the self. The finding that individuals' working models of their romantic partners positively predicted self-esteem aligns with past work demonstrating that self-esteem is strongly influenced by cues of evaluation by close others (Leary & Baumeister, 2000; Leary, 2005; Reitz et al., 2016). An individual's expectation that their romantic partner will engage in supportive, nurturing behaviors likely serves as a signal that their partner is invested in and accepting of them, which in turn, bolsters self-esteem. Though less work has directly explored the links between relationship processes and self-efficacy, theoretical definitions highlight social influence as a key source of self-efficacy (Bandura, 1997). The current study provides experimental support for these claims, and points to specific aspects of close social relationships as important predictors of one's perceived ability to work toward goals.

In line with past findings and theoretical models of social support, both self-esteem and self-efficacy had significant, positive effects on behavioral intentions. Most past work exploring self-esteem as a predictor of health behavior outcomes have been limited to either clinical populations or undergraduate students (DuBois et al., 2002; Goodwin et al., 2004; Kleiman & Riskand, 2013; Schroevers et al., 2003; Symister & Friend, 2003). The current study begins to address this important gap in the literature, demonstrating that self-esteem influences intentions to work toward health-relevant goals

in a sample more diverse in age and race/ethnicity. Though self-efficacy is a widely studied predictor of health behaviors and behavior change, the current findings not only replicate this effect, but point to novel avenues of intervention to boost self-efficacy.

Interestingly, when felt support was accounted for, there was a significant, negative direct effect of experimental priming of personal experiences of receiving support on working models of romantic partners. Though this effect was not hypothesized, it may underscore that social support exchanges can be a mixed bag in terms of subjective experience. One possibility is that the negative effects of primed social support on working models could be explained by context, as support experiences often occur under stressful circumstances. Given that past work has demonstrated that incidental negative emotion can influence judgments (Lerner & Keltner, 2010), heightened stress and/or negative affect evoked in the context of support experiences may negatively influence evaluations of one's romantic partner. Accounting for this aspect of social support in future work would provide a clearer picture of both the positive and negative aspects of social support.

Alternatively, the negative direct effect of primed support on working models may highlight that support experiences can pose threats to one's relationships. Seeking out and receiving support (especially emotional support) is an inherently vulnerable interpersonal experience. An individual must admit to their romantic partner that (1) things have gone wrong and (2) they are incapable of dealing with the problem, or their associated distress, on their own. This may cause an individual to be concerned that their romantic partner will view them as weak, or even a burden. In this way, self-disclosure as

a means of procuring social support may be risky for working models. Lower ratings on the working models measure may not necessarily reflect expectations about partner behavior, but rather concerns about needing or wanting one's partner to engage in those behaviors in the first place.

Moreover, these negative effects may be amplified by certain individual differences, such as attachment style. Existing research has demonstrated that attachment style does moderate individuals' social support experiences, influencing support-seeking behaviors as well as biasing support preferences and subjective interpretations of support that is received. Past work has shown that those who are avoidant or anxious are more likely to report insufficient support availability (Brock & Lawrence, 2014; Martin et al., 2010; McClure et al., 2014). Avoidant individuals have been shown to display overall less frequent and less effective support-seeking behaviors (Davila & Kashy, 2009; Don & Hammond, 2017; Feeney et al., 2003), while those who are high in attachment anxiety experience an amplification of their dependence on others in times of stress (Mikulincer & Shaver, 2003). Avoidant individuals prefer social support that does not emphasize emotional vulnerability, intimacy, or dependence, while those who are anxiously attached prefer support behaviors that focus heavily on displays of love, commitment, and expression of future support availability (Collins & Feeney, 2000). Together, these interpersonal expectations and preferences evoked by attachment style suggest that those high in avoidance or anxiety may be particularly vulnerable to perceiving support exchanges as threatening to their close relationships.

Sociocultural factors, such as individualism/collectivism, may also moderate the effects of social support. In certain cultures, such as the U.S., that are characterized by hyper-individualism, social support experiences may compromise one's sense of independence, resulting in heightened negative effects of social support. In contrast, the effects of social support should be primarily positive in more collectivist contexts, where there is a relative absence of ego threat. In line with these hypotheses, Uchida and colleagues (2008) found that cross-sectionally, the relationship between perceived emotional support and well-being was stronger for Filipinos and Japanese than for Americans. Relatedly, Campos and colleagues (2014) found that for Latina Americans—whose sociocultural context heavily values both self-sufficiency and accessible social support—the negative affective, physiological, and social effects of neuroticism were blunted. These findings highlight that future work examining social support should consider culture as a possible moderator of both the positive and negative effects of support behaviors, including within romantic relationships.

