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Social Support, Social Control, and Health Behavior Change in Spouses

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Our work on support processes in intimate relationships has focused on how partners in committed relationships help one another contend with personal difficulties, and how partners elicit and provide support in their day-to-day interactions. We are particularly interested in how these support skills relate to marital outcomes (Pasch & Bradbury, 1998; Pasch, Harris, Sullivan, & Bradbury, 2004; Sullivan, Pasch, Eldridge, & Bradbury, 1998) and how they relate to behavior change in spouses (Sullivan, Pasch, Johnson, & Bradbury, 2006), especially health behavior changes. In this chapter, we review research examining the effects of social support and social control on spouses' health behaviors, propose a theory to account for discrepancies in these findings, and report initial data examining the usefulness of this theory in understanding the relationship between social support, social control, and partner health behavior.

Research examining social relationships and health reveals a strong and consistent link between marriage and physical health. Compared to individuals who are not married, married individuals live longer and are less likely to experience a host of serious health problems (for reviews see Burman & Margolin, 1992 and Kiecolt-Glaser & Newton, 2001). The effect of marriage on health is multidimensional, including a variety of physiological and behavioral mechanisms (Cohen, 1988; Umberson, 1987). Behaviorally, one important mechanism through which marriage influences health is through the promotion of health-enhancing behaviors and the inhibition of health-compromising behaviors. Health behaviors are affected by spouses through social support (helping spouses achieve or maintain health through emotional and instrumental support) and social control (deliberate attempts to influence partners health behaviors).

SOCIAL SUPPORT AND HEALTH BEHAVIOR

The literature examining social support and health behavior in spouses is rooted in studies demonstrating that the presence and quality of social support are significant predictors of mortality risk and well-being (Cohen, Gottlieb, & Underwood, 2000; Cohen & Wills, 1985; House, Landis, & Umberson, 1988). Subsequent studies investigating social support and health among married couples have focused primarily on couples dealing with serious or chronic illnesses, a useful context for capturing the practical and emotional support spouses provide to affect their partners health. For example, many studies have evaluated whether social support would increase patient adherence to medical regimens prescribed by physicians following an illness. In a recent meta-analysis of 122 studies examining the relationship between structural and functional support and patient adherence, DiMatteo (2004) found that, across studies employing a general measure of social support, the odds of adherence are 2.35 times higher among patients with greater levels of social support. Among studies differentially assessing practical and emotional support, the odds of adherence were 3.6 times higher for patients receiving practical support (e.g., assistance, reminders, and support for a specific behavior) and 1.83 times higher for patients receiving emotional support (e.g., nurturance) compared to patients without these types of support. In another review of 29 studies examining the relationship between social support and chronic illness self-management, Gallant (2003) concluded that there is a modest positive relationship between social support and self-management across studies but also that social support has negative effects on self-management at times.

In an effort to increase social support for patients and to optimize the benefits of social support, spouses and other close family members have been invited to participate in psychosocial interventions designed to maximize patient outcomes. Overall, the effect of family involvement in these interventions appears to be mixed and modestly positive. In their meta-analytic review of 70 randomized studies, Martire and her colleagues found that the inclusion of spouses in the intervention resulted in decreases in depression, and family involvement resulted in decreases in mortality (Martire, Lustig, Schulz, Miller, & Helgeson, 2004).

Together, these findings provide some evidence that spouses positively influence health behavior by providing social support to their ill partners. A second line of inquiry complements and extends these findings by widening the participant focus to include community samples and by examining the distinct although related and overlapping construct: social control.

SOCIAL CONTROL

Umberson (1987) first proposed applying the concept of social control to better understand spousal influence on health behavior. Drawing from a wider literature on social control, she proposed that spouses' health behaviors would be controlled indirectly through an internal sense of obligation to remain healthy for spouses and children, and directly through spousal attempts to regulate partners health behavior. Using two large national samples, Umberson found evidence that being married and having children in the home had a deterrent effect on health-compromising behaviors (Umberson, 1987) and that exposure to social control predicted increases in health-promoting behaviors (i.e., sleep and physical activity) and decreases in health-compromising behaviors (i.e., cigarette smoking) 3 years later in married individuals (Umberson, 1992).

