

Directive support, nondirective support, and health behaviors in a community sample

Diana W. Stewart · Jeanne M. Gabriele ·
Edwin B. Fisher

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Abstract Social support is associated with improved psychological functioning, physical health, and health-promoting behaviors. However, research suggests that health outcomes might depend upon the type rather than the amount of support provided to recipients. This study assessed the relationship among nondirective and directive support, and health behaviors (i.e., physical activity, fruit and vegetable intake, alcohol use) in a community sample of 304 adults. Results revealed that nondirective support was related to greater fruit and vegetable intake and lower alcohol use; directive support was not associated with these behaviors. For physical activity, a similar trend emerged, but support variables did not explain any variance above that explained by demographic variables. These findings offer a unique contribution to the literature, as they suggest that certain types of supportive behaviors are important in encouraging positive health behaviors.

Keywords Social support · Health behaviors · Physical activity · Fruit and vegetable intake · Alcohol

Introduction

Social support is associated with improved social and psychological well-being and adjustment (Brown & Harris, 1968; House et al., 1988; Symister & Friend, 2003; Uchino, 2004), better physical health (i.e., cardiovascular, neuroendocrine, immune system functioning; see Uchino, 2006), and decreased mortality (e.g., Holt-Lunstad et al., 2010). Social support is also predictive of health-promoting behaviors such as increased adherence to medical regimens (Catz et al., 2000; Gonzalez et al., 2004), help-seeking behavior (see Heaney & Israel, 2008), smoking cessation (e.g., Fiore et al., 2008), and weight loss (Gorin et al., 2005; Wing & Jeffrey, 1999). Nevertheless, social relationships are generally characterized by both positive and negative qualities, and at times might lead to dissatisfaction, stress, or conflict, thus serving as a model for unhealthy behaviors (Burg & Seeman, 1994; Rook, 1984; Wills & Yaeger, 2003). As a result, the provision of social support does not always lead to positive outcomes, and studies exploring relationships between social support and health have, at times, yielded conflicting results.

Nondirective and directive support

To better understand how social support works and inconsistencies in its effects, researchers have distinguished among different types of social support (e.g., structural vs. functional, positive vs. negative, perceived available vs. perceived received, directive vs. nondirective). Social support can also be conceptualized in terms of the roles and

D. W. Stewart (✉)
Department of Health Disparities Research,
University of Texas M.D. Anderson Cancer Center,
1400 Pressler St., Unit 1440, Houston, TX 77230, USA
e-mail: Dianastew@gmail.com

J. M. Gabriele
G.V. (Sonny) Montgomery VA Medical Center, Psychology/
Mental Health (11 M), 1500 E. Woodrow Wilson Dr., Jackson,
MS 39216, USA
e-mail: Jeanne.Gabriele@va.gov

J. M. Gabriele
University of Mississippi Medical Center, Jackson, MS, USA

E. B. Fisher
Gillings School of Global Public Health, University of North
Carolina at Chapel Hill, 336A Rosenau Hall, Campus Box 7740,
Chapel Hill, NC 27599, USA
e-mail: fishere@email.unc.edu

relationships between support providers and recipients. A distinction has been made between directive and nondirective support (Fisher et al., 1997, 2003; Harber et al., 2005; Øyeflaten et al., 2010; Walker et al., 2006). When directive support is provided, the support provider assumes responsibility (e.g., “Does all the food shopping for me”), telling the support recipient what he or she should do or feel (e.g., “Look on the bright side”). In contrast, when nondirective support is provided, the support provider cooperates with the support recipient (e.g., “Cooperates to choose a restaurant where I can get what I need to eat”) and accepts the recipient’s feelings (e.g., “I can understand how upsetting that must be”). One way of conceptualizing this distinction is that in nondirective support, shared decision making occurs and the support provider seeks to advance the support recipient’s agenda, whereas in directive support the support provider imposes his or her own agenda upon the support recipient (Harber et al., 2005).

