
The Content and Context of Effective Spousal Support

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Satariano and Ragheb's analysis of adjustment to breast cancer in chapter 4 indicates that married women adjust better than nonmarried women *except* when their husbands are ill. Those with ill husbands indicate levels of adjustment that are equivalent to their nonmarried counterparts. These data qualify the generally accepted notion that marriage improves health and well-being and draw attention to the importance of the context of marital relationships in determining whether they are health promoting. This discussion expands on this issue by attempting to delineate types of spousal behaviors and behavioral contexts that result in effective spousal support.

Our own work is concerned with specifying the conditions under which spouses are effective supporters of health-promoting behaviors. Here, we discuss a microanalytic study of spousal behaviors performed in response to an attempt to quit smoking cigarettes and maintain abstinence from smoking. In short, we measure spousal behaviors that are characterized by cooperation and reinforcement (positive) or by nagging and policing (negative) and assess their role in successful quitting. We also view the effectiveness of these behaviors in the context of one another (positive/negative behaviors) as well as in the context of how persons quitting smoking expect their spouses to behave. We raise three questions in this regard: (a) How important are the mere frequencies of positive (supportive) and negative (nonsupportive) behaviors? (b) Is the effectiveness of the frequency of supportive behaviors influenced by the frequency of nonsupportive ones? (c) Is the effectiveness of support one receives influenced by the support one expects?

METHODS

Subjects. The subjects were 221 persons making a serious attempt to quit smoking by themselves. In order to qualify for participation, a subject needed to be 18 or older, smoke at least 10 cigarettes a day, and have not yet begun the quitting process. The mean number of cigarettes smoked at baseline was 26.8 and the mean years as a smoker was 23.3. Of the subjects, 70% were female and the mean age was 40.

Interviews

Those meeting study criteria were given a baseline interview approximately 1 month prior to initiating quit attempts, and follow-up interviews 1, 2, 3, 6, and 12 months after their expected quit dates.

Assessing Spousal Behavior. The first 145 of the 221 subjects were administered a measure of expected partner support for quitting smoking at baseline, while all 221 were administered a measure of received partner support for quitting at 1 month. (The baseline support measure was replaced with a questionnaire addressing another issue at mid study.)

Both expected and received partner support were assessed with the 20-item version of the Partner Interaction Questionnaire (PIQ-20). The PIQ-20 is a self-report questionnaire assessing the specific behaviors that spouse or romantic partner perform in response to a person's attempts to quit smoking (Cohen & Lichtenstein, 1990; Mermelstein, Lichtenstein, & McIntyre, 1983). At baseline, before subjects started the quitting process, we asked for an indication of behaviors that were *expected* from partners. At 1-month follow-up we asked for indication of behaviors actually *received* from the partner. For each item, subjects indicate the frequency of each expected or received behavior on a 5-point scale: (0) never; (1) almost never; (2) sometimes; (3) fairly often; and (4) very often.

The PIQ-20 includes separate 10-item subscales assessing positive and negative behaviors. The positive behaviors are characterized by cooperation and reinforcement for the quitting attempt and the negative behaviors by nagging and policing. Examples from the positive behavior subscale include (a) compliment you on not smoking, (b) congratulate you for your decision to quit smoking, and (c) help you think of substitutes for smoking. Examples from the negative behavior subscale include (a) comment that smoking is a dirty habit, (b) talk you out of smoking a cigarette, and (c) comment on your lack of willpower. Three scores are derived from the PIQ: (1) frequency of positive behaviors, (2) frequency of negative behaviors, and (3) ratio of positive to negative behaviors.

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Assessing Smoking Status. All of the interviews included detailed assessment of smoking status. *Point-prevalence abstinence* at a panel was assigned to persons who said that they were not currently smoking and had not smoked "even a puff" during the last week. *Continuous abstinence* was assigned to persons who were point-prevalent abstinent at all follow-up interviews up to the point of assessment (e.g., at 1 and 3 months for 3 months of continuous abstinence) and had not smoked more than three days since quitting.

Biochemical Verification. At each interview, subjects were reminded that at some as yet unscheduled point of the study, the investigators would biochemically verify their smoking status. All persons who reported abstinence at 6 months were scheduled for verification with both CO and saliva cotinine. All persons continuously abstinent at 6 months were tested and all had CO and cotinine levels consistent with their continuous abstinence status.