In another seminal study on social control and health behaviors, Lewis and Rook (1999) asked a random community sample of 242 individuals to report on a social network member, 73% of whom were spouses. Among the married participants, they found evidence supporting a dual-effects hypothesis of social control. That is, social control was found to be associated with (a) a decrease in health-compromising behaviors and an increase in health-promoting behaviors, and (b) an increase in psychological distress, including feelings of irritation, hostility, sadness, and guilt. Lewis and Rook also reported evidence that the effect of social control on health behavior varied based on the specific tactics used. Negative social control, involving tactics such as guilt-induction and pressuring, was not associated with health behavior change but was associated with higher levels of psychological distress. Positive social control, involving tactics such as reinforcing behavior change and identifying models of behavior change, was associated with health behavior change and had a weaker association with psychological distress, compared to negative social control tactics.

Additional cross-sectional studies using community samples provide some confirmation of these findings. Lewis and her colleagues conducted separate telephone interviews of spouses in which they were each asked to report on two current or recent situations, one in which the participant was trying to influence the health behavior of her or his partner and one in which the participant's partner was trying to influence the health behavior of herself or himself (Lewis, Butterfield, Darbes, & Johnston-Brooks, 2004; see also Lewis & Butterfield, 2007). Researchers distinguished six subtypes of social control tactics: positive tactics, which involved persuasion, logic, modeling, and positive reinforcement; negative tactics, which involved the expression

of or attempts to induce negative emotions (e.g., disapproval and guilt); direct tactics, which involved addressing the issue candidly and openly (e.g., discussion); indirect tactics, which involved roundabout attempts (e.g., dropping hints); bilateral tactics, which involved give and take between spouses (e.g., bargaining); and unilateral tactics, which involved one-sided attempts to get their spouses to change (e.g., withdrawing affection). Wives' use of positive, bilateral, unilateral, and direct social control tactics was positively associated with husbands' behavior change, although no associations were found between husbands' social control tactics and wives' behavior change. In another paper employing a dyadic level of analysis, Lewis and Butterfield (2007) found that increased social control attempts, especially positive, bilateral, and direct tactics, were associated with partners reports of health-enhancing behaviors.

Tucker and colleagues proposed that the differential effect of positive and negative control strategies on health behavior could be accounted for by the affective responses spouses experience in response to social control attempts (Tucker & Anders, 2001; Tucker & Mueller, 2000). They asked husbands and wives to identify health behaviors they would like their spouse to change and to complete questionnaires on social control strategies and behavioral and affective responses to social control strategies as agents and targets of social control (Tucker & Anders, 2001). Experiencing negative social control was associated with an increased likelihood of engaging in health-*compromising* behaviors and experiencing positive social control was associated with an increased likelihood of engaging in the desired behavior. Further, the variance in behavioral response to social control strategies was significantly reduced when the affective response to the strategies was accounted for, indicating that the way the target feels about a social control attempt is at least partly responsible for how the target responds behaviorally. The authors note that the conditions under which positive and negative affective responses are elicited remain unclear, and they call for future research to understand the affective consequences of social control. This is especially important given that "individuals who experienced more social control reported greater attempts to engage in the desired behavior, [but] they were also more likely to ignore their partner, to do the opposite of what their partner desired, and to hide unhealthy behaviors from their partner" (p. 480).

The findings from these studies are limited, however, due to the use of convenience samples and their cross-sectional nature. There are few longitudinal studies of social control and health behavior, and the findings from these studies are mixed. As noted earlier, Umberson (1992) found that social control was associated with an increase in health-enhancing behaviors and

a decrease in health-compromising behaviors over 3 years in a randomized community sample of married couples. Westmaas, Wild, and Ferrence (2002) found a significant effect of social control on reducing smoking behavior over time for men, but found the opposite effect for women. That is, increased reports of a spouse or partner's influence were associated with greater reductions in men's smoking 2 days and 4 months post quit date compared to men reporting little partner influence, but greater partner influence resulted in smaller reductions in smoking for women compared to women reporting little partner influence. Helgeson and colleagues found no relationship between social control and health behavior over time in a sample of 80 patients with prostate cancer and their spouses. Further, cross-sectional findings indicated that social control was associated with a decrease in health behavior and an increase in psychological distress (Helgeson, Novak, Lepore, & Eton, 2004). Finally, Franks and colleagues found no cross-sectional associations between social control and health behavior in a sample of 94 patients participating in cardiac rehabilitation and their spouses (Franks, Stephens, Rook, Franklin, Keteryian, & Artinian, 2006) and that, over 6 months, spouses who experienced more social control reported decreases in health behaviors and worsening mental health.

