

THE RELATIONSHIP BETWEEN SOCIAL SUPPORT, LIFESTYLE BEHAVIOURS, COPING AND HEALTH IN THE ELDERLY

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Promotion of health in the elderly has become a priority as both the number and proportion of older persons in our population escalates. Social support is a critical variable.

There is diversity in definitions of social support in the literature (Cobb, 1976; House, 1981; Weiss, 1974). Weiss (1974) proposed that only social relationships could provide certain requirements for well-being in humans. He identified the following six categories of relational provisions or components of social support: attachment; social integration including a sense of companionship; opportunity for nurturance or being responsible for another; reassurance of worth; a sense of reliable alliance particularly from family; and the provision of guidance. Like Weiss (1974), many authors have emphasized the multidimensional nature of social support and have recommended its measurement in this context (Barrera, 1981; Starker, 1986).

There are two principal process models that describe the relationship between social support and health, a main or direct-effect model and an indirect-effect or buffering model. In the buffering model, social support protects the individual from the potentially harmful effects of life stress (Cobb, 1976). In the direct-effect model, social support exerts a positive influence on health that is independent of the experience of stress. Some authors have suggested that there is evidence that both of these process models operate in the social support-health interaction (Cohen & Wills, 1985; Turner, 1981). They suggest that main and indirect effects of social support are exerted upon both physical and psychological health.

Researchers have examined the direct relationships between social support and physical and psychological health in the elderly. Blazer (1982) has found that perceived social support, or the individual's objective appraisal of sup-

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port, has a high predictive value for mortality in persons over 65 years, after a 30-month interval. He suggested that perceived social support may be particularly significant in later life when environment is very influential in disease onset and aging individuals perceive themselves to be more vulnerable (Blazer, 1982).

Turner, Frankel and Levin (1983) have examined the associations between social support and psychological well-being in a sample of 989 physically disabled community residents, aged 18 to 92 years. Psychological well-being was measured in terms of such symptoms as anxiety, depression and anger. Findings were indicative of a modest, but reliable, association between social support and psychological well-being.

Other investigators have failed to find significant relationships between social support and physical or psychological health in the elderly (Fuller & Larson, 1980; Laschinger, 1984). These inconsistent and inconclusive findings have been attributed to differences in the conceptualization of the social support variable as well as to design and measurement difficulties (Norbeck, 1981; Rock, Green, Wise & Rock, 1984).

Social support is also thought to have an indirect relationship to health through associations with lifestyle behaviours and coping. These latter variables have been shown to be directly linked to physical and psychological health. Several investigators have described the relationship between health and such lifestyle behaviours as exercising, eating a balanced diet and receiving regular medical follow-up. Belloc and Breslow (1972) have reported that functional health status was significantly related to lifestyle practices, independent of age, sex and economic status, in a group of 6,828 adults. A study conducted by Mechanic and Cleary (1980) revealed that both psychological well-being and subjective health status were positively associated with lifestyle behaviours in adults. Other investigators have made the link between social support and lifestyle behaviours. Hubbard, Muhlenkamp and Brown (1984) have reported a strong, positive association between perceived social support and lifestyle behaviours in a group of 97 older adults. These findings suggest that social support may exert an indirect "positive" effect upon health through an influence on lifestyle behaviours.

Moos (1984) has developed a conceptual framework that describes the linkages between social support, coping responses and health. In this framework, social climate factors, including social support, influence exposure to stress and the selection of coping responses; these in turn have an impact upon health and well-being. Billings and Moos (1981) have found that, in a sample of 194 families, both active cognitive coping methods and social support were significantly and negatively associated with mood (depression and anxiety) and physical symptoms (headaches and insomnia).

The purpose of this study was twofold: to explore the direct relationships between social support and health and to explore the indirect relationships between social support and health through variables of lifestyle behaviours and coping in a sample of elderly persons living in the community. The proposed relationships between the study variables are illustrated in Figure 1.