Limitations

Though the current study adds to our understanding of social support and points to important avenues for future work, there are several notable limitations to consider. Most importantly, working models of the partner were assessed using a novel self-report measure. Though this measure was pilot tested, the broader findings of the current study should be interpreted with caution until further validation studies are conducted. Specifically, better understanding how this measure relates to other measures of perceived support, relationship satisfaction, and relationship quality, is a crucial next

step. Moreover, the present study relies entirely on self-report of goal-directed behavior, the key outcome of interest. Future work should look to explore if priming social support influences actual goal-directed behavior, rather than intention alone. Finally, the priming task used to manipulate social support was relatively short. Though actual support experiences may compound in daily life to have even stronger effects on downstream outcomes, future work examining how these processes unfold in response to actual support behaviors (either in the lab or in daily life) would contribute greatly to our understanding of social support.

Conclusion

Perceived social support is a widely studied predictor of health and well-being outcomes. The current study adds to a growing literature documenting the mechanisms through which perceived social support facilitates these outcomes, with important implications for social support-based efforts to promote both physical and psychological health. Moreover, the current study highlights attachment-related processes that unfold as a consequence of support experiences as an important avenue for future exploration.

Table 1*Demographic Breakdown*

	Final Sample	Excluded Participants
<i>Gender</i>		
Male	47.6%	47.7%
Female	51.3%	48.3%
Non-binary/Third gender	0.7%	.7%
<i>Race/Ethnicity</i>		
White	52.6%	52.3%
Black/African American	26.1%	26.5%
Hispanic/Latino/a/x	9.0%	5.3%
East Asian	8.9%	9.3%
South Asian	3.4%	1.3%
Southeast Asian	4.7%	1.3%
Middle Eastern	0.4%	0.7%
Native Hawaiian/Pacific Islander	1.3%	0.0%
Native American/Indigenous	2.7%	4.0%
Other	1.8%	0.7%
	<i>M (SD)</i>	
<i>Age</i>	39.36 (12.36)	39.37 (10.36)
<i>Relationship Length (years)</i>	10.14 (10.20)	9.83 (9.72)

Table 2*Descriptive Statistics of Key Variables by Group*

	α	Skew	Kurtosis	Overall	Emo. Sup.	Inst. Sup.	Capit.	Control	Excluded
Anxiety (7 pt. scale)	.74	0.16 (.08)	-0.37 (.17)	3.50 (1.19)	3.46 (1.22)	3.49 (1.16)	3.50 (1.21)	3.55 (1.18)	3.84 (1.29)
Avoidance (7 pt.)	.84	0.67 (.08)	-0.001 (.17)	2.37 (1.04)	2.35 (1.05)	2.46 (1.05)	2.33 (1.03)	2.35 (1.02)	2.97 (1.07)
How Supported (5 pt.)	N/A	-1.40 (.08)	1.10 (.17)	4.19 (1.13)	4.66 (.59)	4.58 (.62)	4.69 (.55)	2.87 (1.26)	0.97 (1.35)
Safe Haven/Secure Base Working Models (7 pt.)	.98	-1.25 (.08)	1.63 (.17)	5.79 (1.07)	5.76 (1.11)	5.83 (.98)	5.88 (1.03)	5.70 (1.13)	5.41 (1.12)
Self-Efficacy (4 pt.)	.92	-0.45 (.08)	.62 (.17)	3.22 (.50)	3.25 (.48)	3.20 (.48)	3.25 (.52)	3.19 (.53)	3.10 (.57)
Self-Esteem (4 pt.)	.92	-0.62 (.08)	-0.06 (.17)	3.11 (.65)	3.12 (.63)	3.06 (.64)	3.19 (.63)	3.07 (.71)	2.93 (.57)
Behavioral Intentions (7 pt.)	.86	-0.88 (.08)	0.20 (.17)	6.10 (.95)	6.11 (.94)	6.08 (.95)	6.14 (.98)	6.09 (.94)	5.67 (1.14)
Health Goal Partner Approval (7 pt.)	N/A	-1.87 (.08)	3.79 (.17)	6.35 (1.03)	6.34 (1.11)	6.32 (1.11)	6.43 (.95)	6.32 (1.02)	5.75 (1.23)
Health Goal Partner Norms (7 pt.)	.65	-0.57 (.08)	-0.08 (.17)	5.01 (1.40)	5.12 (1.34)	5.03 (1.43)	5.12 (1.41)	4.78 (1.42)	5.01 (1.39)
Health Goal Efficacy (7 pt.)	.67	-1.22 (.08)	1.98 (.17)	6.10 (.92)	6.10 (.92)	6.08 (.95)	6.21 (.92)	6.04 (.90)	5.68 (1.17)
Health Goal Progress (7 pt.)	N/A	-0.98 (.08)	0.37 (.17)	5.42 (1.60)	5.33 (1.67)	5.53 (1.54)	5.65 (1.48)	5.22 (1.64)	5.34 (1.54)