Similar to the social support literature, researchers have also included spouses in behavior change interventions in an attempt to leverage the social control spouses may have over one another to decrease health risk and prevent health problems. These interventions have achieved limited success (for a review, see Lassner, 1991; Black, Gleser, & Kooyers, 1990). In a meta-analysis of weight loss programs that included couples, Black, Gleser, and Kooyers (1990) found evidence that couples approaches are more successful than participant-only approaches at post treatment, but found no evidence of significant differences at follow-up. In a more recent study, McBride and colleagues (2004) used a three-group randomized controlled intervention with 583 pregnant women who wanted to quit smoking to test whether a partner-assisted approach to smoking cessation was more successful than usual care or a women-only approach. No significant differences in abstinence were found among the groups, although more partners were abstinent during late pregnancy in the partner-assisted condition. The authors conclude that couples interventions require further refinement to make them more effective than women-only interventions.

Thus, it appears that the cross-sectional associations and the longitudinal effects of social control on health behavior among spouses are inconsistent and sometimes contradictory across studies. How might we account for these contradictions? There is support for the supposition that the type of strategy used for social control attempts accounts for some of the variability;

for example, that positive bilateral strategies are more effective than nega-
tive unilateral strategies (Lewis & Butterfield, 2007; Lewis, Butterfield,
Darbes, & Johnston-Brooks, 2004), although this distinction has not been
tested longitudinally. Spouses' affective responses to social control attempts
may also account, at least partially, for variability in their behavioral
responses, but it remains unclear what factors contribute to the affective
response of the recipient of a spouse's social control attempt. As Helgeson
and colleagues point out, "the same social control attempt may be perceived
as encouraging or annoying" (Helgeson et al., 2004, p. 66). This difficulty is
underscored by qualitative findings that the strategy "requesting the spouse
to engage in a health-related behavior" was one of the top three strategies
reported as being effective, yet "this strategy was also the most frequently
mentioned ineffective strategy by husbands and wives" (Tucker & Mueller,
2000, p. 1125).

Important questions also remain regarding the distinction between the
constructs social *support* and social *control*. As Helgeson and colleagues
point out, "someone encouraging you to exercise by offering to exercise with
you or to drive you to the gym is social control, but also emotional support
and instrumental support. Is this supportive or unsupportive?" (Helgeson
et al., pp. 55). Franks and colleagues attempted to address this question by
distinguishing between social control and social support a priori (Franks
et al., 2006). They defined social support as "attempts to aid and reinforce a
partner's efforts to sustain needed changes in health behaviors" and assessed
it with items such as "listened to spouses' concerns about protecting her/his
health" and "agreed with your spouse's decisions about caring for her/his
health." Social control was defined as "attempts to induce needed changes in
the health behavior of a partner who has been unable or unwilling to make
such changes on his or her own" and assessed by items such as "prompted
or reminded spouse to do things to take care of her/his health" and "tried to
influence spouse's choices about protecting her/his health." Using these
constructs, Franks et al. found that support was associated with healthier
behavior cross-sectionally, whereas social control was not and that, over
time, social support predicted increases in spouses' mental health but social
control predicted decreases in healthy behavior and mental health.

The operational definitions of social support and social control used in
the Franks et al. study, we believe, provide a window into a more nuanced
view that may help explain the mixed results in much of the literature on
social support, social control, and health behavior. Behaviors identified as
social support are often, in the Franks et al. study and in other studies,
defined as such because the target of the support is wanting and/or ready to
make the behavior change that is being supported. In contrast, behaviors

identified as social control are defined as such because the target of the control is not wanting and/or not yet ready to make the behavior change. Expanding our thinking to include how ready the target spouse is to make a change may help explain a number of apparent discrepancies within and across studies. First, the relative efficacy of social support in comparison to social control in positively influencing health behavior may be accounted for by the relative readiness of the targets to make a health behavior change. For example, readiness to change may be why social support has been shown to be so effective in studies of couples in which one partner has been diagnosed with a serious illness. In these samples, spouses have encountered a major trigger for health behavior change, and the change is being recommended and supported by others, most notably the ill partner's physician. Second, the puzzling finding that the same strategies seem to have positive effects in some samples or subsamples but to have no effect or even negative effects in others can be explained, perhaps, by variability in readiness within the samples. For example, the strategy "requesting the spouse to engage in a health-related behavior" (for this example, join him for an evening walk) may have very different results for someone who doesn't believe her lack of exercise is a problem and has no intentions of increasing her level of exercise, compared to someone who has come to realize that her lack of exercise is endangering her health and is trying very hard to find ways to incorporate more exercise in her day-to-day living. This same tactic might well be defined as a control attempt in the first situation and a support attempt in the second. Third, readiness may be an important determinant for spouses' affective responses to change-promotion strategies. Continuing the example, the first spouse is likely to respond to a suggestion to join her partner for an evening walk with annoyance and irritation, whereas the second might respond with interest and gratitude. To our knowledge, readiness to change has not yet been specifically examined in this literature, although this idea was alluded to by Lewis and Rook more than 10 years ago when they speculated that "different processes may be important at difference stages of behavior change" (Lewis & Rook, 1999, p. 69).

