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Natural Support Systems and Coping with Major Life Changes[1]

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An exploratory study is reported which sought to identify those natural support systems that enhance coping with major life changes. Subjects were 20 recent younger widows and 14 mature women recently returned to college. Support systems were classified on the bases of five alternative supportive interactions as well as on two measures of structural integration adopted from sociology and anthropology. Supports were assessed on daily logs for 14 consecutive days. Mental health was assessed via standard measures of symptomatology, mood, and self-esteem. Among supportive interactions, cognitive guidance was significantly associated with symptomatology and mood, while socializing was significantly associated with self-esteem. Both lower density (less integrated) support systems and multidimensional friendships were significantly associated with better support and mental health. Discussion centers on delineating two prototypical support systems and developing a model for conceptualizing their differential impact on coping and adaptation.

In retrospective and prospective studies of diverse populations, the occurrence of recent major life changes has been significantly associated with subsequent

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development of physical and psychological disorders (Dohrenwend & Dohrenwend, 1974). The extent and nature of the relationship, however, is not yet well understood. While undergoing recent major life changes puts one in a high-risk category, most such individuals do not develop serious disorders (Rabkin & Struening, 1976). A study of the recently widowed, for example, found that although many had developed serious depressive symptoms 1 month after the death of their spouse (35%), a much greater number (65%) had not (Clayton, Halikas, & Maurice, 1972). Attention has accordingly turned to delineating those factors that enhance successful coping with major life changes.

Chief among the factors hypothesized to moderate the relationship between life change and symptom development has been the presence of a helpful nature support system (NSS). A NSS is defined as the set of presently significant others who are either members of one's social network (i.e., family or friends) or affiliated non-mental health professionals (e.g., physician, clergy). Individuals with helpful NSS are hypothesized to adapt more successfully under stress than individuals who lack such systems (e.g., Caplan, 1974; Cassell, 1975; Cobb, 1976).

How might NSS enhance adaptation? Caplan (1974) suggests that these "significant others help the individual mobilize his psychological resources and master his emotional burdens; they share his tasks; and they provide him with extra supplies of money, materials, tools, skills, and cognitive guidance to improve his handling of his situation" (p. 6).

At present, however, there is little empirical validation of the role NSS may play in the coping process. While preventive (Collins & Pancoast, 1976) and therapeutic (Erickson, 1975; Speck & Attneave, 1973) NSS interventions have been enthusiastically reported, the efficacy of such interventions remains to be empirically evaluated. Findings from nonintervention studies of pregnant women (Nuckolls, Cassell, & Kaplan, 1972), unemployed men (Gore, 1978), widows and widowers (Maddison & Walker, 1967), heart attack victims (Finlayson, 1976), and hospitalized schizophrenics (Tolsdorf, 1976) are all consistent with the NSS moderator hypothesis, though this research is plagued by methodological inadequacies. In the two studies most relevant to mental health concerns (those of schizophrenics and widows), for example, results are based entirely on retrospective data gathered by interviewers not blind to the outcome status of the subjects. Moreover, as NSS are rarely systematically differentiated a priori, those findings that do emerge lack coherence and are difficult to interpret.

Several investigators have sought to articulate better models of alternative support systems by classifying NSS according to measures of structural integration adopted from social network analysis (for reviews of social network analysis in anthropology and sociology, see Barnes, 1972; Mitchell, 1974; Whitten & Wolfe, 1973). The two principal structural characteristics of NSS studied to date are the density of a NSS and the multidimensionality of friendships.

Density is generally considered the most important structural feature of a network of individuals, viewed here as a NSS. It is defined as the number of relationships that exist among the members of an individual's NSS as a proportion of the total possible number of such relationships. As individuals by definition have relations with all members of their NSS, these relationships are not included in calculating density.

The adaptiveness of dense NSS apparently may vary considerably depending on person-NSS characteristics. Hirsch (1979), for example, found that college students in low density NSS were significantly more satisfied than students in high density NSS with emotional support received during final exams. Crisis interventions into the assembled NSS of psychiatric patients, however, have sought to increase NSS density and then use the NSS as a "pressure group" to affect therapeutic change (cf. Erickson, 1975).