Table 3*Correlations Among Key Variables*

	1	2	3	4	5	6	7	8	9	10
1. Anxiety										
2. Avoidance	.37**									
3. How Supported	-.12**	-.23**								
4. Safe Haven/Secure Base	-.29**	-.63**	.34**							
5. Self-Efficacy	-.31**	-.28**	.18**	.33**						
6. Self-Esteem	-.44**	-.37**	.14**	.28**	.61**					
7. Behavioral Intentions	-.23**	-.36**	.16**	.32**	.37**	.33**				
8. Health Goal Partner Approval	-.20**	-.42**	.20**	.53**	.32**	.24**	.47**			
9. Health Goal Partner Norms	-.11**	-.27**	.23**	.44**	.24**	.22**	.28**	.34**		
10. Health Goal Efficacy	-.18**	-.31**	.16**	.32**	.51**	.44**	.61**	.45**	.30**	
11. Health Goal Progress	-.14**	-.18**	.14**	.22**	.31**	.33**	.49**	.19**	.28**	.50**

** denotes $p < .001$

Table 4

Summary of Hypothesized Models Without Manipulation Check

Emotional Support			Instrumental Support			Capitalization			Collapsed		
Path	Estimate	<i>p</i> -value	Path	Estimate	<i>p</i> -value	Path	Estimate	<i>p</i> -value	Path	Estimate	<i>p</i> -value
<i>b</i> ₁	.03	.60	<i>b</i> ₁	.07	.18	<i>b</i> ₁	.10	.07	<i>b</i> ₁	.06	.14
<i>b</i> ₂	.15	< .001	<i>b</i> ₂	.15	< .001	<i>b</i> ₂	.15	< .001	<i>b</i> ₂	.15	< .001
<i>b</i> ₃	.43	< .001	<i>b</i> ₃	.43	< .001	<i>b</i> ₃	.43	< .001	<i>b</i> ₃	.43	< .001
<i>b</i> ₄	.17	< .001	<i>b</i> ₄	.17	< .001	<i>b</i> ₄	.17	< .001	<i>b</i> ₄	.17	< .001
<i>b</i> ₅	.19	< .01	<i>b</i> ₅	.19	< .01	<i>b</i> ₅	.19	< .01	<i>b</i> ₅	.19	< .01
<i>b</i> ₆	.19	< .001	<i>b</i> ₆	.19	< .001	<i>b</i> ₆	.19	< .001	<i>b</i> ₆	.19	< .001

Table 5*Summary of Models With Manipulation Check Included as a Mediator*

Emotional Support			Instrumental Support			Capitalization			Collapsed		
Path	Estimate	<i>p</i> -value	Path	Estimate	<i>p</i> -value	Path	Estimate	<i>p</i> -value	Path	Estimate	<i>p</i> -value
<i>b</i> ₁	.88	< .001	<i>b</i> ₁	.87	< .001	<i>b</i> ₁	.93	< .001	<i>b</i> ₁	.88	< .001
<i>b</i> ₂	.45	< .001	<i>b</i> ₂	.42	< .001	<i>b</i> ₂	.42	< .001	<i>b</i> ₂	.54	< .001
<i>b</i> ₃	-.38	< .001	<i>b</i> ₃	-.29	< .001	<i>b</i> ₃	-.30	< .001	<i>b</i> ₃	-.41	< .001
<i>b</i> ₄	.15	< .001	<i>b</i> ₄	.15	< .001	<i>b</i> ₄	.15	< .001	<i>b</i> ₄	.15	< .001
<i>b</i> ₅	.43	< .001	<i>b</i> ₅	.43	< .001	<i>b</i> ₅	.43	< .001	<i>b</i> ₅	.43	< .001
<i>b</i> ₆	.17	< .001	<i>b</i> ₆	.17	< .001	<i>b</i> ₆	.17	< .001	<i>b</i> ₆	.17	< .001
<i>b</i> ₇	.19	< .01	<i>b</i> ₇	.19	< .01	<i>b</i> ₇	.19	< .01	<i>b</i> ₇	.19	< .01
<i>b</i> ₈	.19	< .001	<i>b</i> ₈	.19	< .001	<i>b</i> ₈	.19	< .001	<i>b</i> ₈	.19	< .001