READINESS TO CHANGE

Although systematic research on spousal influence and health behavior change is relatively new, there is a more established literature on how individuals make changes. The Transtheoretical Model of Change or Stages of Change Model (TTM; Prochaska & DiClemente, 1983; Prochaska & DiClemente, 1986; for a recent description see Prochaska & DiClemente, 2005)

has been well-established across multiple change domains, including substance dependence recovery, smoking cessation, dietary modification, exercise adoption, and the like. Using this model, an individual goes through five stages when making a change: precontemplation (not currently considering change), contemplation (considering the pros and cons of making the change), preparation (planning and committing to change), action (the change is made), and maintenance (sustaining long-term change).

Applying this model to a relational context, we expect that spouses will be more effective in their attempts to promote or support health behavior change to the extent that they use interventions appropriate to the partners current stage of change. For example, a spouse who buys Nicorette gum for her partner who smokes might be viewed as interfering or controlling if the partner is in the precontemplation stage of smoking cessation, which might retard progress through the stages of change. One the other hand, if the partner is in the preparation or action phase of smoking cessation, buying the gum might be considered thoughtful and supportive, which might promote development through the stages.

To ascertain the utility of the transtheoretical model in explaining how spousal influence strategies affect partners health behaviors, some preliminary questions need to be addressed. No studies to date have explored whether readiness is a part of spouses' cognition when thinking about a desired health behavior change in their partners and, if so, whether spouses take readiness into consideration when they attempt to influence their partners health behaviors. Further, given the high levels of interdependence in spouses, it is likely that the identified health behavior problem is shared by the partners at least some of the time, yet little is known about how having a shared health behavior problem affects thoughts and behaviors of spouses when promoting a health behavior change in their partner. Therefore, as a first step to exploring the utility of the TTM in understanding spousal influence and health behavior, we decided to conduct exploratory research on helpers' cognitions and behaviors when they desire a health behavior change in their partners and to examine the usefulness of the Stages of Change model in explaining helpers' cognitions and behaviors when promoting health behavior change in their partners.

PHASE 1 OF THE CURRENT STUDY

To address these questions, quantitative and qualitative data were collected. For Phase 1 of the study, we designed a health behavior questionnaire and invited married couples to answer questions online. The purpose of this first

phase was to determine whether spouses agreed that a health behavior problem existed, whether the problem was a shared problem, and whether spouses' self-reported and spouse-reported readiness to change were similar. A second purpose was to identify participants for an in-depth interview for Phase 2 of the study.

Method

Participants. Participants were recruited via Craig's List, a website with local classified advertisements used nationally by about 50 million people per month. Married individuals interested in participating in a study of marriage and support and who were living in the local area were asked to click on a link to fill out initial screening questionnaires online. No compensation was offered for this phase of the study, but participants were informed that if they chose to fill out the screening questionnaires, they might be invited to participate in a second phase of the study for which they would be paid $100. As part of the screening questionnaire, participants were asked to provide their spouses' names and e-mail addresses. An e-mail was sent to spouses with a request to participate and a link to the questionnaires. Fifty-nine couples completed the questionnaires. For men and women, respectively, the mean age was 37 (standard deviation [SD] = 12.5) and 35 (SD = 11.6) and the mean annual income was $83,000 ($SD$ = 54,000) and $38,000 ($SD$ = 28,000). Among women, 45% identified as Caucasian, 36% as Asian American/Pacific Islander, 14% as Latina/Chicana and 5% as other. Among men, 57% identified as Caucasian, 25% as Asian American/Pacific Islander, 14% as Latino/Chicano, and 7% as other. There were no African Americans in the sample.

Questionnaires and Procedure. Screening questionnaires included the Health Behavior Change Questionnaire, which is the focus of the current study. To minimize any effect of priming spouses who would be participating in the subsequent interview to think about readiness to change a health behavior, several additional questionnaires were included as a distraction, including the Marital Adjustment Test (Locke & Wallace, 1959) and a social support questionnaire (Support in Intimate Relationships Rating Scale; Dehle, Larson, & Landers, 2001). The Health Behavior Change Questionnaire was constructed for this study and assessed whether participants thought that they or their partner had unhealthy eating habits, needed to lose weight, or needed to exercise more. These health behaviors were chosen because previous research has identified them as among the most frequently reported health behaviors that spouses try to get each other to change (Lewis & Butterfield, 2007; Tucker & Mueller, 2000) and because we wanted to avoid

the complexities involved in changing a physically addictive behavior, such as drinking and smoking. If a participant indicated that his or her partner engaged in an unhealthy behavior, he or she was asked to rate the partner on four questions (e.g., eating habits): (1) How much of a problem are your spouse's eating habits? (2) How much would you like your spouse to eat better? (3) How much would your spouse like to eat better? and (4) How ready is your spouse to eat better? These items were rated on a scale of 1–5, with 1 indicating "Not at all" and 5 indicating "Very much."