Whereas density measures the relatedness of various members of a NSS with each other, multidimensionality measures the concentration of important activities within particular dyadic relationships. Specifically, a relationship is termed multidimensional for any individual if and only if it involves engaging in at least two different kinds of activities or behaviors important to that individual (Hirsch, 1979). Kapferer (1969) found multidimensional or "multiplex" relationships to be an important source of support in a conflictual work situation. Satisfaction with multidimensional relationships emerged as the most powerful predictor to college students' ratings of overall satisfaction with their social network (Hirsch, 1979). In both these studies, multidimensional relationships were thought to have a greater social exchange value to the parties involved, leading them to be stronger and more reliable sources of support.

Thus, while structural variables appear promising as a means of usefully discriminating alternative NSS, at present little empirical evidence exists identifying NSS which promote mental health during periods of major life change. The present study sought to generate such data.

Specifically, the present study investigated the relationship between NSS and three principal measures of mental health: symptomatology, mood, and self-esteem. Two different subject groups were studied in order to delineate adaptive NSS variables which have some generality. Both groups were women currently undergoing major life changes: 20 recent younger widows, and 14 mature women (age 30 or over) recently returned to full-time undergraduate study. Recent younger widows are a group at particularly high-risk for both mortality and the development of more severe depression (Parkes, 1972). Returning women students assume highly ambiguous roles as they reenter a competitive, often career-directed social institution after having already begun raising a family (e.g., Geisler & Thrush, 1975). There are obviously, however, between-group differences in the context in which these changes have occurred. The widows are suffering from a significant loss which has been imposed upon them. The students, on the other hand, voluntarily chose to reenter school in an attempt to develop additional competencies.

A two-pronged strategy was pursued to identify those NSS which best enhance adaptation under stress. First, based on a synthesis of previous work (especially Caplan, 1974; Coelho, Hamburg, & Adams, 1974; Lewinsohn, 1974), five forms of interaction were delineated that might either positively or negatively affect the success of one's coping efforts. These five categories of possible support included: (a) Cognitive Guidance, defined as the provision of information or advice, or an explanation of something troubling; (b) Social Reinforcement, defined as the provision of either praise or criticism regarding specific actions; (c) Tangible Assistance, such as helping (or declining to help) with chores or child-care; (d) Socializing, such as going to the movies or to dinner with others; and (e) Emotional Support, defined functionally as an interaction which made one feel better or worse when one had already been feeling upset or under pressure. In order to obtain detailed concurrent data, standardized log forms were developed to enable subjects to rate their satisfaction with each such interaction on a daily basis. Semistructured interviews were employed to obtain convergent validity data.

NSS were also classified on the basis of the two structural variables discussed previously, i.e., density and the multidimensionality of friendships. Density was assessed via self-report, while interviewer ratings were selected to assess multidimensionality. Given the limited extent of prior research, the present study sought to assess whether density and multidimensional friendships are important NSS variables, and if so, what their effects are on supports (now considered as dependent variables) and adaptation.

In summary, the present study sought to identify those NSS which might enhance the ability of women to successfully cope with major life changes. Five potentially supportive interactions were delineated, and their relative importance to multiple measures of mental health was determined. This study sought as well to assess whether structurally contrasting NSS differ in their ability to provide effective support and enhance adaptation. NSS variables were assessed via multiple methods. Given limited prior research, this should be considered as largely an exploratory, hypotheses-generating study.

METHOD

Design

In the first set of analyses, the five categories of support served as independent variables, with measures of mental health serving as dependent variables. In the next analyses, the two NSS structural variables served as independent variables, with now both the categories of support and measures of mental health serving as dependent variables. Correlational analyses were

employed in order to take advantage of variability on scores of both independent and dependent variables.

Instruments

Category A: Measure of Life Change

Social Readjustment Rating Scale. This 43-item scale measures life changes occurring within the past 9 months. The scale has been shown to have reasonable construct validity with numerous populations (e.g., Holmes & Masuda, 1974).