Because the distinction between nondirective and directive support is based on the way in which support is provided, it is orthogonal to the more familiar distinctions in function of support (e.g., emotional, instrumental support; Cohen et al., 1985; Cutrona & Russell, 1987). That is, each of the functional types of support can be delivered in either a nondirective or directive manner. For example, for emotional support, “Asked you how you were doing” would be nondirective; while “Tells you to look at the half of the glass that’s full” would be directive. “Solved problems for you” is an example of directive instrumental support whereas “Cooperated with you to get things done” is an example of nondirective instrumental support.

Two features of measuring nondirective and directive support are especially advantageous for research. First, the distinction between nondirective and directive support is operationally independent of appraisals of support being positive or negative, wanted or unwanted, etc. Items assessing nondirective and directive support describe actions that individuals perceive they have received (e.g., “Ask if you need help”), without language indicative of judgment of those actions (compare to “Gave you information or made suggestions that you found unhelpful or upsetting;” Revenson et al. 1991). Thus, it is possible to study empirically how each type of support is associated with support satisfaction or other positive or negative outcomes. The second key feature of measures of nondirective and directive support is that they assess actual behaviors rather than perceptions of available support, which may be influenced by personality characteristics (Den Ouden et al., 2010; Hastie & Park, 1986). Together, these features allow the examination of satisfaction with support and other outcomes to be pursued as empirical questions regarding how different types may lead to more or less satisfaction or benefit in different circumstances.

Results from several studies have found nondirective support to be positively associated with disease management, adaptive coping, satisfaction, self-efficacy and quality of life; whereas, directive support has been found to have no effect or, in some cases, a negative effect on these outcomes (Fisher et al., 1997; Harber et al., 2005; Øyeflaten et al., 2010; Walker et al., 2006; Gabriele et al., 2010). It is notable that directive support, however, is not always associated with negative physical and mental health outcomes. Directive support has been found to be advantageous in some acute situations, when individuals are initiating behavior change, or in situations in which individuals lack the necessary skills to handle a challenge (Fisher et al., 1997; Gabriele et al., 2011).

A recent study comparing directive and nondirective e-mail coaching for weight loss (Gabriele et al., 2011) demonstrated both the construct validity of the measure of nondirective and directive support and the importance of measures of type of support being independent of appraisal of support. In this study, university employees wishing to lose weight were recruited by email and then randomized to 12 weeks of minimal support, nondirective support, or directive support, all administered through weekly emails from an e-coach. Participants completed measures of nondirective and directive support with reference to the e-coach. A significant interaction was found between treatment condition (nondirective or directive) and perceived support type (participant reports of receipt of nondirective and directive e-coach support), confirming both the experimental manipulation of support and the validity of the measure of it. In addition, those in the nondirective condition reported greater support satisfaction than those in directive condition, reinforcing the differentiation between support type and support appraisal. The finding that weight loss was greater in the directive than nondirective condition further reinforced distinguishing between type, appraisal, and outcome.

Present study

Substantial evidence has linked social support to improved health outcomes; however, the evidence linking specific types of support with health behaviors is more modest. The current study assessed relationships among nondirective and directive support and health behaviors in a community sample. Health behaviors may be key mediators in the relationship between social support and health. The 3 on which this study focused, physical activity, fruit and vegetable intake, and alcohol use have, along with cigarette smoking, been shown to account for an estimated 36.8% of all deaths in the US (Mokdad et al., 2004). Based on previous work showing nondirective support is associated with a variety of positive features in health, we expected to detect a positive relationship between nondirective support

and reported fruit and vegetable intake and physical activity, and a negative relationship between nondirective support and alcohol consumption.

Method

Participants

Participants consisted of a convenience sample of community members recruited through local health fairs and the Washington University Medical School Volunteers for Health Program. Eligible participants were between 40 and 70 years old and had the ability to read English. Most previous studies were conducted with primarily European American samples, which might limit generalizability of results to the general population. Therefore, in the present study African Americans were oversampled.

Procedures

Procedures were approved by the Institutional Review Board for Human Subjects at Washington University School of Medicine. Prior to completing the present study, all participants were informed of the confidentiality of their responses and the voluntary nature of the study. They then provided written consent and completed a battery of questionnaires assessing social support, general health status, and health behavior. Questionnaires were self-report measures and took approximately 30–45 min to complete. Participants were compensated with a \$10 American Express Gift Cheque for their time.