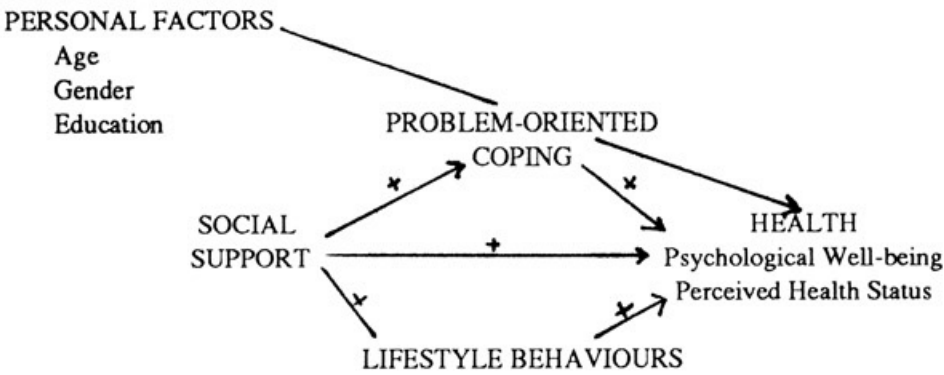


Figure 1
Hypothesized model of the relationships between social support, lifestyle behaviours, coping, health and personal factors.

Method

Sample

A total of 50 elderly persons was studied. Twenty-five subjects were randomly selected from a public health nursing agency, and 25 subjects constituted a convenience sample from a seniors' community centre. These two centres were used in order to obtain a sample of the elderly that represented both well seniors (seniors' community centre) and seniors with physical or other types of limitations in health status (public health agency). The variable *centre* was used to refer to the sample source of either the seniors community centre (0) or the public health agency (1). The sample criteria included the following: adult aged 65 to 80 years, subject able to speak and understand English and subject does not reside in a nursing home.

The mean age of the subjects was 72.5 years. Ten subjects (20%) were male and 40 (80%) were female. All of the subjects were Caucasian. Eleven subjects (22%) were married and 39 (78%) were unmarried. Of the unmarried subjects, 85% ($n=33$) were widowed and 15% ($n=6$) were separated, divorced, or never married. The mean educational level was 10.2 years: 32% of the subjects had eight or fewer years of education. Nineteen subjects (38%) reported a total annual income of less than \$10,000 and an

additional 16 subjects (32%) reported an annual income that ranged from \$10,000 to \$15,000.

Instruments

The five measures used in this study included measures of perceived social support, lifestyle behaviours, coping, psychological well-being and perceived health status. Demographic data were collected for age, sex, marital status, ethnicity, education, occupation and income.

Personal Resource Questionnaire (PRQ 85). Perceived social support was measured using the PRQ-II, an instrument based on Weiss's (1974) model of relational provisions (Brandt & Weinert, 1981). Subjects rated each of the 25 items on a seven-point Likert-type scale ranging from "strongly disagree" (1) to "strongly agree" (7). A total social support score was calculated by adding the scores of 25 items, with higher scores reflecting higher levels of perceived social support. Crohnbach's alpha for the PRQ-Part II has been reported as .87 (Weinert, 1987); in this study Crohnbach's alpha was .90.

Personal Lifestyle Questionnaire (PLQ). The PLQ is a measure of the extent to which individuals engage in certain lifestyle behaviours (Hubbard, Muhlenkamp and Brown, 1984). The 24 items relate to six categories of lifestyle behaviours: exercise, nutrition, relaxation, safety, substance use and general promotion. Subjects rated the frequency with which they practised certain lifestyle behaviours using a four-point Likert-type scale ranging from "never" (1) to "almost always" (4). Scores for the 24 items were added so that higher scores were reflective of more positive lifestyle practices. The reported total scale alpha was .76 (Hubbard et al., 1984); in this study Crohnbach's alpha was .34.

Jalowiec Coping Scale (JCS). The JCS is a 40-item instrument that was used to measure coping behaviours (Jalowiec, 1984). The 40 coping behaviours are grouped into one of two subscales: problem-oriented coping behaviours, such as goal setting and trying to maintain control and affective-oriented coping behaviours such as crying and getting mad. Subjects rated the frequency with which they used each of the 40 coping behaviours on a five-point Likert-type scale ranging from "never" (1) to "almost always" (5). Scores for each of the two subscales were calculated by summing the values for corresponding items. Higher scores were indicative of more frequent use of those coping behaviours. Jalowiec, Murphy, and Powers (1984) reported an alpha coefficient of .86. In this study, the alpha coefficients for the total scale and the problem-oriented and affective-oriented subscales were .83, .80 and .67 respectively.

Affect Balance Scale (ABS). Psychological well-being was measured by the ABS (Bradburn & Caplovitz, 1965). The ABS is composed of ten items, five

of which reflect positive affect and five of which reflect negative affect. The positive affect subscale relates to such positive mental health feelings as being pleased, proud and excited. The negative affect subscale relates to mental illness factors, such as depression. The format of the questionnaire is that of a three-point Likert-type scale with possible responses including "never", "sometimes" and "often". Higher scores in the positive and negative subscales were indicative of more positive and more negative affect. The alpha coefficients for the positive and negative affect subscales were .83 and .81 respectively (Bradburn, 1969). In the current study, the alpha coefficient for the positive affect subscale was .64 and for the negative affect subscale .65.