Figure 3

Summary of Model Comparing Emotional Support Condition to Control

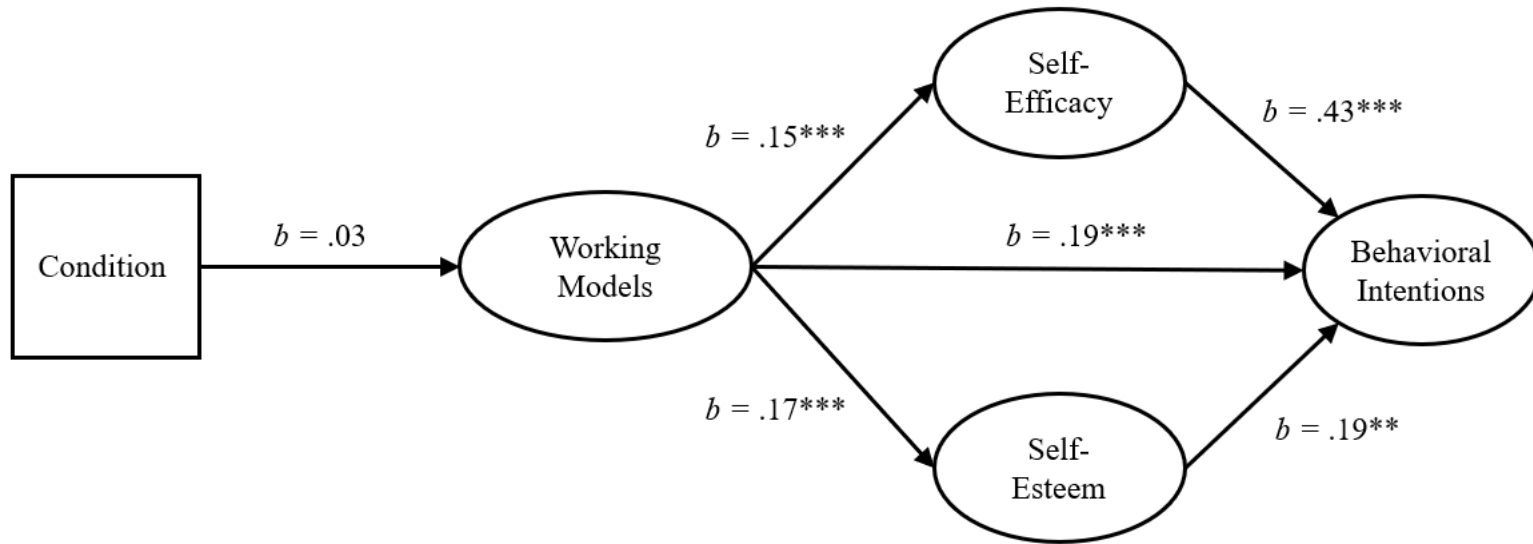


Figure 4

Summary of Model Comparing Instrumental Support Condition to Control

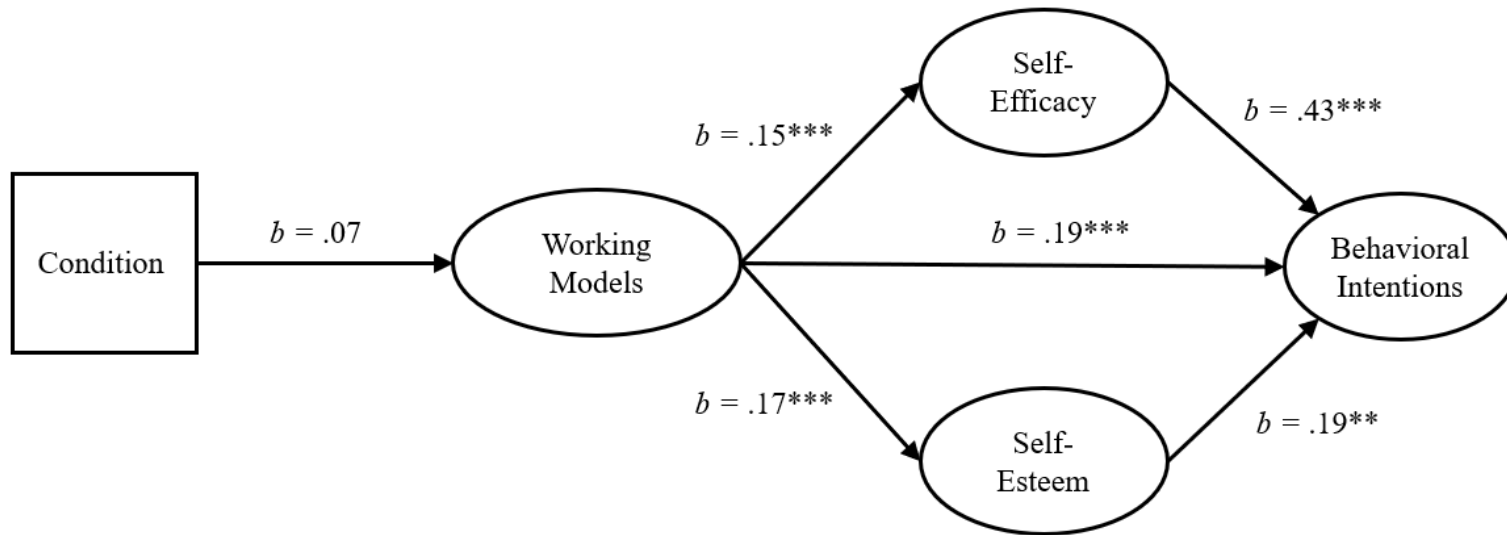


Figure 5

Summary of Model Comparing Capitalization Condition to Control

