An Evaluation of The Relationship Between

STRESSFUL LIFE EVENTS, SOCIAL SUPPORT

And

DEPRESSIVE SYMPTOMS

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ABSTRACT

A replication of Bell, Le Roy and Stephenson's (1982) study in New Zealand Rural, Country Town and City living conditions found no significant differences between the three communities in overall measurements of Stressful Life Events, Social Support and Depressive Symptoms. There were significant differences, however, within the communities. Sociodemographic groups within both Rural and City communities shared similarities that were conspicuously absent in Country Town living where significant differences were shown for Race, Sex, Age, and Socioeconomic Status.

With the same levels of Social Support, New Zealand numbers of Stressful Events and Depressive Symptoms were significantly higher than in the United States study.

The best model for explaining the findings in terms of this study, is that Stressful Events have a direct negative effect on Depressive Symptoms and that Social Support has a weak beneficial direct effect at intermediate levels of support. There was a tendency for Depressive Symptoms to increase at both low and high levels of support.

While the number of depressive symptoms increased with increasing numbers of stressful events there was no evidence that this was a contingent relationship with the level of Social Support or that the effect was other than of the additive variety. The New Zealand study did did not confirm the Bell et al. (1982) conditional effect finding but as in the Bell et al. study, there was no evidence of interactive effects.

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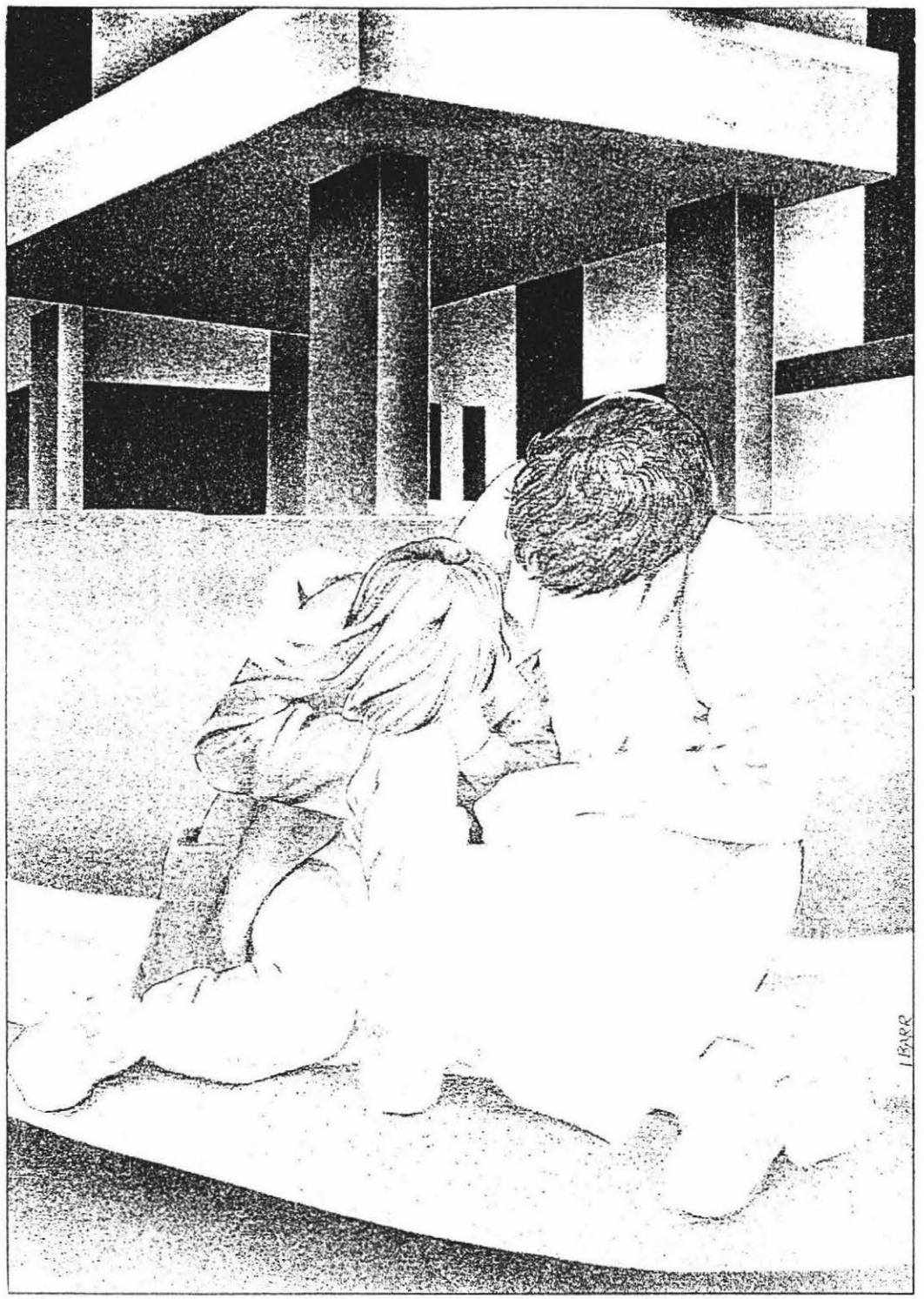
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CHAPTER I