Next, participants were asked to indicate the degree of readiness to make a change by checking one of the following: He/she has no desire to start eating better; he/she would like to start eating better someday, but currently has no specific plans for starting; he/she plans to start eating better within the next 6 months; or he/she plans to start eating better within the next 30 days. Participants filled out similar questions to assess their own health behaviors, providing data for us to assess spouse agreement and the extent to which the health problem was a shared problem. Cronbach's α was adequate for husbands ($\alpha = .79$) and for wives ($\alpha = .74$) across health behavior areas.

Results and Discussion

First, we wanted to verify whether spouses agreed that a health-behavior change was desirable. Overall, 44% of husbands and 56% of wives indicated that they would like their partners to make a health behavior change and, although agreement varied, partners generally agreed that a health-behavior change was desirable. Specifically, when husbands reported that they would like their wives to make a health behavior change, wives agreed 73% of the time when the desired change was healthier eating habits, 90% of the time when the desired change was weight loss, and 59% of the time when the desired change was to increase her level of exercise. When wives reported that they would like their husbands to make a health behavior change, husbands agreed 79% of the time when the desired change was healthier eating habits, 88% of the time when the desired change was weight loss, and 85% of the time when the desired change was to increase his level of exercise.

Next, we wanted to determine the extent to which a desired change was related to a shared problem. Percent agreement between husbands' and wives' self-reported need to make a change was calculated. Twenty-five percent of couples reported a shared problem with weight, 17% reported a shared problem with lack of exercise, and 29% of couples reported a shared problem with eating habits.

Finally we wanted to determine whether spouses perceived targets' readiness to change similarly. Percent agreement between self-reported and

spouse-reported stage of change can be seen in Table 9.1. Percent agreement between self-reported and spouse-reported readiness ranged from 26% to 60%; thus, targets self-identify a different stage of change than their partners 40%–75% of the time. The percentages vary based on gender and type of problem; for example, husbands are most accurate at identifying their wives' self-reported readiness to eat in a more healthy way, whereas wives are most accurate at identifying their husbands' self-reported readiness to exercise more frequently. There is also a strong tendency, across gender, to underestimate partner's readiness to change rather than overestimate readiness to change. For example, a wife might report that her husband is in the precontemplation stage, whereas her husband reports being in the preparation stage. To better understand these discrepancies in perception and the effects of having a shared problem on change strategies, qualitative data were collected in Phase 2.

PHASE 2 OF CURRENT STUDY

For Phase 2 of the study, we invited wives who had reported that their husbands needed to make a health behavior change on the screening questionnaire to participate in an in-person interview. Wives were told that the interview would focus on support and marriage and were given no further details regarding the interview and the purpose of the study. Wives were chosen because of the evidence that they make more social control attempts (Fekete, 2007; Umberson, 1992) and a greater variety of social control attempts (Lewis et al., 2004; Tucker & Mueller, 2000), and because there is some agreement that "wives may be more effective agents of social control when it comes to changing health behaviors, compared to husbands" (Lewis & Butterfield, 2007, p. 313; also see Westmaas et al., 2002).

Table 9.1 Percent Agreement with Targets' Perception of Their Current Stage of Change

	HUSBANDS			WIVES		
	EARLIER STAGE OF CHANGE	SAME STAGE OF CHANGE	LATER STAGE OF CHANGE	EARLIER STAGE OF CHANGE	SAME STAGE OF CHANGE	LATER STAGE OF CHANGE
Eating	33%	60%	7%	53%	29%	16%
Weight	50%	44%	6%	40%	33%	27%
Exercise	41%	26%	33%	38%	43%	19%

The purpose of this second phase was to elicit participants' thoughts and behaviors relevant to a health behavior change they wanted their husbands to make. We were especially interested in (1) whether wives thought about their husbands' readiness to change and, if so, whether they took readiness into account when employing change strategies and if they perceived a more positive response when they did so; and (2) any perceived effects of the behavior problem being a shared problem on wives' strategies and/or success in promoting change in their partner.