RESULTS

PIQ Mean Scores

For both positive and negative behaviors, subjects received a lower frequency of behaviors than they expected. Mean positive behavior scores were 28.70 on the expected scale and 21.08 on the received scale [$t(144) = 9.04, p < .001$]. Mean negative behavior scores were 17.35 on the expected scale and 13.07 on the received scale [$t(144) = 5.70, p < .001$]. For the ratio of positive to negative behaviors, subjects had a higher received ratio (3.57) than they expected [2.60; $t(144) = 2.18, p < .03$]. The correlations between expected and received scores were .41 ($df = 144, p < .001$) for positive behaviors, .45 ($df = 144, p < .001$) for negative behaviors, and .22 ($df = 144, p < .007$) for the positive/negative ratio.

Males and females differed only on the ratios of positive/negative scores. Females both expected and received a larger ratio of positive to negative behaviors than males. The mean expected male ratio was 2.06, whereas the mean expected female ratio was 3.36 [$t(194) = 2.95, p < .004$]. Similarly, the mean received male ratio was 2.70, whereas the received female ratio was 4.08 [$t(167) = 2.03, p < .04$].

Abstinence Rates

At 1 month, 10.4% of the sample (23 of 221) were continuously abstinent. There is relatively little change in the percent of persons continuously abstinent at subsequent follow-ups (only 12 relapsing between 1 and 12 months:

6.8% [15 of 219] abstinent at 3 months, 5.5% [12 of 218] at 6 months, and 5% [11 of 219] at 12 months) and hence prospective lag prediction of relapse (e.g., predicting relapse from 1- to 3-month follow-ups) was not possible. These rates are consistent with those reported in other studies of self-quitters (e.g., median of 4.2% at 12 months for five studies reported by Cohen et al., 1989).

Predicting Continuous Abstinence

Each of the primary outcome analyses is a logistic regression. The dichotomous variable abstinent/smoking is regressed on various combinations of PIQ scale scores. Abstinence is coded as "1" and smoking as "0." The probability values we report are based on treating the regression coefficient divided by its standard error as a *t* value and using two-tailed tests (Dixon, 1985). In order to illustrate the nature of effects indicated by significant coefficients, we report percent abstinence for persons high (above the median) and low (below the median) on a variable.

We do separate analyses of continuous abstinence at 1, 3, 6, and 12 months post quit date. Analyses of the same variable at different panels are not independent (e.g., the people abstinent at 12 months were abstinent at all previous panels). The purpose of presenting data from each successive panel is to determine the predictive ability of the partner support in relation to an *increasingly conservative* outcome criterion.

The first set of equations is designed to test the independent influences of the *frequencies* of positive and negative received behaviors on abstinence. The second set is designed to test whether the ratio of positive/negative behaviors will predict continuous abstinence. Finally, we conduct a set of conservative analyses to determine whether associations between the ratio and outcomes occur above and beyond the influence of positive and negative behavior frequencies. Because of the multiple tests, we use a conservative alpha of $p < .01$ to evaluate these hypotheses. Findings at the $p < .05$ level are viewed as suggestive but not conclusive.

Received Support

The Independent Effects of Positive and Negative Behaviors. In a single equation, abstinence/smoking was regressed on the number of positive behaviors received (+R) and the number of negative behaviors received (-R). The more positive behaviors one received, the *more* likely they were to be continuously abstinent at 1 month (5.1% abstinence for persons low on +R and 16.3% for those high on +R, $p < .01$). A similar suggestive effect occurred at 3 months (4.2% for low +R and 9.8% for high +R, $p < .05$) but there were no relations between

positive behavior also a suggestive effect on abstinence at 1 month (5.1% for low +R and 16.3% for high +R). There were no relations between any of the sub-

The Proportion of Positive Behaviors. To determine whether the ratio of positive to negative behaviors (+R/-R) predicted continuous abstinence at the 1-month follow-up, we analyzed the data as presented in Fig. 1. The proportion of positive behaviors that were received accounted for 12% of the variance in abstinence for by +R and -R, and 18% of the variance in abstinence for +R, -R, and the ratio of positive to negative behaviors. The proportion of positive behaviors that were received accounted for 12% of the variance in abstinence for +R and -R, and 18% of the variance in abstinence for +R, -R, and the ratio of positive to negative behaviors.