INTRODUCTION

In a long history of medical and sociological research the examination of environmental factors has been considered pertinent in the investigation of illness.

In 1928 Cannon gave impetus to the study by publishing work on the physiological effects of emotion, and in 1951 Adolf Meyer's influential psychobiological model focused attention on the relationship of life events and psychiatric disorders.

Research (Wolff, Wolf and Hare, 1950; Selye, 1956) on physiological adaptation to change and the mechanisms involved in the production of psycho-physiological disorders, advanced interest and knowledge in the field and an extensive literature has accumulated with data relating life events to disorder (Holmes and Rahe 1967: Rahe 1968; Paykel, Myers, Dienelt, Klerman, Lindenthal & Pepper, 1969; Myers, Lindenthal and Pepper, 1971, 1972; Holmes and Masuda 1974; Lin, Simeone, Ensel & Kuo 1979; Bell, Keeley, Clements, Warheit & Holzer 1976; Tennant and Andrews 1978; Sarason, Sarason, Potter & Antoni 1985; Roth and Holmes, 1985).

The mechanisms by which environmental influences affect disorder and the roles of possible intervening factors, however, have remained obscure.

In spite of the large number of significant correlations between life events and measures of psychological disorder, the magnitude of correlations has generally been low, which suggests that life events account for a relatively low proportion of the variance in the dependent measures employed (Rabkin and Streuning 1976; Johnson and

Sarason 1978; Lin, et al., 1979; Tennant and Andrews 1978; Bell, Le Roy & Stephenson 1982).

Much of the early research on stress and mental health viewed the relationship in a direct unicausal way with stressors in the form of an event seen as the causal agent for mental impairment.

It was Cassel (1976) who drew attention to the idea that psychosocial processes are not unidimensional (stressors/nonstressors) but rather two dimensional, one dimension being stressors and the other dimension being protective. Beneficial psychosocial factors have come to be classified under the inclusive label of social support and early stress-impairment models gave way to more complex ones that introduced contextual control, and intervening variables.

Investigations by Cassel and Tyroler (1961) and Neser, Tyroler and Cassel (1971) confirmed that an unsupportive social environment was related to increased rates of physical illness and death in humans. This finding was supported by animal studies (Conger, Sawrey & Turrell 1958). Conger and his collegues found that rats subjected to electric shock in the presence of litter mates had lower incidence of gastric ulcer formation than found in those subjected to shock in isolation. Henry and Cassel (1969) found that hypertension developed in mice subjected to territorial conflict situations, only when they were crowded by "stranger" mice.

A convincing human study was reported by Nuckolls, Cassel and Kaplan (1972) which showed that 91% of pregnant women with a combination of high stressful life events and low social support scores had one or more complications of pregnancy while only 33% of women with equally high stressful life event scores but high social asset scores had any complications. Neither the life event score nor social asset score

alone was significantly related to the complication rate.

Kaplan, Cassel and Gore (1977) found that morbidity rates for many disorders increased among groups lacking in social support, and their work was confirmed by the research of Lynch (1977) and Berkman and Syme (1979) who found inadequate social networks associated with increased morbidity especially among widowed and single persons.