Category B: Measures of Mental Health

Hopkins Symptom Checklist (HSCL). Five factors have been extracted from the 58-item HSCL: somatization, obsessive-compulsive rumination, interpersonal sensitivity, depression, and anxiety (DeRogatis, Lipman, Rickels, Uhlenhuth, & Covi, 1974). Results reported in this study refer only to a total symptom score computed by combining scores on all five scales.

Profile of Mood States (POMS). Six factors have emerged from the 65-item POMS: tension-anxiety, depression-dejection, anger-hostility, vigor-activity, fatigue-inertia, and confusion-bewilderment (McNair, Lorr, & Droppleman, 1971). Results reported in this study refer only to a total mood score computed by subtracting scores on the vigor-activity scale from the combined score on the other five scales.

The construct validity of both the HSCL and POMS has been demonstrated in studies of both clinical and normal populations across varied levels of socioeconomic status (DeRogatis et al., 1974; McNair et al., 1971).

Semantic Differential. The evaluation scale of the Semantic Differential was used to assess self-esteem. This scale has been shown to be related to change in psychotherapy and to standard attitude scales (Osgood, Suci, & Tannenbaum, 1957).

Category C: Measures of NSS Developed for This Study[3]

Social Network List. The Social Network List was developed as a means of enumerating the members of a NSS. On this self-report questionnaire, subjects listed up to 20 significant others with whom they have contact at least once during any 4- to 6-week period. Family members or relatives, friends, and

[3] Copies of these instruments are available from the author.

non-mental health professionals were specified. Measures of NSS size were computed from these data.

Daily Interaction Rating Form (DIRF). The DIRF is a self-report log in matrix format designed to track daily person-NSS interactions. Down the left side of the DIRF, subjects indicated which individuals, previously listed on the Social Network List, they had interacted with that day. Six columns went across the DIRF. In the first, they estimated how much time they had spent with each individual. The next five columns indicated specific activities (these corresponded to the five supports). For each person-activity combination that occurred that day, they indicated on 1-7 scale their satisfaction with that particular aspect of the interaction.

A mean daily satisfaction rating was calculated for each support. A measure of "overall support" was obtained by determining the mean daily rating across all five supports, and then calculating the mean of all the daily means. Construct validity data regarding an earlier version of the DIRF were reported in a study of the NSS of college students (Hirsch, 1979).

Support System Map. Density was assessed by having the women draw a "map" of their NSS. On a blank sheet of paper they listed individuals previously named on the Social Network List, and drew lines between those individuals they considered to have relationships with each other. Various measures of density were computed from this map (for formula, see Hirsch, 1979; Niemeijer, 1973).

Support System Scale (SSS). This interviewer rating scale was developed to evaluate the convergent validity of DIRF data. For each of the five supports, NSS members who had been either helpful or unhelpful were rated as to whether their un/helpfulness had been either mild, moderate, or considerable. A measure of overall support was obtained by calculating the mean of all ratings across all categories.

Friendship Dimensionality Ratings. Interviewer ratings were employed to assess the dimensionality of each friendship relationship. Interviewers rated on a 1-3 scale whether each friendship was multidimensional. A mean dimensionality value was calculated from these ratings.

Subjects

Students were contacted from a list of all University of Oregon full-time undergraduate women, age 30 or over, not enrolled in the University last year. Widows were contacted from information listed in the obituary columns of local newspapers. Only women who had been widowed for 3-7 months and whose husband had been less than 60 years old were contacted.

Initial contact of both groups was by letter describing the nature of the project. Potential subjects were then phoned, with interested women mailed a

detailed informed consent form and a questionnaire asking for demographic information. Women still wishing to participate were asked to return the demographic form.

Of those women contacted by phone, 23 of 53 widows (or 43%), and 29 of 68 students (or 43%) returned the form indicating a willingness to serve as subjects. No significant mental health differences have been found in previous research between widows who chose versus those who declined to participate (e.g., Glick, Weiss, & Parkes, 1974). Of women who returned the demographic form, 17 did not meet our criteria: 3 of the widows were over 57 years of age and 12 students had attended a community college the year before. Two additional women currently receiving psychotherapy were excluded in order to eliminate this potentially contaminating factor. One student was later dropped from the study after she declined to fill out the self-report questionnaires (believing that such data would not add anything to what she had told us in her interview).