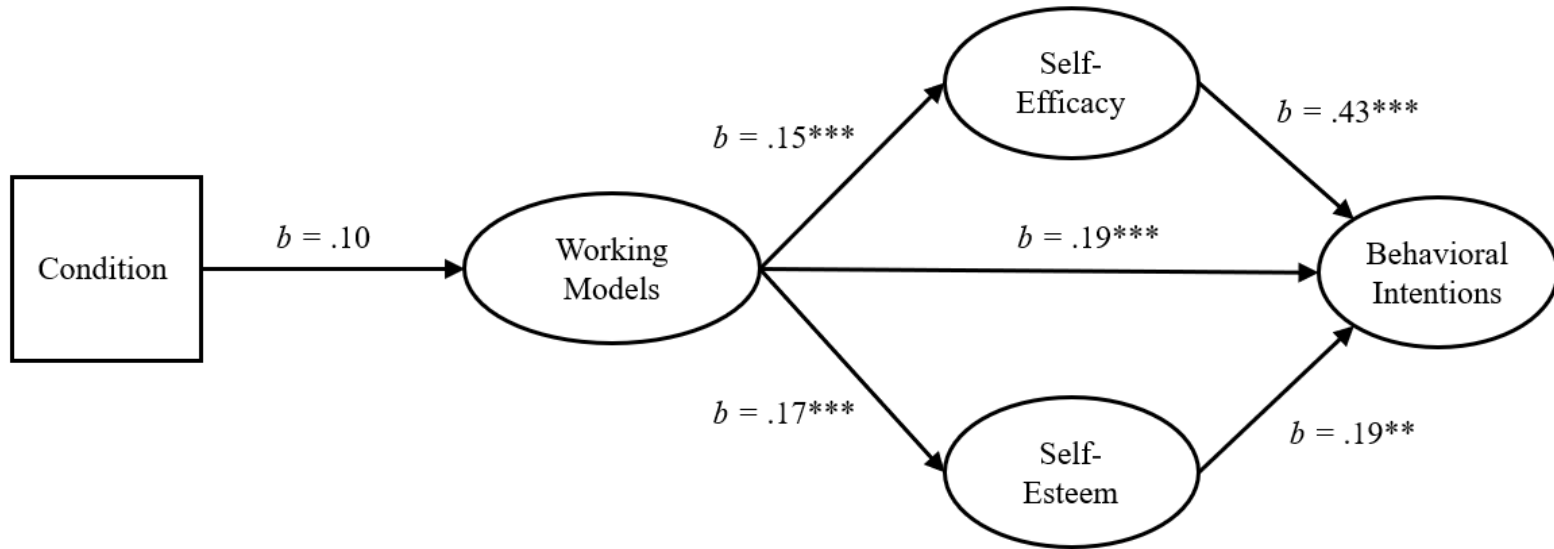


Figure 6

Summary of Model Comparing All Support Conditions (Collapsed) to Control

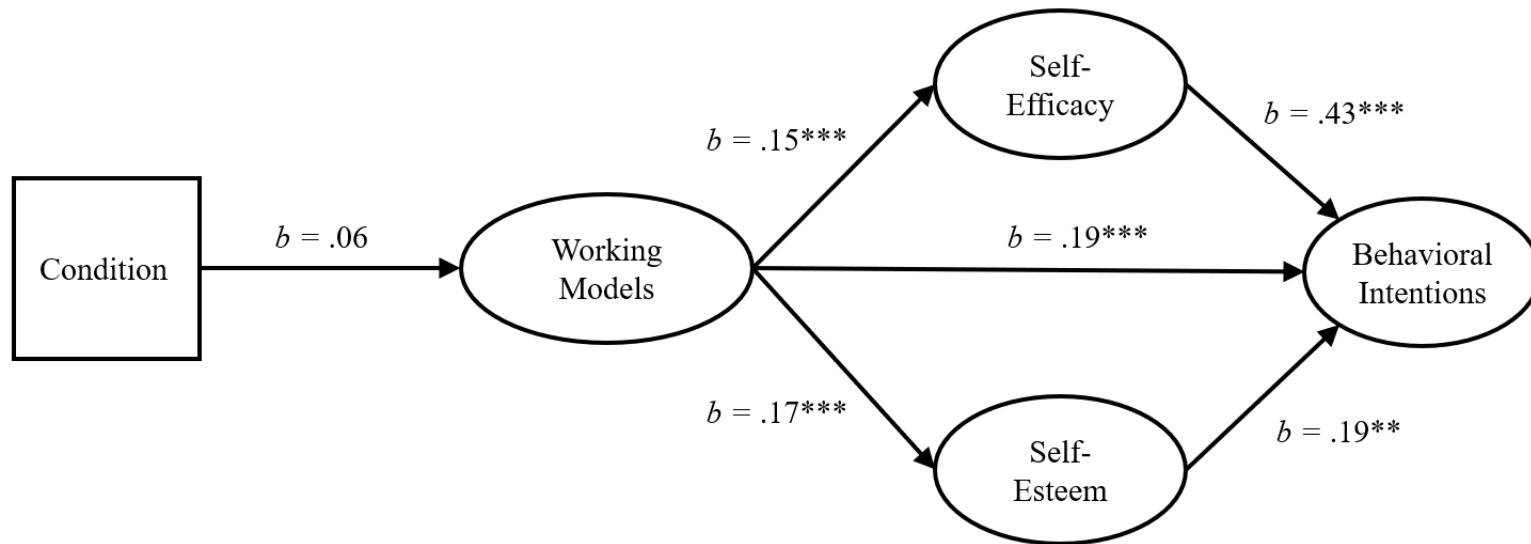


Figure 7

Exploratory Model of Mechanisms Through Which Perceived Support Influences Behavioral Intentions