The research of Bowlby (1973) and others (Henderson, Byrne, Duncan-Jones, Adcock, Scott & Steele, 1978; Silberfeld 1978; Miller, Ingham & Davidson, 1976; Barnes, 1972; McFarlane, Norman, Streiner & Roy, 1984) on attachment and loss suggested that low social support (inadequate bonding) is a primary influencing factor in the production of social and mental impairment. The hypothesis is that inadequate social bonding is in and of itself a cause of psychiatric impairment, independently of life events.

The present limited knowledge of the processes and mechanisms by which life events and social resources come together influencing psychological status is certainly not the result of indifference or failure to think in terms of process.

An overview of the large literature demonstrates the attention a resolution of these issues receives. (Bell, et al., 1982; Parry and Shapiro, 1984; Frydman, 1981; Pearlin, Menaghan, Lieberman & Mullan, 1981; Husaini, 1982; Husaini, Neff, Newbrough and Moore, 1982; Dohrenwend, Dohrenwend, Dodson & Shrout 1984; Sarason, Levine, Basham & Sarason, 1983; Thoits, 1982; Aneshensel and Frerichs, 1982; Warheit, Vega, Shimizu & Meinhardt, 1982; Cohen, Struening, Muhlin, Genevie, Kaplan & Peck, 1982; Dean and Ensel, 1982; Williams, Ware & Donald, 1981; Isherwood, 1981; Brehm, 1982; Cohen, and Hoberman; 1983; Miller and Lefcourt, 1983; Monroe, 1983; Ganellen and Blaney,

1984; McFarlane, et al., 1984; Sarason, et al., 1985; Roth and Holmes 1985).

There is practical significance involved in investigating the issues. Stressful life events are usually unpredictable, universal and in no way amenable to health service intervention. (Mechanic, 1974; Andrews, Tennant, Hewson & Vaillant 1978; Frydman 1981). If social support is an important ameliorating factor in the relationship between stressful life events and psychiatric disorder, or if lack of social support has strong independent effects in the production of impairment, the finding is extremely important for public health and for crisis intervention work (McGee, 1974).

It has been argued that social relationships, particularly in cohesive membership groups (Durkheim 1951) or in meaningful role relationships (Faris and Dunham, 1939; Rose, 1962; Sarbin, 1968; Sieber, 1974; Thoits, 1983) can reduce anxiety, despair, low self-esteem and disordered behaviour.

If these speculations are as plausible as some research shows them to be it may be expected that supportive social relationships have significant effects on psychological outcomes regardless of whether stressful life events have occurred.

An understanding of whether social support significantly reduces the psychologial impact of stressful events, or offers protection when stress is present, over and above the protection it offers when stress is absent is an important consideration.

Researchers concerned with both primary and secondary prevention of illness and distress are interested in the resolution of these issues.

SUMMARY

Research into the relationship between environmental factors and psychological impairment have found psychosocial forces to be two dimensional. One dimension being stressors and the other being protective. Beneficial psychosocial forces have come to be labelled social support.

CHAPTER II

LITERATURE REVIEW

Studies of the relationship among life events, social support and psychiatric symptomatology although so promiment in social psychological literature have by no means produced unaminity among researchers.

An assumption underlying most of the research includes the notion that the availability, and or, use of a network of interpersonal resources reduces the impact of stressful life events. Individuals are presumed to be at reduced risk when they perceive that they would not be left to face crises alone.

Another assumption is that the use of interpersonal resources reduces the stresses associated with an individual's actual needs by extending either expressive or instrumental support. (Myers, et al., 1971; Caplan 1974; Mitchell and Trickett 1980).

Satisfaction with and quality of social support are of fundamental importance in understanding support effects but effective support seems to take different guises for different stresses or populations. The inherent dissimilarity of stress situations and population characteristics provoked Dean and Lin (1977) to remark that comparisons across studies was a bit "like comparing apples with oranges."

There are inconsistencies among research findings which may be due to the generally weak psychometric characteristics of current assessment tools, inappropriate data analysis strategies, differences in how support is conceptualised or defined and variations in population sample characteristics which preclude valid comparisons.