Method

Participants. Twenty-five women were asked to participate in an interview about marriage and support. These women were chosen because they responded between 3 (somewhat) and 5 (very much) to at least one of the following questions: (1) How much would you like your spouse to eat better? (2) How much would you like your spouse to lose weight? and (3) How much would you like your spouse to exercise more? All 25 women agreed to participate and were paid $100 for their participation.

Interview and Procedure. These women participated in a semistructured validation interview in a laboratory setting. The questions were designed to elicit participants' thoughts and behaviors relevant to a health behavior change they wanted their spouses to make, to determine whether participants thought about readiness to change and, if so, whether these thoughts influenced the strategies they used to promote behavior change in their husbands. Interviewees were reminded about a health behavior change they thought their husbands should make, as identified in the screening questionnaire, and asked whether they would be willing to answer some questions about their thoughts and behaviors concerning this problem. If they had identified more than one desired health behavior change, they were invited to focus on the change they wanted the most, or to address more than one if the desired changes were related (e.g., losing weight and changing eating habits). Interviewees were then asked questions covering six domains: their cognitions about the desired health behavior change, their behavior regarding the desired health behavior change, their perceptions of their husbands' behavior regarding the desired health behavior change, the outcome of any attempts to help with the health behavior change, their perception of their husbands' readiness to make the desired health behavior change, and their overall evaluation of the situation. Key questions for each domain can be seen in Table 9.2. The questions were designed such that initial questions were more general and open-ended, to see whether wives spontaneously mentioned readiness when discussing

Table 9.2 Key Interview Questions for Each of the Six Domains

DOMAIN	KEY QUESTIONS
Attitude of the Helper	What are your thoughts about his _____
	Why do you think he's having trouble with this?
	What do you think would is the best way to change _____?
Helper's Behavior	Have you said anything to him about _____?
	What things have you done?
Helpee's Behavior	Does he talk about this with you?
	"If no, why not?"
	"If yes, what has he said?"
	Has he asked you for help?
	Does he do or say things that make it hard to help him with _____?
Outcome of the Helping	How successful have you been in your efforts to help him with this change?
	How has he responded to your efforts?
	What techniques seemed to work best?
	What techniques seemed to not work well?
Readiness	How important is it to him to _____?
	How can she tell?
	Would he like to _____?
	Is he ready to _____?
	Do you think he intends to (make the change)?
	In the next 6 months?
	In the next 30 days?
Evaluation	Are you satisfied with the things you've been doing with regard to _____?
	Are there things you think you should do that you are not doing?

their desire for their husbands to make a health behavior change. More specific questions were asked at the end of the interview to ensure that wives' cognitions and behaviors regarding readiness were assessed. The interviews were videotaped with participants' permission and transcribed for later analysis.

Analytic Strategy. The primary purpose of these interviews was to determine whether wives thought about readiness and, if so, took readiness considerations into account when promoting a desired health behavior change. In addition, we wanted to explore the effect of having a shared health behavior problem on wives' approaches to promoting a health behavior change in their husbands. In the results and discussion section following, we will first address wives' approaches when they shared the health behavior problem and then address wives' thoughts and cognitions regarding readiness across all wives. To organize the data, using digital transcriptions of the interviews, a graduate student identified all instances when wives' indicated that the health behavior change they desired in their husbands was one they desired

in themselves as well and all instances when readiness was mentioned spontaneously, before specific readiness questions were asked. The primary investigator then reviewed the indicated passages to verify that they did fit the relevant themes (shared problems and readiness) and reviewed all transcripts to ensure that no relevant passages were missed.

Results and Discussion

Shared Problems and Interdependence. The effect of a shared health-behavior problem on wives' cognitions and behaviors appeared complex and varied across wives. Some wives reported that sharing the same problem sometimes made helping their partner problematic because they were not ready to make a change themselves and/or because any support or social control tactics would seem illegitimate, given that they themselves needed to make the change. For example, with regard to her desire for her husband to exercise more, one wife said "I think ... me pushing him ... umm ... every so often if I go jogging with him, it would help. But I'm lazy too. I'm not motivated either. So ...." Another wife who wanted her husband to lose weight told us "Well, I haven't said anything 'hey pal you're getting fat' because hello pot, it's the kettle calling."

For other wives, it appeared that having the same problem actually helped to increase support effectiveness by increasing empathy and a sense of partnership. For example, one wife reported "I had some back issues over the past 2 years so I haven't been able to work out and, you know, it's getting to bug me too. So when we discuss our health and losing [weight] and everything; we really do it kind of as a team."