Measures

Directive and nondirective support

The Social Support Inventory (see Gabriele et al., 2011) was used to measure perceptions of received directive and nondirective support. This measure contains 16 items. Eight items assess nondirective support (e.g., “Cooperated with you to get things done”) and 8 items assess directive support (e.g., “Solved problems for you”). Using a 5-point scale ranging from 1 (not at all typical) to 5 (very typical), participants indicated how typical each statement was of “the kind of support you receive from those who are helpful or supportive to you.”

Health behaviors

The Finnish Adult Health Behavior Monitoring System (Harro et al., 2006) assessed alcohol intake, and physical activity, as these behaviors have been associated with high

rates of morbidity and mortality (see Mokdad et al., 2004). Items assessed alcoholic drinks consumed in previous 7 days, and frequency of 30 min of moderate to vigorous intensity physical activity.

Fruit and vegetable intake

Selected items from the Behavioral Risk Factor Surveillance Survey (CDC, 2003) assessed fruit and vegetable intake. Participants were asked to report how often they ate or drank certain foods (e.g., fruit juice, fruit, salad, potatoes, vegetables), both at home and away from home. They responded how many times per day, week, month, or year they consumed these items. Example of items are “How often do you drink fruit juices such as orange, grapefruit, or tomato?” and “Not counting fruit juice, how often do you eat fruit?”

Statistical Analyses

We used factor analyses to assess the latent structure of Social Support Inventory items, and to determine whether items loaded onto 2 factors (1 representing nondirective support and 1 representing directive support) as shown in previous samples (e.g., Harber et al., 2005; Øyeflaten et al., 2010). Oblimin rotation was used. As suggested by Tabachnick and Fidell (2007), items were considered to load on a factor if the loading was greater than 0.60 on the primary factor and less than 0.40 on any additional factors. Items not meeting these criteria were removed and a subsequent analysis was conducted with remaining items to ensure that no items were cross loading on factors. Similar procedures were used to refine the measures of nondirective and directive support in a Norwegian sample regarding relationships with subjective health complaints (Øyeflaten et al., 2010).

A series of hierarchical regression analyses assessed relationships among nondirective support, directive support, and health behavior. In these analyses, we were interested in the unique variance explained by nondirective and directive support. Separate analyses were conducted with physical activity, fruit and vegetable intake, and alcohol intake entered as dependent variables. In each analysis, age, gender, education, and ethnicity were entered as a block in the first step. In the second step, nondirective and directive support were entered as a block.

Results

Participant Characteristics

Participants ($N = 304$) had an average age of 53.12 years ($SD = 6.30$; range 40–70 years), and most (76.6%) were

female. African Americans were oversampled, resulting in a sample of 53.6% African Americans and 45.7% European Americans. Participants had an average of 14.83 (SD = 3.37) years of education. Marital status was as follows: 44.9% married, 22.4% divorced, 16.8% never married, 7.6% widowed, 5.9% separated, and 2.3% unmarried, but in a committed relationship.

Forty-two percent of the sample reported having hypertension, 24.8% reported having hypercholesterolemia, and 18.5% reported having Type II Diabetes. Self-reported body mass index (BMI) ranged from 18.12 to 62.13 ($M = 29.51$, $SD = 14.84$). A majority of the sample was overweight or obese (28.5% normal weight, 30.8% overweight, and 40.7% obese). Nearly half (46.9%) of participants indicated that they had smoked at least 100 cigarettes, cigars, or pipes in their lifetime. Of these participants, approximately two-thirds (67.7%) reported no longer smoking; thus, 15.1% of the total sample currently smoked. On a question inquiring about health status, 40.9% reported “good” health, 30.0% reported “reasonably good” health, 21.5% reported “average” health, and 7.6% reported “rather poor” health.

Health behavior

Diet and exercise behaviors

Participants reported eating an average of 2.87 (SD = 2.88) servings of fruit and vegetables a day. Only 15% of participants reported consuming the recommended 5 servings of fruits and vegetables a day. Approximately 5% of participants reported that they could not exercise do to an illness or disability. Of the remaining participants, 9.5% reported exercising daily, 15.1% reported exercising 4–6 times per week, 23.9% reported exercising 2–3 times a week, 17.9% reported exercising once a week, 13.3% reported exercising 2–3 times a month, and 20.4% reported exercising a few times a year.