Altogether, then, subjects were 20 recent widows, and 14 mature women who had returned to college the current academic year. Widows ranged in age from 29 to 57 years ($\bar{X}$ = 46 years), students ranged from 30 to 48 years ($\bar{X}$ = 37 years), the between-groups difference being significant, $t(32) = 4.06, p < .01$. Across both groups, women reported a mean monthly income of $658, had a mean of 14 years education, and had a mean of 2.8 children. There were no significant between-groups differences on these variables, though children of widows were significantly older than children of students, 21 vs. 12 years, $t(26) = 4.11, p < .01$. Six students were married, seven were divorced or separated, and one had never married.

Most of the women were undergoing many life changes as assessed by the Social Readjustment Rating Scale ($\bar{X}$ life change score = 279). Only two widows and three students were not in some degree of life crisis according to criteria suggested by Holmes and Masuda (1974). The mean total HSCL symtom score of these 34 women ($\bar{X}$ = 72, *SD* = 20) was approximately midpoint between the mean for a sample of normal individuals ($\bar{X}$ = 51) and the mean for a sample of anxious neurotics ($\bar{X}$ = 90) (figures computed from DeRogatis et al., 1974). Widows and students did not significantly differ regarding level of life change, symptoms, mood, or self-esteem.

There were no significant between-groups differences on a wide range of descriptive NSS variables, such as (overall means across both groups given in parentheses): size of NSS ($\bar{X}$ = 13.9), size of combined nuclear family and relative network ($\bar{X}$ = 6.0), size of friendship network ($\bar{X}$ = 6.9), overall NSS density ($\bar{X}$ = .26), density of the combined nuclear family and relative network ($\bar{X}$ = .59), and density of the friendship network ($\bar{X}$ = .23). In summary, widows and students were remarkably similar on nearly all variables. In all subsequent analyses, data from both groups are combined.

Interviewers

Two mature women recently returned to school served as the principal interviewers. Both women received training in interview techniques, interviewing actual subjects only after they had achieved a 90% agreement rate with the author on the SSS over two consecutive pilot interviews.

Logistical difficulties forced the author to conduct interviews with four widows and three students. Each of the other interviewers interviewed eight widows and six students. All interviewers, author included, were blind to the outcome status of the subjects.

Procedure

Upon selection as subjects, women were mailed the Social Network List. An approximately 2-hour semistructured interview was then held in their home. At this time, the Social Readjustment Rating scale was filled out, then the Support System Map drawn, the SSS completed by the Interviewer, and ratings made of the dimensionality of each friendship. At the conclusion of the interview, subjects were given the HSCL, POMS, and Semantic Differential to fill out that night. Subjects were also that night to begin filling out the DIRF, and to continue doing so for 14 consecutive days. After completing all forms, subjects were paid $10 for their participation. Several months later, separate (optional) feedback sessions were held for widows and students to inform and discuss with them results of the study.

RESULTS

Categories of Support-Mental Health

Correlational analyses indicate that DIRF (daily log) satisfaction with support variables are significantly associated with all three measures of mental health. Greater satisfaction with cognitive guidance is related very strongly to both less symptomatology, $r(32) = .64$, $p < .001$; and better mood, $r(32) = .49$, $p < .005$. Higher self-esteem, on the other hand, is most strongly associated with greater satisfaction with socializing experiences, $r(34) = .39$, $p < .02$. No other support-mental health relationship reached significance.

Mean intercorrelations among the five DIRF support scales ranged from (r =) .22 to .51. Cognitive guidance was least highly correlated with the other scales (mean r = .22). Evidence for the convergent validity of DIRF data was

provided by a moderate correlation between the DIRF and SSS (interviewer ratings) measures of overall support, $r(34) = .53$.

Structural Characteristics of NSS

Both NSS structural variables are strongly associated with measures of support and mental health. Density findings are reported first.