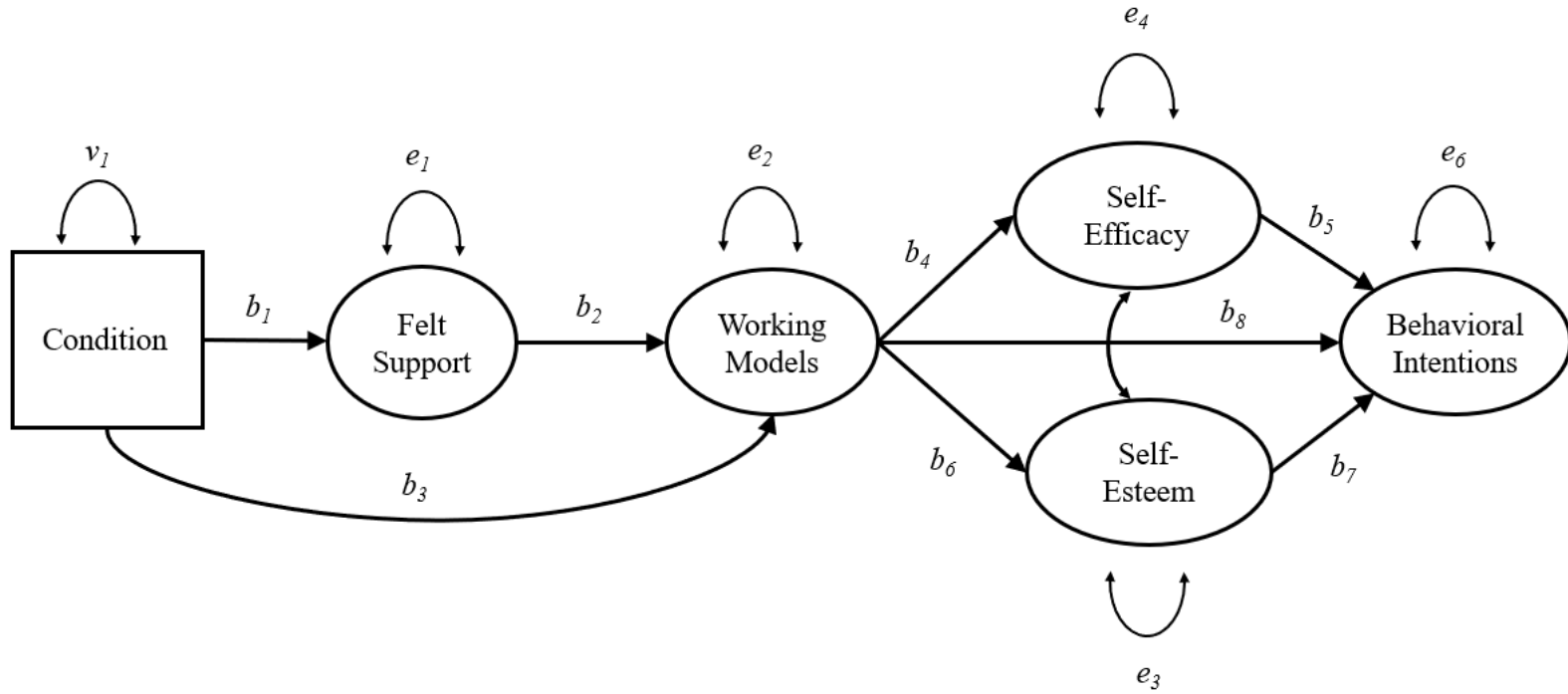


Figure 8

Summary of Exploratory Model Comparing Emotional Support Condition to Control, With Manipulation Check Included as an Additional Mediator