Perceived Health Status. Perceived health status was measured by two items. Subjects rated their current health status on a four-point Likert-type scale ranging from "very poor" (1) to "very good" (4). Subjects also rated their health status, in comparison to others their age on a three-point Likert-type scale ranging from "worse than average" (1) to "better than average" (3). The two scores used for perceived health status are referred to as *current health* and *comparative health*, respectively.

Procedure

The nurse-investigator used a table of random numbers to select 25 subjects from a list of 210 eligible subjects who had been referred to the public health nursing agency over a six-month period. Subjects were sent two introductory letters about the study, one from the director of nursing and one from the investigator. Subjects were then contacted by telephone and home visits were scheduled to collect the data. Thirteen subjects to whom letters had been sent were not interviewed for reasons which included death, ($n = 3$), relocation ($n = 3$), admission to nursing home ($n = 2$), refusal to participate due to illness ($n = 2$) and other reasons ($n = 3$). The investigator visited the seniors' centre, four times on random days and at random times, in order to select a convenience sample of 25 subjects.

All subjects who agreed to participate in the study signed consent forms. All of the questionnaires were presented in interview format; six 5" x 8" cards were typed for the subjects to hold and refer to when answering questions involving Likert-type scales. Interviews took an average of one hour to complete.

Results

Data analysis was completed by using SPSS. Independent t -tests, Pearson Product Moment Correlation coefficients and multiple regression analyses were computed. Statistical significance for all tests was .05.

Differences between samples

The mean scores of the two sample centres for the study variables are compared in Table 1. The differences between the two samples were examined using independent *t*-tests. No significant differences were found between the two samples in the demographic variables, social support scores, lifestyle behaviour scores and coping subscales. Subjects selected from the public health agency rated their perceived current health status as significantly lower than did subjects from the seniors' centre ($t(48) = -3.23, p < .05$); they also rated their perceived comparative health status as significantly lower than did subjects from the seniors centre ($t(48) = -2.71, p < .05$). Subjects from the public health agency reported significantly lower scores on the positive affect subscale ($t(48) = -1.98, p < .05$) and significantly higher scores on the negative affect subscale ($t(48) = 2.75, p < .05$) of the ABS.

Table 1

Mean Scores of Sample Centres for Study Variables

Variable	Mean Scores	
	Seniors Community Centre	Public Health Centre
Age	72.28	72.80
Education	10.12	10.36
Social Support	136.92	130.20
Lifestyle Behaviours	73.97	72.32
Affective Coping	58.32	61.20
Problem Coping	44.04	43.28
Current Health	3.24	2.68
Comparative Health	2.64	2.20
Positive Affect	6.40	5.20
Negative Affect	1.80	3.44

The two samples were combined for further analyses. The means, standard deviations and range of possible scores for the study instruments appear in Table 2.

Table 2

Subject Means and Standard Deviations for Study Instruments

Instrument	Mean	Standard Deviation	Range of Possible Scores
PRQ-Part II-Social Support	133.3	23.3	25-75
PLQ-Lifestyle Behaviours	73.1	7.0	24-96
JCS-Problem-Oriented Coping	43.7	9.9	15-75
JCS-Affective-Oriented Coping	59.8	10.5	25-125
ABS-Positive Affect	5.8	2.2	0-10
ABS-Negative Affect	2.6	2.3	0-10

Relationships between study variables

Pearson Product Moment Correlation Coefficients were computed to determine the relationships between the variables of centre, social support, lifestyle behaviours, problem and affective-oriented coping, positive and negative affect, current health and comparative health status (See Table 3). The variables of social support, lifestyle behaviours and problem-oriented coping were significantly and positively associated with positive affect. Social support and lifestyle behaviours were significantly correlated with perceived current health and comparative health and were negatively associated with negative affect. Furthermore, social support was significantly correlated with both lifestyle behaviours and problem-oriented coping strategies.

The demographic variables of age, sex and marital status were not significantly related to any of the variables in the correlation matrix. Education and income were only significantly correlated with problem-oriented coping, $r = .26$ and $r = .24$, respectively.