Experiencing the same problem appears to be one reason that spouses become highly interdependent when coping with noncritical health issues. Sometimes, as in the example just mentioned, interdependence can be positive and serve to promote health changes in both partners. Here is a similar quote from a wife who is reflecting on changes she and her husband had already made in their eating habits. "Well, like, when I would get groceries, I'd try not to buy the temptation foods. Or, there were times when I would want to eat McDonalds, and I know that if I did it, he would. And he'd do the same thing for me. So it's kind of reciprocal, just kind of keeping each other on track and trying to help each other and make sure that we don't lose sight of what the main goal was, which was to stay healthy."

So, in these cases, their mutual problem and mutual motivation helps them both to take action and maintain health behavior change over time. Sometimes, however, interdependence can work against health behavior change. This next quote is from a wife who would like her husband (and herself) to start exercising more: "It's just not consistent. I know there is definitely a direct relation of some sort to my motivation as well. Because if I'm not

motivated to do it, he doesn't do it and vice versa. If both of us are on board, we're both ready, we're both motivated, then it works. Otherwise, it doesn't." In this case, a lack of motivation in either spouse can keep both from getting the exercise they would like to get.

Readiness Cognitions. Across the 25 interviews, we did find quite a bit of evidence that wives thought about their spouses' readiness to make a change. Wives' descriptions tended to fall easily into a specific stage of change. Here is an example of a wife whose husband is in the precontemplation stage of change: "I don't have the time because I have kids and for me to tell him 'go eat something healthy' it's impossible, and I don't know how; maybe a scare … I think (being healthy) is not as important to him." Here, the wife appears aware that the change is not important enough to her husband right now for him to consider making a change. She also appears to be holding back on her efforts to influence his eating habits until he is more ready, for example, if he experiences a health scare related to his poor eating habits.

Wives of husbands in the contemplation stage, who are considering the pros and cons of making a change, likewise appeared aware of their husbands' readiness. For example, one wife who would like her husband to eat in a more healthy way and to exercise more stated: "He knows that he should be doing these things, and he feels like he should, he almost feels guilty about it and wants me to know that he knows, but doesn't necessarily take the step to really do it." In this case, she recognizes that her husband is thinking about making a change, but has not fully committed to it yet. Another wife who recognizes that her husband is in the preparation stage of change, discussed her husband's motivation to begin to exercise regularly again, a change he has successfully made in the past: "So I think it's more of an internal, 'Oh yeah, I hit bottom, it's time to pull out of that tar pit and do it again.'" She is aware that her husband has recognized the need to make a change and that he is willing to do it. Finally, here is an example from an interview with a wife whose husband was currently in the action stage. "So, it wasn't even a matter of me saying anything, really. It was just that finally something clicked and he wanted to do it." She is acknowledging that this change was primarily based on her husband's internal state of readiness to make the change.

Matching Strategies to Stages of Change. We also saw a lot of evidence that wives considered their husbands' readiness when thinking about how to influence his health behavior. Further, many of the wives we interviewed appeared to deliberately match their strategies to their partners current stage of change. Here is an example of a wife who has chosen not to press

her husband to exercise more at this time: "I guess a lot has to come from self-initiative. If he doesn't want to do it, if I'm the only one pushing him, then .... Well, also on the personality side, he's more on the stubborn side and he has his own ideas. So, it's really hard to impose any ideas on him if he doesn't see it as a problem." She recognizes that any attempts to influence him will be highly unlikely to meet with success if he is in the precontemplation stage of change and that there is not much she can do about the situation until he recognizes it as a problem himself. In a similar case, a wife whose husband is in the contemplation stage stated: "It's almost like he needs someone to do it for him or to get him started or force him into it, but I know if I try doing that then it's going the opposite way, so I'm not really sure how to help."

In both of these cases, the wives show awareness that their husbands are not ready and are therefore being cautious about trying to instigate change. Clearly, though, they are at a bit of a loss as to how to help their husbands become more ready.

Wives whose husbands are further along in the change process also seem to recognize readiness and how they might help more, now that their husbands are more ready. A wife whose husband is in the preparation stage stated: "I think it's his responsibility. The bike's been broken for a long time and he did get a kit to fix it ... and he actually, two weekends ago, did try to fix it and was unsuccessful. So, now that he's made the effort, it's like, ok, maybe I could just do it, say, 'Oh, I just wanted to save you the time.'" She seems to be realizing that an action that may have formally been viewed as pushy or interfering may now be appropriate and helpful.