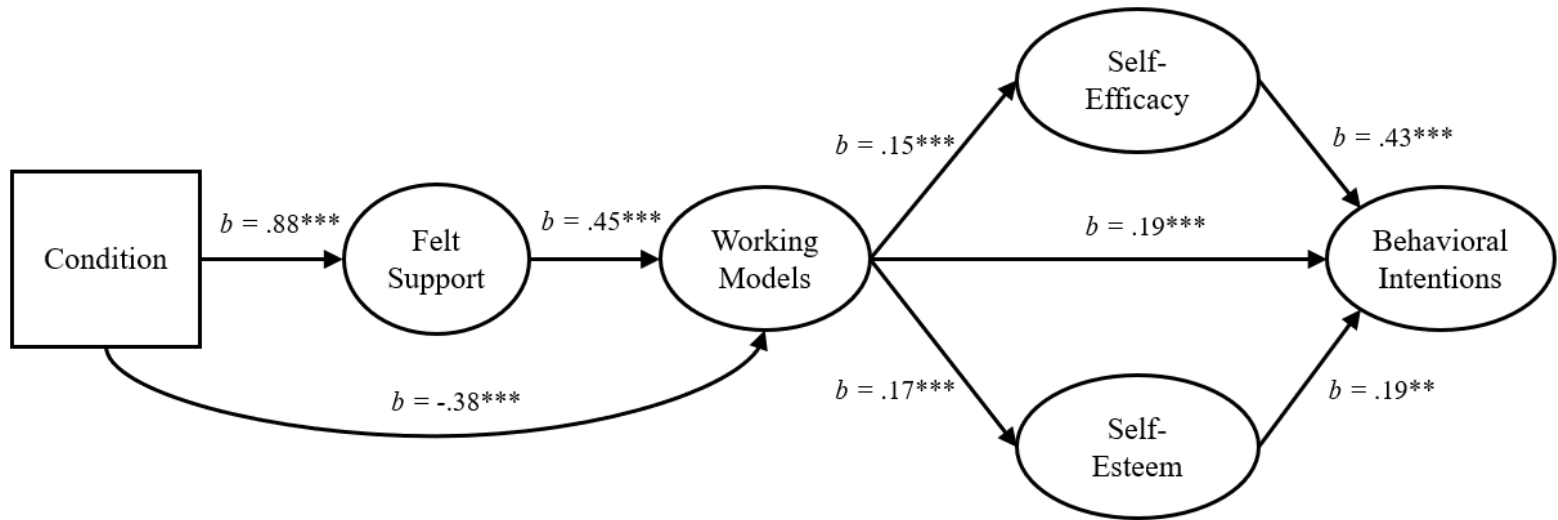


Figure 9

Summary of Model Comparing Instrumental Support Condition to Control, With Manipulation Check Included as an Additional Mediator

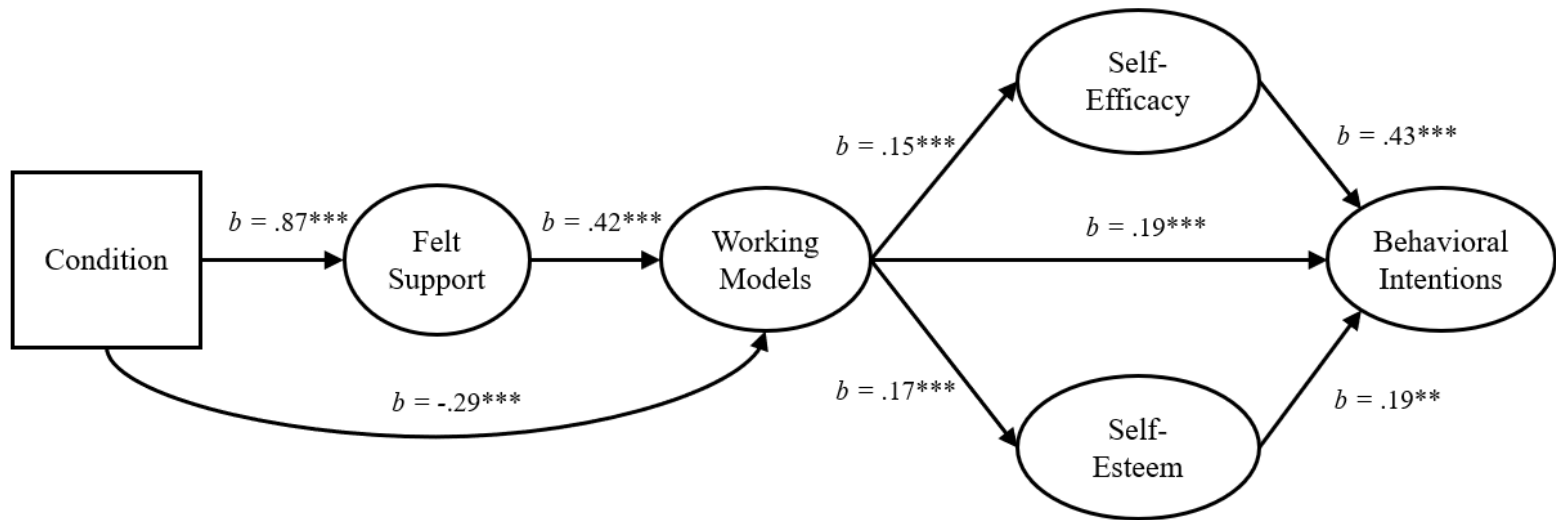


Figure 10

Summary of Model Comparing Capitalization Condition to Control, With Manipulation Check Included as an Additional Mediator