Table 3

Variable Correlation Matrix

Variables	Variables	CE	SS	LI	PC	AC	PA	NA	CH
Centre	(CE)*								
Social Support	(SS)	-.15							
Lifestyle	(LI)	-.21	.48**						
Problem Coping	(PC)	-.04	.28*	.22					
Affective Coping	(AC)	.14	.07	.18	.59**				
Positive Affect	(PA)	-.28*	.54**	.27*	.25*	.08			
Negative Affect	(NA)	.37**	-.43**	-.38**	-.11	.21	-.32*		
Current Health	(CH)	-.42**	.27*	.24*	.16	-.09	.42**	-.36**	
Comparative Health	(COM)	-.36**	.48**	.53**	.17	.00	.54**	-.33*	.54**

* $p < .05$; ** $p < .01$.

* Abbreviations in parentheses refer to corresponding variables.

Table 4

Multiple Stepwise Regression of Comparative Health, Positive Affect, Lifestyle and Problem Coping

Dependent Variable	Independent Variable	Standardized Regression Coefficient	R ²	F	p
Comparative Health	Centre	-.18*	.13		
	Lifestyle	.40*	.35	12.77	.0000
Positive Affect	Centre	-.10	.08		
	Social Support	.38*	.33	11.81	.0001
Lifestyle	Centre	-.14	.04		
	Social Support	.46*	.25	8.01	.0010
Problem Coping	Centre	-.04	.00		
	Social Support	.28	(ns)		.0542

* $p < .05$

Multiple stepwise regression analysis provided an estimate of the percentage of variance in any one dependent variable that could be accounted for by certain independent variables (See Table 4). In each regression model, the variable of centre (referring to the sample source) was entered first, in order to control for the effects of this variable (Polit and Hungler, 1987). Apart from centre, only those variables with a significant ($p < .05$) standardized correlation coefficient were entered into the regression model.

A significant proportion (35%) of the variance of perceived comparative health status was accounted for by the variables of centre and lifestyle. As can be seen from Table 4, the variable of centre accounted for 13% of the variance in comparative health. The variable of lifestyle accounted for the remaining 22% of the total 35% variance in comparative health. The variables centre and social support together accounted for 33% of the variance in psychological well-being or positive affect. Excluding the effects of centre, social support alone accounted for 25% of the variance in positive affect. A substantial amount of the variance in lifestyle behaviours (25%) was accounted for by centre and social support. Social support alone accounted for 21% of the variance in lifestyle behaviours. Social support was not a significant factor in explaining the variance in problem-oriented coping strategies; nor was coping a significant factor in explaining health.

Limitations

Some caution should be exercised in the interpretation of the study findings. Part of the sample was non-random in nature and the total sample size was quite small. The sample itself was somewhat biased in that it included only seniors who were service users of either the public health agency or the seniors community centre. Further, the study design was cross-sectional and did not permit assessment of any changes in variables over time. Finally, the reliability coefficients of the ABS and the PLQ were found to be relatively low for this sample of elderly persons, as compared to other studies (Hubbard et al., 1984; Bradburn, 1969) conducted with adults. This may have been because of the limited variability of instrument scores and the small sample size of the study.

Discussion

In this group of community-dwelling elderly, social support was found to have a strong, direct relationship with health as well as significant, indirect relationships with health through the variables of problem-oriented coping and lifestyle behaviours. Elderly clients who reported higher levels of social support reported much higher levels of perceived health. Further, health perceptions have been shown to be a significant predictor of mortality in the elderly (Mossey & Shapiro, 1982). Thus, the strong linkages found between

perceived health and social support suggest that social support may play a vital role in the maintenance of physical health in the elderly.

Social support was also strongly associated with psychological well-being in this sample of the elderly. Consistent with the findings of Turner, Frankel and Levin (1983), social support was negatively related to negative affect factors such as anxiety and depression. Thus, the higher the level of perceived social support, the less likely the person was to experience anxiety or depression. Not only was social support found to be significantly correlated with positive affect, but it also accounted for 25% of the variance in positive affect in the regression analysis. Study findings suggest that social support may have positive effects upon the mental health of the elderly. As Turner, Frankel and Levin (1983) note however, it is also probable that psychological well-being will affect the perception of social support and, perhaps, the ability to use and strengthen this support. Thus, while the model of the proposed causative linkages between study variables (Figure 1) is based on major findings in the literature, it does not reflect the possible circular relationships of variables upon one another.