Denser NSS are associated with significantly less satisfaction with socializing, social reinforcement, emotional support, and cognitive guidance (see Table I). Moreover, denser NSS are associated with poorer mood and lower self-esteem, though these relationships only approach significance. Denser NSS are related to significantly less multidimensional friendships, a smaller overall NSS and particularly fewer friends.

Further analyses were conducted to determine the precise set of relationships accounting for the negative effect of density. Seperate analyses of the density of the combined nuclear family-relative network (excluding friends and professionals), and then of the density of the friendship network (excluding family, relatives, and professionals), indicated that the density of neither of these networks is significantly associated with either of the three mental health measures, or with any of the five support variables.

A very strong effect, however, is revealed for the nuclear family-friendship (NF-F) boundary density. This refers to the number of relationships that are reported to exist between nuclear family members on the one hand, and friends on the other, as a proportion of the total possible number of such relationships. A nuclear family member was defined in this study as either a child or husband (for married students) of a subject. As can be seen in Table I, a denser NF-F boundary is significantly related to greater symptomatology, poorer mood, and lower self-esteem. A denser NF-F boundary is negatively related to all five supports, and this relationship is significant for socializing, tangible assistance, and social reinforcement. This NSS is also significantly smaller, with friendships that are significantly less multidimensional, than NSS with lower NF-F boundary density.

Widows and students did not significantly differ in their NF-F boundary density (combining data from both groups, $\bar{X} = .23$). Nor was the NF-F boundary density significantly associated with possible artifacts such as the age of their children (the principal nuclear family members in this study) or amount of life change.

Having friendships that were more multidimensional is significantly related to higher self-esteem, $r(32) = .35$, $p < .03$; more satisfying socializing, $r(32) = .44$, $p < .01$; and more satisfying tangible assistance, $r(28) = .35$, $p = .03$. Having friendships that were multi- rather than unidimensional was not significantly associated with a larger NSS, nor with a larger family or friendship network.

Table I. Correlates of NSS Density

Variable	Density of overall NSS		Density of nuclear family-friendship boundary	
	r	*n*	*r*	*n*
Symptoms	.18	34	.36[b]	29
Mood	.25	34	.39[b]	29
Self-esteem	−.28	34	−.44[b]	29
Socializing	−.48[c]	34	−.61[c]	29
Social reinforcement	−.37[b]	33	−.34[a]	28
Emotional support	−.46[c]	33	−.18	28
Tangible assistance	−.23	32	−.40[b]	28
Cognitive guidance	−.30[a]	32	−.09	27
Multidimensional friendships	−.47[c]	32	−.49[c]	28
NSS size	−.57[c]	34	−.36[b]	29
Size of nuclear family and relative network	−.07	34	−.21	29
Size of friendship network	−.59[c]	34	−.24	29
Size of professional network	−.26	34	−.17	29

[a] $p \leq .05$.
[b] $p \leq .03$.
[c] $p \leq .01$.

DISCUSSION

Categories of Social Support

Findings from this study are consistent with the hypothesis that helpful support enhances adaptation to stress, though the correlational nature of the data precludes the drawing of causal inferences. Cognitive guidance (e.g., advice, explanations, information) emerged as the most critical of the five supports for these women. Statistical analyses revealed this support to be most independent of the other categories, suggesting that women were able to differentiate the relevent behaviors.

Our interview data suggest that helpful guidance may help to delineate necessary from unnecessary tasks, alternative coping behaviors, environmental resources, and outcome criteria for judging the effectiveness of one's coping efforts. Thus, helpful guidance can facilitate developing superior strategies for coping with complex and often ambiguous changes. The heightened sense of self-efficacy which may also result can help sustain coping behavior (cf. Bandura, 1977). This formulation is consistent with experimental research indicating that

positive feedback under conditions of uncertainty enhances adaptation to aversive stimuli (Averill, 1973).

Should these findings regarding cognitive guidance be replicated, an important further task will be to identify factors that facilitate the provision and utilization of helpful guidance. The contribution of both environmental variables, such as network density, and personality variables, such as tolerance for ambiguity, will need to be evaluated.