Alcohol use

Participants reported drinking an average of 1.86 alcoholic drinks per week (SD = 4.17; range = 0–36). Most participants (91.4%) reported drinking less than 7 drinks per week, 5.3% reported drinking between 7 and 13 drinks per week, 2.6% reported drinking between 14 and 20 drinks per week, and 0.7% reported drinking more than 21 drinks per week.

Refining measure of social support for this sample

Factor analyses were used to determine whether or not items on the Social Support Inventory loaded onto 2 factors (nondirective support and directive support), as shown in

previous samples (e.g., Harber et al., 2005; Øyeflaten et al., 2010). Two factors were identified each with eigenvalues exceeding 1.0. An inspection of the scree plots indicated an elbow-break after the second factor. In the initial analyses 7 items loaded on the nondirective factor and 4 items loaded on the directive factor. These 2 factors explained 58.8% of the variance. In a second analysis with only these 11 remaining items, 1 item did not meet criteria for loading on a factor (0.464 on nondirective factor and 0.544 on directive support factor). This item was removed leaving 7 nondirective items ($\alpha = 0.89$) and 3 directive items ($\alpha = 0.74$). See Table 1 for factor loadings. Subscale scores were created by taking the mean score of the items loading on each factor.

Do nondirective and directive support influence health behavior?

Hierarchical regression analyses assessed the unique contributions of nondirective and directive support to each health behavior outcome: physical activity, fruit and vegetable intake, and alcohol intake. Analyses controlled for demographic variables (age, gender, education, and ethnicity) entered as a block in the first step. Nondirective and directive support variables were then entered as a block in the second step. This process allowed us to investigate the unique relationships of nondirective and directive support to each health behavior.

Physical activity

The first step of the model containing demographic variables was significant, $F(4, 265) = 2.44, p < 0.05, R^2 = 0.04$. The hypothesized effect for nondirective support was significant, $\beta = 0.14, p < 0.05$, whereas the effect for directive support was not significant, $\beta = -0.04, p = 0.52$. The overall change in variance from the addition of the support variables to the model containing only demographic variables was not significant, R^2 change = 0.02, $p = 0.11$.

Fruit and vegetable intake

A second hierarchical regression analysis examined relationships with fruit and vegetable intake. The first step of the analysis containing demographic variables was significant, $F(4, 284) = 5.65, p < 0.01, R^2 = 0.07$. The addition of the second step of the model was significant, $F(6, 288) = 4.81, p < 0.01, R^2$ change = 0.02, $p < 0.05$. Significant effects were found for female gender, $\beta = 0.13, p < 0.05$, education, $\beta = 0.18, p < 0.01$, and nondirective support, $\beta = 0.15, p < 0.05$, but not directive support, $\beta = -0.04, p = 0.53$.

Table 1 Factor analysis factor loading for pattern matrix

	Original analysis		Second analysis	
	Nondir	Directive	Nondir	Directive
Ask you how you are doing	0.875	−0.172	0.846	−0.126
Cooperate with you to get things done	0.794	−0.028	0.793	−0.004
Make it easy for you to talk about anything you think is important	0.773	0.013	0.755	0.023
Ask if you need help	0.732	0.059	0.746	0.032
Show interest in how you are doing	0.732	−0.061	0.727	−0.077
Are available to talk anytime	0.683	0.042	0.662	0.040
Tell you to feel proud of yourself	0.661	0.106	0.679	0.109
<i>Don't let you dwell on upsetting thoughts</i>	0.468	0.287		
<i>Offer a range of suggestions</i>	0.434	0.400		
Tell you what to do	−0.252	0.775	−0.143	0.696
Point out harmful or foolish ways you view things	−0.087	0.734	−0.019	0.761
Push you to get going on things	0.168	0.650	0.255	0.644
Give you clear advice on how to handle problems	0.398	0.607	0.464	0.544
<i>Take charge of your problems</i>	0.163	0.525		
<i>Provide information so you understand why you are doing things</i>	0.365	0.519		
<i>Solve problems for you</i>	0.301	0.458		