Social support was found to have a positive relationship to health through the variable of lifestyle behaviours. It was highly correlated with lifestyle and accounted for 21% of the variance in this factor. Lifestyle behaviours were, in turn, strongly associated with both physical and psychological health in the elderly. Lifestyle accounted for 22% of the variance in perceived comparative health status. These results suggest that elderly persons with higher levels of perceived social support engage in more positive lifestyle behaviours; thus they rate their health at higher levels. The possibility exists, however, that elderly persons who perceive their levels of health to be high and who practise more positive lifestyle behaviours may then establish more supportive relationships leading to higher levels of perceived social support. Once again, we cannot preclude the possibility of a circular relationship between variables.

While social support was strongly correlated with problem-oriented coping, it did not account for a significant proportion of the variance in this variable. A significant relationship was found only between problem-oriented coping and the positive affect measure of health. Further, problem-oriented coping did not account for a significant amount of the variance in any of the measures of health. Cwikel, Dielman, Kirscht and Israel (1988) have found active or problem-oriented coping styles to be more strongly related to mental health status than to subjective or physical health. They suggest, however, that time plays a major role: active coping, along with social integration, exert positive effects first on psychological health, then on subjective health and, ultimately, over time, on physical health. The cross-sectional design of this study precluded such longitudinal investigations. Furthermore, it may be

that coping plays a more significant role during periods of stress. Thus, if the study sample was in a period of relatively minimal stress, coping would not account for a significant amount of variance in health.

The demographic variables of age, gender and marital status were not significantly related to any of the study variables. This was not consistent with the findings of other researchers. For example, Hubbard, Muhlenkamp and Brown (1984) found that married subjects reported higher levels of social support. The lack of significant findings may be attributable to the small sample size and the narrow age range (65-80 years) of subjects in this study.

This research underlines health professionals' need for greater emphasis on interpersonal resources and social support in health promotion strategies. Assisting clients to identify and effectively utilize available sources of social support has the potential for increasing levels of perceived social support and indeed, for improving health. Working with aging individuals to build and maintain supportive relationships must be accepted as a central role for health care professionals. Family and significant others, who are the major sources of social support for seniors, should be co-participants with the client and the health care professional in the planning and provision of care. Another strategy may involve the referral of elderly clients to such resources as seniors' centres and volunteer visiting services where opportunities for the development and maintenance of social relationships are provided. Because seniors centres frequently provide physical activity programs as well as social programs, involvement in such centres may improve both social support and positive lifestyle behaviours, thereby promoting health of seniors. Health care professionals can be effective advocates for accessible community programs that offer seniors opportunities for both social support and for participation in positive lifestyle behaviours. Finally, professionals are encouraged to foster the attitude within the community that elderly persons can practise healthy behaviours that have a positive influence on their well-being.

Future research should include a longitudinal study design that assesses the changes in, and effects of, these study variables over time. The effectiveness of intervention strategies to improve social support upon the health of individuals should also be assessed (Crawford, 1987; Norbeck & Tilden, 1988).

This study has identified the relationships between social support, lifestyle behaviours, coping and health in a sample of elderly persons. Health care professionals are challenged to be innovative and visionary in applying these results to the promotion of health of the community-based elderly population.

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RÉSUMÉ

La corrélation entre les services sociaux et l'état de santé des personnes âgées

La corrélation entre les services sociaux et l'état de santé des personnes âgées n'a pas été établie de façon logique ou concluante. Il y a donc lieu d'analyser la question plus en profondeur non seulement en raison de la proportion croissante de personnes âgées dans la population totale, mais également de l'utilisation accrue des services de santé associée au vieillissement. On a donc étudié la corrélation existant entre les services sociaux, les modes de vie, les facultés d'adaptation et l'état de santé d'un échantillon de 50 personnes âgées de 65 à 80 ans. Divers questionnaires ont été administrés aux sujets sous forme d'entrevue pour mesurer les variables suivantes: services sociaux (questionnaire sur les moyens personnels), bien-être psychologique (échelle d'équilibre affectif), modes de vie (questionnaire sur les modes de vie), facultés d'adaptation (échelle d'adaptation de Jalowiec); état de santé perçu et certaines variables démographiques. On a établi des corrélations positives et significatives entre les services sociaux d'une part, et l'état de santé perçu et le bien-être psychologique d'autre part. Les services sociaux comptent pour 25 % de l'écart sur le plan de l'affect positif. Des corrélations positives significatives ont également été établies entre les services, les modes de vie et les facultés d'adaptation devant un problème. Étant donné les corrélations multiples et significatives qui existent entre les services sociaux, les modes de vie et l'état de santé, il est possible que les interventions du personnel infirmier visant à raffermir les services sociaux ou à améliorer le mode de vie aient un effet bénéfique sur l'état de santé des personnes âgées.