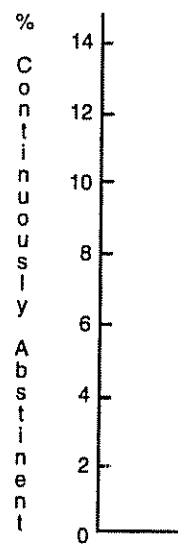


FIG. 1. Proportion of the partner support.

positive behaviors and abstinence at 6- and 12-month follow-ups. There was also a suggestive association between the frequency of negative behaviors and abstinence at 1 month. The more negative behaviors, the *less* likely they were to be continuously abstinent (12.5% for low - R and 8.3% for those high on - R). There were no associations between frequency of negative behaviors and any of the subsequent follow-ups.

The Proportion of Positive to Negative Behaviors. A set of analyses was conducted to determine whether the *ratio* of positive to negative behaviors received (+R/-R) predicted continuous abstinence. The first logistic regression included only the ratio +R/-R. The ratio is associated with continuous abstinence at the 1-, 3-, 6-, and 12-month follow-ups ($p < .01$ for all). As summarized in Fig. 1, in all cases, the greater the proportion of positive to negative behaviors the greater the abstinence rate. In order to determine whether the ratio accounted for variance in abstinence above and beyond that accounted for by +R and -R, a third regression was run including all three variables, +R, -R, and +R/-R, as predictors. Even after partialing out the constituent parts of the ratio, there is a suggestive relation ($p < .05$) between the proportion +R/-R and continuous abstinence at 1, 6, and 12 months. The coefficient at 3 months was marginally ($p < .07$) significant. Again, in all cases, the higher the frequency of positive relative to negative behaviors, the greater

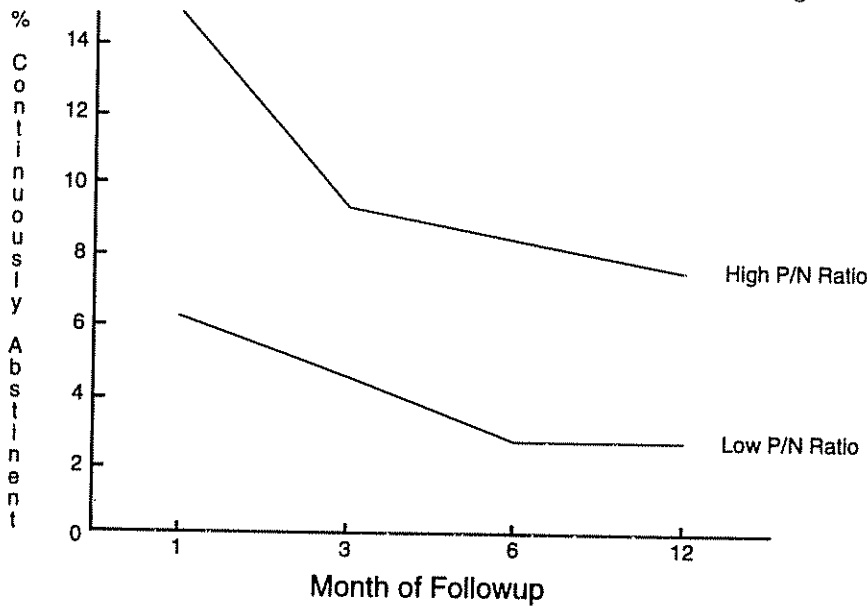


FIG. 1. Percent persons continuously abstinent at each panel as a function of the ratio of positive/negative behaviors received from their spouse or partner.

the probability of being abstinent. The positive behavior score was marginally predictive at 1 month ($p < .05$), but neither positive nor negative behavior coefficients were significant at any other time in equations where the ratio was included.