Items in italics did not meet criteria in analysis 1 and were not entered in analysis 2. Items in bold met criteria for both analyses

Analyses used oblimin rotation with Kaiser normalization. In first analysis, all items entered. In second analysis, used items from first analysis that loaded >0.600 on the primary factor and <0.400 on secondary factor

Alcohol intake

A third hierarchical regression analyses assessed relationships with alcohol intake. The first step of the analysis containing demographic variables was significant, $F(4, 284) = 6.45$, $p < 0.01$, $R^2 = 0.08$. The addition of the second step was significant, $F(6, 288) = 5.91$, $p < 0.01$, R^2 change = 0.03, $p < 0.01$. Significant effects were found for male gender, $\beta = 0.24$, $p < 0.01$, European American race, $\beta = 0.14$, $p < 0.05$, and nondirective support, $\beta = -0.18$, $p < 0.01$, but not directive support, $\beta = 0.02$, $p = 0.74$.

Moderation by demographic variables

Exploratory post hoc analyses assessed whether gender, education, or ethnicity moderated the relationship between support and the health behavior outcomes. Significant interactions were found between gender and nondirective support, $p < 0.01$. As shown in the previous regression analyses, males reported drinking more drinks per week than females ($M = 3.79$, $SD = 6.79$ vs. $M = 1.27$, $SD = 2.70$). Regression analyses predicting alcohol intake were run separately by gender. Nondirective support was related to alcohol intake in males, $\beta = -0.32$, $p < 0.05$, but not females, $\beta = -0.09$, $p = 0.19$. There was no influence of directive support on alcohol intake in either males, $\beta = -0.03$, $p = 0.80$, or females, $\beta = -0.02$, $p = 0.81$.

Table 2 Standardized coefficients, R^2 , and R^2 change for final step of regression models with physical activity, fruit and vegetable intake, and alcohol intake as dependent variables

	Physical activity	Fruit and vegetable intake	Alcohol consumption
Standardized coefficients (β)			
Age	−0.045	0.004	−0.021
Female	−0.105	0.129	−0.240**
European American	0.117	0.062	0.138*
Years education	0.089	0.176**	0.012
Nondirective support	0.139*	0.151*	−0.180**
Directive support	−0.042	−0.039	0.021
R^2	0.052*	0.074**	0.112**
R^2 change	0.016	0.019*	0.028*

* $p < 0.05$; ** $p < 0.01$

Together, results from these analyses showed a similar pattern of findings in which nondirective support was associated with more positive health behaviors and directive support had no relationship to health behaviors (see Table 2).

Discussion

The present study explored relationships among nondirective support, directive support, and 3 health behaviors:

physical activity, fruit and vegetable intake, and alcohol use. Our sample consisted of community volunteers in a Midwestern city who were predominantly female and overweight/obese and approximately equally representative of African Americans (53.6%) and European Americans (45.7%). Many participants reported a diagnosis of hypertension, hypercholesterolemia, or type 2 diabetes, and reported at least average health. After controlling for demographic variables (e.g., age, gender, education, ethnicity), nondirective support was associated with greater physical activity, greater fruit and vegetable intake, and lower alcohol use. In contrast, directive support was not associated with these health behaviors.

Our findings are supported by a growing body of literature suggesting the benefits of nondirective support for psychological well-being and health behaviors. In a study of adults hospitalized with diabetes, perceived receipt of nondirective support from friends 1 month after hospitalization was associated with lower depressive scores 3 months after hospitalization (Fisher et al., 1996). Similarly, in a study of adults with Multiple Endocrine Neoplasia Type 2 or Sporadic Medullary Thyroid Cancer, nondirective support was associated with lower depression and anxiety scores (Kung et al., 2004). In another study of patients with non-small cell lung cancer, nondirective support was associated with adaptive coping (Walker et al., 2006). Turning to health behavior, in a study assessing relationships among nondirective support, directive support, HIV knowledge, perceived benefits and barriers to condom use, and self-efficacy for condom use, nondirective support was associated with condom use self-efficacy and perceived benefits (Gabriele et al., 2010). Additionally, among women but not men, nondirective support was associated with greater knowledge and directive support was associated with lower knowledge. The findings from the current study add to this literature by showing that nondirective support is also positively associated with a variety of health behaviors in a community sample.