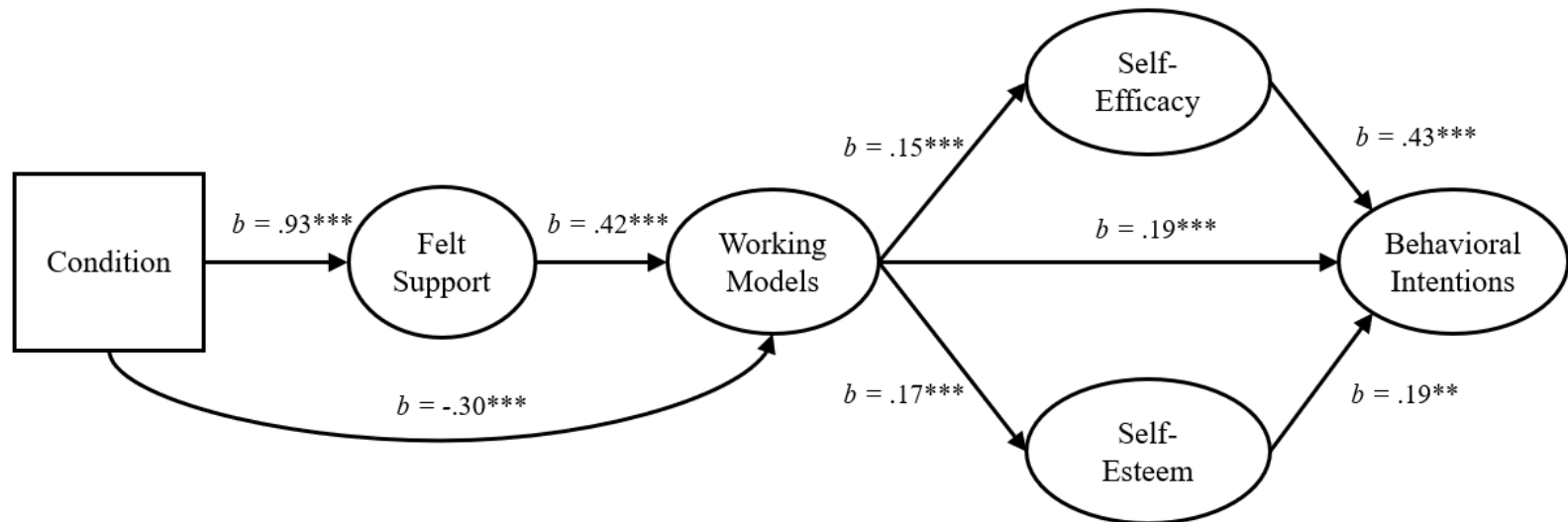
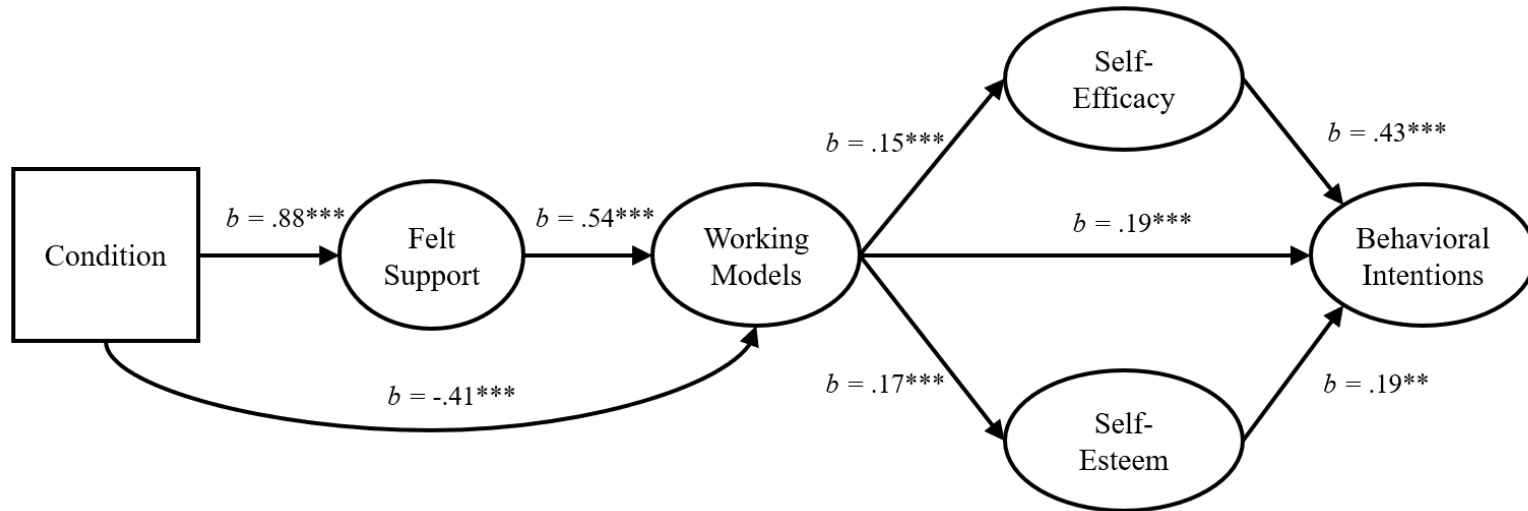


Figure 11

Summary of Model Comparing All Support Conditions (Collapsed) to Control, With Manipulation Check Included as Mediator



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