The rapid growth of research in the field has not allowed time to

establish empirical links between measures and real world behaviours. It takes time to test and refine instruments which can adequately measure something as complex as social support.

Research Designs

Retrospective methods are unavoidable when measuring in times of unexpected crises but reliance on retrospective designs involves problems related to memory deficiency, the significance of events over time, effort after meaning, and reporter bias and at best leaves the researchers at the correlational level of inference.

Monroe (1983) pointed out that much of the literature is based on retrospective analyses which do not control adequately for possible contaminating influences of pre-existing disturbance. Psychological symptoms may alienate others or taint one's perspective and lead to either a decrement in the quality of actual, or perceived support from significant others.

Retrospective research may create either potentially spurious effects (Type I errors) or may not be sensitive enough to existing associations (Type II errors) (Babbie, 1979).

In designs where support ratings and disturbance measures have been assessed simultaneously reporting is influenced by existing disorder or awareness of disorder, and alternative explanations are possible. Little firm evidence exists concerning the direction of effect between social support and disorder.

One method of coping with retrospective research problems is to look at demographic characteristics which differentiate the supported from the unsupported.

It should also be noted, however, that prospectively designed studies do not necessarily control for these considerations. If social support is to be considered independently, as a predictor of disorder, an association with subsequent symptoms should be demonstrated once initial symptoms have been taken into account. Prospective designs are difficult to organise in the field, as severely deficient support may pre-date and predict symptom development. The few prospective studies which have been done have usually found in the same direction as retrospective studies. (Isherwood 1981)

Longtitudinal studies and combined cross-sectional and longtitudinal designs have been recommended for investigating how support interacts with a person's coping across time and circumstance. (Leavy 1983)

There are ways of approximating longtitudinal studies. Common wisdom suggests that the time order of variables is clear when age differences in cross-sectional studies form the basis for inferring processes across time (Babbie 1979). For instance, a reading across age group ratings can reveal something approximating the health history of individuals as a pattern over the course of a typical life cycle.

Although it is typically assumed that stressful events cause psychological disturbance it is feasible to speculate that emotional disturbance may predispose a person to experience a greater number of stressful experiences.

In a longtitudinal study McFarlane, et al., (1984) found that individuals who reported large networks of friends and relatives yet did not find them helpful demonstrated an inability to form helpful relationships or had some problem of perceiving they had been helped. McFarlane believed that their data provided some support for Bowlby's (1973) thesis that there is a causal relationship between early

deprivation of bonding and later inability to receive social support or in other words, lack of social support is in and of itself a cause of psychological impairment.

Statistical Procedures

Inconsistancies in the literature are also in part due to methodological ambiguities as to the appropriate statistical model for detection of processes (Parry and Shapiro 1984: Frydman 1981; Thoits 1983). Perry and Shapiro (1984) in addressing conceptualization and analysis in the evaluation of both contingent and non-contingent models of social support found the literature "bedevilled" by wide variations in statistical analyses.

Using multiple regression procedures Monroe (1983) contrasted findings from retrospective analyses with results from three types of prospective analyses. His results demonstrated that the support-disorder associations varied as a function of the design used and the control variables included.

Some misunderstandings stem from confusion regarding the variable upon which social support is believed to have an effect.

Some authors (La Rocco, House & French 1980) are concerned with the influence of social support on major life events or chronic difficulties, (social support ---> stress). Others are concerned with the influence of social support and stressful events on psychological distress (social support x stressful events ---> psychological distress) (Husaini, 1982; Thoits 1982, 1983). The two approaches are not theoretically relevant to one another.

The problem of evaluating in the literature current concepts of social environmental predictors of disorder are fraught with

difficulties and contradictory research results abound. Differences between the analysis of discrete variables in contingency tables (Brown and Harris, 1978) and continuous variables using parametric procedures such as multiple regression, relate to the controversy concerning conceptualization of psychological disorder in terms of caseness versus continium. Some researchers study psychological impairment as separate unique cases, while others regard all individuals as being in different positions on a continium from healthy to severely impaired. (Wing, Bebbington & Robins 1981).