As noted in the Introduction, a randomized control trial found directive e-coach support to be associated with greater 12-week weight loss than nondirective support in overweight women (Gabriele et al., 2011). That finding of greater utility of directive support appears to contradict the general pattern of associations between nondirective support and health. This may be explained within the context of the Transtheoretical Model. In the weight loss study (Gabriele et al., 2011), participants enrolled in a short-term program for weight loss. Because participants took the initiative to enroll in the weight loss program and were ineligible to participate if they recently lost weight, a majority of participants were likely either in the preparation or action stages. In these stages, individuals learn new skills and stimulus control techniques. Therefore, in this

situation and in similar situations, having someone take control and tell you exactly what to do may be beneficial.

In contrast to the e-coach study, the present convenience sample of community volunteers likely included individuals at a variety of points of readiness to change the health behaviors assessed. This reflects other research guided by the Transtheoretical Model in which the majority of samples are in the precontemplation, contemplation, and maintenance stages of change regarding specific behaviors (Marcus et al., 1992).

The current study also raises questions regarding crucial features of social support. That perceived available support has been found most closely related to health and well-being in a number of studies over the years (Cohen et al., 1985; Heaney & Israel, 2008; Helgeson, 1993; Lakey, 2010), has led some to conclude that it may not be support per se that influences health behavior, but rather aspects of support related to social cognitive variables. If it is the perception of support that is critical and if that perception is a stable personality characteristic (Den Ouden et al., 2010; Sarason et al. 1990), then interventions directed toward providing or manipulating support may be less effective than interventions focused on perceptions of support.

The present study showed that a measure of received nondirective support comprised of reported supportive behaviors (as opposed to perceptions of available support or support satisfaction) was associated with 3 key health behaviors. Similarly, the previously described study of email coaching for weight loss (Gabriele et al., 2011) demonstrated that directive support can be manipulated and lead to greater weight losses than nondirective support in a 12-week intervention. Together these findings suggest that different types of actual supportive behaviors can be important in health. Future studies should assess exactly how these factors (i.e., nondirective support and health behaviors) influence one other.

The influences of nondirective and directive support operate, no doubt, within the context of other features of social influence and support. For example, previous research suggests that certain types of relationships (i.e., marital, parental) bring about both a sense of meaning as well as obligation in individuals, which lead to lower rates of disadvantageous health behaviors and higher rates of positive health behaviors (Lewis & Butterfield, 2007; Umberson, 1987; Umberson & Montez, 2010). It may well be that nondirective support and directive support are features of how relationships convey meaning and obligation. For example, the present findings might lead to the prediction that promoting obligation in a way that is nevertheless nondirective may be more likely to promote healthy behaviors promoting obligation in a manner that constrains choices and feelings.

There may also be relationships between these measures of support and conflict in relationships. Conflictual relationships may be characterized in part as high in directive and low in nondirective support. This may lead to the assumption that directive support overlaps with relationship conflict. Counter to this, it is important to recall the findings that directive support may be advantageous in some circumstances and effective in encouraging healthy changes such as weight loss (Gabriele et al., 2010). Cutting across each of these considerations, future research should examine relationships among social support and other social and relationship factors such as obligation, commitment, and conflict.

Limitations of this study include that the sample was a convenience sample of community volunteers in St. Louis and may not be representative of the entire population. In addition, this study's cross-sectional design does not allow us to determine causality, but rather only show that an association between nondirective support and more positive health behaviors exist. Due to the brevity of questions related to health behavior and support on this survey, factors, which may aid the interpretation of findings, such as stage of change, were not assessed. Also, health behaviors were assessed using short self-report measures. Objective measures, structured interviews, or even longer self-report measures may better capture health behavior.

In conclusion, this study showed that nondirective support is associated with positive health behaviors. This finding adds to the growing literature on the benefits of nondirective support to psychological well-being and health. In addition, this study provides evidence for the predictability of key health behaviors by a measure of received supportive behaviors, as opposed to perceived availability of support or satisfaction with it. This suggests that future interventions should address the content and delivery of support as well as its perception and appraisal.

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