Finally, it is important to note that mismatching did sometimes occur, and when it did, wives reported that these attempts backfired. A wife whose husband was in the precontemplation stage of changing unhealthy eating habits modified her husband's lunch order at a restaurant they co-owned. She describes her action and the results: "I'll say 'ok a steak with just vegetables,' you know no pasta, and then I come out and there's a big side of fries. And so I just say to him, 'and I bother why?' and he'll just sit there with a big smile on his face, you know, whatever, eating his fries." She seems at least somewhat aware that her intervention is not helping, and that it is possible that her husband will now be even less likely to consider making a change.

CONCLUSION

Quantitative and qualitative data from this exploratory study using a community sample provides some initial information about the role of readiness

in explaining spouses' attempts to control and/or support health behavior change in their partners and the relative effectiveness of these attempts. Understanding these processes appears important, as about half of the couples assessed in this study report that they want their partners to make a health behavior change, and because efforts to promote health-behavior change have been shown to have a negative effect on spouses' emotional well-being (Hughes & Gove, 1981; Lewis & Rook, 1999; Tucker & Anders, 2001) and, in some studies, to actually impede health-behavior change (Franks et al., 2006; Helgeson et al., 2004; Tucker & Anders, 2001). In the current sample, the majority of spouses agreed that a behavior change was needed, although in 12%–31% of the couples, depending on the identified problem, spouses did not agree that a change was needed. For these couples, the potential negative effects of promoting health-behavior change may be especially worrisome, particularly when the target of the health promotion attempts does not share the perception of the agent that a problem exists. Even when couples do agree that a health behavior change is needed, they often do not agree on how ready the target is to make the desired change, placing the target spouse in different stages of change 40%–74% of the time, depending of the identified problem.

The importance of this difference in perspective is highlighted by the fact that wives do seem to think about readiness and seem to take their perceptions of their husbands' readiness into account when engaging in social support and social control efforts. These efforts may backfire when wives' estimates of readiness differ from their husbands' estimates of readiness. Despite these concerns, the evidence from the interviews that wives do consider readiness is important and provides preliminary evidence that the transtheoretical model may prove useful in explaining why social control and social support efforts vary in their effectiveness.

Future Directions

Lewis and Butterfield (2007) noted that "the disjuncture between correlational research and health behavior change interventions suggests that our knowledge base in this area needs greater breadth and depth before we can implement successful interventions that seek to leverage the influences spouses may have on each other's health behavior." Thus, the important next steps for this area of research are to conduct basic theoretically driven research that moves beyond concurrent correlations, either through experimentation or the use of longitudinal designs, and to test interventions based on this type of research to determine whether the new approaches are more successful than interventions to date. Specific to the theoretical framework explored in the current study, our next step is to determine whether spouses

who take readiness into account and accurately match change-promotion strategies to their partner's current stage of change are more effective in promoting change over time compared to spouses who use strategies that are inconsistent with their partner's current stage of change. Measuring the target spouses' reactions to change-promotion attempts would further allow us to gauge whether this matching hypothesis can help explain why spouses differentially react to social control and social support and whether matching might prevent the negative emotional consequences of social control.

Another potential fruitful line of research is to determine whether we can assist spouses in promoting change by increasing their accuracy in assessing readiness and by teaching them strategies based on their partners current level of readiness. The current findings and past research (e.g., McBride et al., 2004; Palmer, Baucom, & McBride, 2000) suggest that we need a more tailored approach to couple interventions for behavior change. One such approach that has been subject to rigorous empirical inquiry with individual patients dealing with a vast array of health behavior problems and that has grown out of the transtheoretical model is *motivational interviewing* (for recent reviews and meta-analysis see Burke, Dunn, Atkins, & Phelps, 2004; Knight, McGowan, Dickens, & Bundy, 2006; Vasilaki, Hosier, & Cox, 2006). Physicians and other health care professionals have been using motivational interviewing for some time to promote advancement through the stages of change in their patients (see Madson, Loignon, & Lane, 2008 and Rollnick, Miller, & Butler, 2008 for recent reviews and descriptions). If additional basic research supports the current findings, integrating pedagogical approaches derived from the large motivational interviewing literature into couple interventions may be quite useful in improving these interventions. To evaluate such an approach, couples would be randomly assigned to an intervention group and a control group and followed over time to determine whether assisting spouses in (a) identifying the target partner's readiness to change and (b) employing stage-appropriate strategies that will help their partners advance through the stages of change results in greater change and fewer negative emotional consequences for the target partner. Innovative couples approaches such as this, if shown to be effective, have the potential to have a significant impact on health behavior by more effectively utilizing what is often the more important source of support for a sick or at-risk individual: his or her intimate partner.

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