Confounded Measures

Thoits (1982, 1983) demonstrated the variation in results that are obtained when social support indicators are and are not, contaminated by or operationally confounded with measures of life events. This problem of confounding measures accounts for some of the confusion. Some items on stress instruments are likely to be symptoms of psychological disorder. Because undesirable events tend to show strong correlations with psychological distress this confound is serious.

A study undertaken by Dohrenwend, Dohrenwend, Dodson and Shrout, (1984) examined judgements by 371 clinical psychologists of the extent to which items in leading stress instruments are likely to be symptoms of psychological disorder. Their results indicated that all stressful event measures are confounded with measures of psychological distress but that the Holmes and Rahe (1967) scale was the least contaminated of the scales they studied. Other authors confirm this; (Kanner, Coyne, Schaefer & Lazarus 1981; Lin, Dean & Ensel, 1981).

THE MODELS

Research focuses on the resolution of three questions. (Bell et al 1982, Frydman 1981 and Husaini et al., 1982)

1. Are life events and social support when considered separately related to psychiatric symptoms? Do they have "direct" effects?
2. Is the relationship between life events and psychiatric symptoms mediated by the level of social support? and conversely is the relationship between social support and psychiatric symptoms mediated by life events? Are the effects "conditional?"
3. Are there joint effects of life events and social support which are not attributable to the sum of their separate parts? Are there interactional effects?

DIRECT EFFECTS

Empirical studies produce strong support for direct independent "main" effects of both social support and life events on psychiatric symptoms.

In this model social support works to reduce distressing symptoms regardless of the level of exposure to stressful situations, which means that it has a "non contingent" effect.

From this point of view social support could be termed a stress counteracting resource playing a purely "additive" (or subtractive) role.

Williams, et al., (1981) reported a longtitudinal study of an urban population and found a direct negative, contribution of stressful events, and a direct positive contribution of social support to mental health symptoms. They reported that increased social support predicts improvements in mental health and that increased numbers of stressful

events predict a deterioration.

They found that the negative effects of life events on mental health do not vary according to the amount of social support and that while differences in measurement may produce some variance in results they believed there was no doubt about the conclusion that the effects were of the additive variety.

Wheaton (1982) gave an example of this position:

> "If we know that for any given level of stress, an increase of exposure to stress of two units leads on the average to an increase of one symptom on a depressive scale and if we also know that it takes on the average three supportive contacts with family or friends to reduce depression by one symptom, then we have a resource that plays a stress counteracting role." (p. 293)

Wheaton pointed out that the model works only if the distress and support are relatively uncorrelated. If the two are causally related and support is mobilized because of the occurrence of stress it will play a less counteracting role.

This process is identified in both cross-sectional and longtitudinal research data. (Andrews, et al., 1978; Ganellen and Blaney, 1984; Thoits, 1982; Parry and Shapiro, 1984; Warheit, et al., 1982; Flaherty, 1983). The two independent effects affect the measure of symptoms in an additive or subtractive way. The number of stressful events is presumed to have an "additive" effect on the level of symptoms on an impairment scale and social support is presumed to "subtract" the number of symptoms according to its level of presence.

Williams, et al., (1981) reported that their data supported the findings of Lin, et al., (1979) except that Lin's group also reported that the positive effects of social support were stronger than the

negative effects of stressful events on mental health. Williams and her colleagues found that their regression analysis produced the opposite result, but they pointed out that different methods, and the effect of some overlap between measures of mental and social factors, may account for this. Both groups report the direct additive effects found by many studies. This model presumes that, rather than buffering the effects of stressful events on an individual, social support simply counterbalances those effects.

Williams and colleagues (1981) concede that the implications of their finding are overly simplistic.

CONDITIONAL EFFECTS

The face validity of a more traditional "contingent" model motivates research to find evidence for its importance.

This evidence is very elusive. It would answer the following questions. Is the relationship between life events and psychiatric symptoms mediated by the level of social support? Is the relationship between social support variables and psychiatric symptoms mediated by the level of stressful life events?

In this model the degree to which social support makes a difference depends on the level of exposure to stressful events. The hypothesis here is that the effect of stressful events will be significantly moderated when social support is present compared with when it is absent and that the presence or absence of social support is more salient at high levels of stress than a low levels of stress.