Expected Support

Our concern with expected partner support was driven by an interest in the influence of expected support on the effectiveness of received support. Although there were indications of expectations influencing the effectiveness of received support, none of the critical analyses reached statistical significance. The most interesting distribution of proportions is presented in Fig. 2. These data suggest that persons with higher positive to negative behavior ratios than they expected are more likely to be abstinent than those getting what they expected and those with lower positive to negative behavior ratios than they expected. We attribute the lack of significant effects to the smaller sample size for persons receiving the expected PIQ at baseline. There were similarly no independent effects of expectation on abstinence

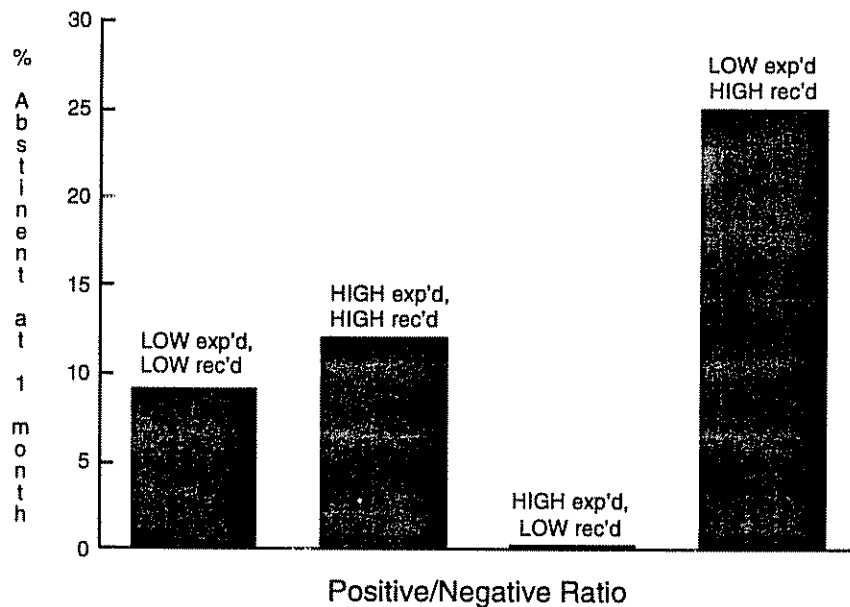


FIG. 2. Percent persons abstinent at 1 month as a function of the ratio of positive/negative behaviors they expected from their spouse or partner and the ratio of positive/negative behaviors they received.

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DISCUSSION

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Relation of PIQ to Partner Relationship and Gender

A series of analyses of variance was conducted in order to determine whether any of the expected or received PIQ scores were related to whether the named partner was a spouse or not, the gender of the smoker, and the smoking status of the partner. There were no differences on any PIQ score on any of these criteria.

DISCUSSION

Let us return to the three questions raised earlier in this chapter regarding the nature and context of behaviors that support spouses.

How Important are the Mere Frequencies of Positive and Negative Behaviors?

Mere frequency appears to be of little importance. Frequency of positive behaviors alone predicts only 1-month abstinence and none of the associations between negative behaviors and abstinence reached the $p < .01$ criterion.

Is the Effectiveness of the Frequency of Supportive Behaviors Influenced by the Frequency of Nonsupportive Ones?

The ratio of positive/negative behaviors as perceived by the quitter is the best predictor of abstinence. The ratio predicts continuous abstinence through 12 months. Moreover, suggestive ($p < .05$) effects remained even after a very conservative analysis partialing out variance accounted for by the frequency of positive and negative behaviors. Hence, it appears that the frequency of spousal positive behaviors is interpreted in the context of the frequency of negative ones. It is possible that people generate a sense of supportiveness based on the *relative* frequency of positive to negative behaviors and this is what is associated with continuous success in quitting.

Is the Effectiveness of Support One Receives Influenced by the Support One Expects?

It appears that subjects' support expectancies were reasonable but not particularly accurate. They received fewer positive and negative behaviors than expected, and received a higher positive to negative ratio than expected. In short, their partners were less interactive in regard to their quitting than they expected, but relatively more of the interactions were positive in nature.

Our data in regard to how expectancies influence the effectiveness of received support are merely suggestive. They do, however, indicate the possibility that the receipt of more positive relative to negative behaviors than expected may maximally influence quitting and maintenance. These effects might reach statistical significance with a larger sample size (only 145 were available for these analyses as opposed to 221 for the received support analyses).

Summary

In summary, our study indicates the importance of the content and context of spousal behaviors in supporting health behavior change. We think that microanalytic studies of behavioral interchanges between spouses will help clarify what behaviors are interpreted as supportive, what behaviors improve health and well-being, and the conditions under which supportive behaviors are most effective. Such work will provide a better basic view of the spousal support process as well as aid in the design and implementation of social support interventions.

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Reducing Disab in Research

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