Structurally Contrasting NSS

These findings indicate that structural features of NSS may significantly affect how successfully one copes with major life changes. The findings regarding the poorer support provided by higher density systems are consistent with previous research on nonpsychiatric populations (Hirsch, 1979). No previous study, however, had assessed the relationship between density or multidimensional friendships and mental health per se. These results indicate that membership in higher density NSS may have debilitating effects on coping. To understand these findings, we must first consider the characteristics of structurally contrasting NSS. Findings regarding the interrelationship of density, multidimensional friendships, and network size suggest two prototypical NSS.

The first model may be termed the "extended family" and is characterized by many perceived relationships existing between nuclear family members (in this study typically children) and friends. The lower dimensionality associated with friendships in this NSS suggests more homogenous interactions, perhaps centered largely around child-related stimuli. Fewer individuals are considered part of this close-knit system. Being part of an extended family appeared to represent a value for several subjects who spontaneously apologized while drawing their network maps for there not being more relationships between their children and friends. The possibility that this system represents more of a cultural ideal is supported by the finding of a positive association between social network density and social desirability among college students (Hirsch, 1979).

While perhaps less a cultural ideal, a low density, multidimensional NSS nonetheless emerges from this study as more adaptive. Results indicate that friendships are here more multidimensional. A greater number of others are seen as part of the network. Thus, more diverse activities of salience are pursued with a greater number of others. The greater segregation among network members suggests fewer shared experiences and common roles across the network.

Why should low density, multidimensional NSS be associated with more successful adaptation? It is difficult to understand how superior adaptation might causally lead to the formation or report of a less dense NF-F boundary (especially given the apparently greater social desirability of higher density), though this hypothesis cannot be eliminated. Nor was this boundary density

significantly associated with possible artifacts such as the age of children or amount of life change.

In what follows, a model is proposed which attempts to make meaningful this density-mental health relationship and suggests how density *may* be causally related to adaptation. The model begins by considering the effects of major life changes.

Successful coping with such changes requires a reorganization of one's life. A major aim of this reorganization is the development of reinforcing social roles and activities appropriate to current life circumstances (e.g., Coelho et al., 1974). What kind of reorganization, then, may have been adaptive for these women, and why might low density, multidimensional NSS best facilitate this transition?

For both groups of women, the family had become a less important source of reinforcement. Widows largely needed to look outside the family to fill the social void left by their husband's death, as they typically already had strong ties to their children. Students now considered not only family but also school and an eventual career as important parts of their lives. Thus, irrespective of other differences, both groups of women required NSS which could support intensified involvement outside the family sphere.

In extended family systems, the greater involvement of friends with children may make it more difficult to partially seperate and gain independence from the family. Friendships may come to have revolved too predominantly around child- or family-related events and topics. There is less ground for establishing alternative social identities and less opportunity to find temporary refuge from reminders of problematic family relationships and events.

The greater access to salient nonfamily roles and activities provided by low density, multidimensional NSS allows for a smoother and less drastic reorganization of their lives. Women in such networks may merely have to change the extent of their already existing commitment or identification with particular activities or relationships, rather than having to develop entirely new ones (c.f. Coser, 1975; Sieber, 1974). Such change may also be appraised as less threatening and be more confidently pursued, as they have a greater backlog of actual experiences which indicate that these alternatives can be viable and satisfying.

The greater diversity of interests and segregation of different spheres of activity characterizing low density, multidimensional NSS can be seen to serve as an insurance policy. This policy may serve to protect individuals from having problematic changes in particular spheres of their lives become too encompassing, threatening, and debilitating. The policy may provide rewarding alternative social identities and activities, facilitating a smoother reorganization of one's life, at less psychic cost.

This analysis of role complexity, multidimensional relationships, and network segregation suggests potential guidelines for preventive or therapeutic

interventions designed to promote adaptation to major life changes (cf. Hirsch, 1979). Further research, however, is needed to assess the generalizability of these findings to varied populations. Future investigators may wish to employ prospective, longitudinal designs to allow for a clearer determination of causality than permitted in the present study. Both personality (e.g., social desirability) and network factors that may play causal roles have been suggested.

Research on social networks and natural support systems is clearly feasible. Understanding and promoting the health-enhancing capacibilities of such informal social structures is an important task for a community psychology.

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