The important point is that the effect of increasing exposure to stress is contingent upon both the prior level of stress and the presence or absence of social support (Wheaton 1982). Research

representing this traditional formulation of the "stress-buffering" issue has been directed at identifying coping resources whose effects are specifically activated or made more salient by the presence of stress. This model infers that only in the presence of a high level of stressful life situations or recent adversity will social support affect psychiatric symptoms. It will have little effect at low levels of stressful events.

Wheaton (1982) believed that his research confirmed that this contingent model is relevant for explaining coping resources but he observed that the effect of social support was very much less beneficial than is often hypothesised by others (Myers, et al., 1971; Lin, et al., 1979).

Wheaton put some reliance on associated personality measures which it is claimed do not predict behaviour well and are themselves unstable over time (Mischel, 1968). Wheaton, however, argued that if suitable measures are used a sufficiently high correlation with stability (.70-.90) is achieved upon which to base his argument for a contingent model.

La Rocco, et al., (1980) and Wheaton (1982) make a distinction between stressful events and chronic stress when evaluating the function of social support in relation to depressive symptoms. They identify contingent effects in continuing stress more consistently than for acute events.

Kaplan, et al., (1977) also found that social support was likely to be protective only in the presence of stressful circumstances. Cohen and Hoberman, (1983) have reported that their data fitted the contingent "buffering" model. Included in their test battery were measures of perceived availability of support, life events and

depression. Perceived availability of support "moderated" the relationship between negative life stress and depressive symptoms suggesting that social support protects from the pathogenic effects of high levels of life stress but is relatively unimportant for those with low levels of stress. Their further analyses, however, suggested that self esteem also contributed to the reported interactions. This introduces the involvement of "personality" which was also a factor in Wheaton's research.

Belle (1982) investigated the relationship between stress, and supportive social relationships by exploring the social networks of the urban poor. She concluded that stress not only threatens individuals directly but also can attack potential sources of social support that might otherwise be used to buffer that stress. The stresses of the poor appeared to draw from them the resources necessary for good mental health and family functioning. This supports the converse part of the question of interest, that the relationship between social support and symptoms is mediated by life events.

This finding however is not supported by the research of Thoits (1982) who found no evidence of a contingent relationship between stressful life events and social support. She found that the psychological vulnerability of low status groups cannot be explained by the interaction of many events and few available social supports. She suggested that the confirmation of vulnerability in disadvantaged groups needs new directions for future epidemiological research.

Assumption of Causality

The assumption of causality in the model is a problem, especially in cross-sectional surveys. The model assumes that both stressors and lack of support are causal antecedents of distress. The possibility that the present level of stress and support may depend on the prior level of distress is however excluded.

There is danger in attributing "cause". In a study of the differences in scores for symptoms "during" and "three years after" marital breakup McLanaham (1983) found that the differences were insignificant, so the "cause" of the symptom level could not be assumed. Wolfe (1981) pointed out that a unidirectional causal model is inappropriate because the ongoing interactive processes of a social network involve feedback.

Lin and Ensel (1981) referring to a previous study (Lin, et al., 1979) emphasised that their data showed inconclusive evidence as to whether social support played an active or reactive role. They were careful to remonstrate with Boyce (1981) for interpreting the partial interactive effect they had reported, in specific causal (reactive) terms.

Causal relationships between stress, support and depression were reported in a longtitudinal study by Aneshensel and Frerichs (1982). Social support was shown to have "direct negative effects on current depression and indirect effects on subsequent depression." There was, however, no valid evidence of the causal ordering of the sequence of events, so any stress buffering function of social support on depression was beyond the scope of their analysis.

In a comparative study of parents whose children had chronic or terminal illness Frydman (1981) found that they were differentially

affected by increased levels of stress and social support. There appeared to be ameliorative contingent effects of social support on a depressive measure when stress was high for the parents of chronically ill children but not for those whose children were terminally ill. This implicates a measure of expectation of the effectiveness of support.

An element which makes empirical support for the "buffering" model elusive is that authors who report conditional contingent effects have found overall main effects first and conditional effects only in some sociodemographic situations. (Bell, et al., 1982; Husaini and Neff 1981; Husaini, et al., 1982).

Bell et al., (1982) reported results corrobating the findings of researchers who have documented both "main" and "conditional" effects. In their study Bell and colleagues calculated ANOVAs at each level of social support for group means on a depression scale and similarly, at each number of life event categories. At almost all levels, significance of contingent effects was found.

Husaini, et al., (1982) investigated the possible stress buffering properties of social support for the rural married and found indications of both "main" and "buffering" effects for the total sample but that the effects varied by sex.

Terminology

Some of the considerable reported confusion in identifying this process in the literature relates to inconsistencies in terminology and conflicting statistical interpretations.

The conditional model is referred to as describing "multiplicative" effects "buffering" effects "conditional" effects, "interaction"

effects, "mediating" effects, "contingent" effects, "ameliorative" effects, or "mitigating" effects of social support in relationship with stressful life events and psychological impairment.

Everitt and Smith (1979) have demonstrated how two sets of authors Brown and Harris (1978) and Tennant and Bebbington (1978) may come to divergent conclusions about the existence of "interaction" effects in the same data because of different methods of defining "interaction."

Some authors have used the term "interaction" to describe the process identified by the analytic procedure of comparing scores on a dependent variable following stratification on two or more dichotomous independent variables while others used terms such as "mitigation" (Warheit 1979) or "mediation" (Lin, et al., 1979) to describe the same procedure. More precise definition and consistency in terminology would clarify some of the confusion reported.

Thoits (1983) argued that main effects of social support and life events should be examined first as a methodological procedure so that the question as to whether additional protection is available when stressful circumstances are present can be revealed.

INTERACTION EFFECTS

The third statistic introduced by some authors asks the question, Is the combined effect of social support and stressful events greater than the sum of their separate effects? This interaction effect has been the most difficult to find.

Bell, et al., (1982) and Frydman (1981) tested for this process by three-way ANOVA and found no statistical evidence of this interaction.

In a longtitudinal study of the stress process, Pearlin, et al., (1981) found that social support acted as a mediator to the extent that

it is successful in preventing an elevation of depression by neutralizing any or all of its antecedent conditions.

They concluded that social support has no direct bearing on changes in depression, independent of the sources of stress. They found that there was important interaction at prior points in the stress process but only for certain kinds of stress. Pearlin and colleagues reported that support mediators do mediate, but their effects are more potent in some circumstances and at some junctures than others and more potent too in buffering some elements in the stress process than others.

It is particularly with respect to occupational stress and health that both La Rocco (1980) and Pearlin, et al., (1981) found the evidence of interactive effects.

SUMMARY

Research literature focuses on the question of whether stressors and social support have a direct additive (or subtractive) effect on psychological health or whether social support has a "buffering" effect, conditional on the level of stress. Some researchers also investigate for interactive effects. There is considerable confusion in reported results because of the use of non-validated measuring instruments, differential definition of terms used, and conflicting interpretations of statistical analyses.

CHAPTER III

THE RESEARCH PROJECT

In the many studies of the effects of social support and stressful events almost all have examined urban population samples. Authors generally report "direct" effects of social support and life events on psychiatric symptoms with only rare elusive indications of "buffering" effects, or interactive effects.

When Husaini, et al., (1982) published a study based on a rural married population they reported more support for the contingent "buffering" theory than do most urban studies (Thoits, 1982; Dohrenwend, Krasnoff, Askenasy & Dohrenwend, 1978; Aneshensel and Frerichs, 1982;)

Very few references are made in the literature to any specifically rural population studies .

Bell, Le Roy, Lin and Schwab (1981) in a study of Change and Pathology found that the difference between mean depression scores for a rural sample and an urban sample was not statistically siqnificant. They then combined the samples for the remainder of their study. This may have masked some interesting findings and perhaps been responsible for a later study where Bell, et al., (1982) made no distinction between rural and urban respondents.

Some doubt could be entertained as to the definition of "rural" in United States studies. In the Husaini et al., (1982) research the population was considered "rural" because the United States Census classifies as rural any county 50% rural. Included in the Husaini rural data was at least one city of population 28,000.

In a 1983 study, Bokemeier, Sachs and Keith examined the

socioeconomic correlates of labour force participation for farm and non farm women. They found that status factors were more influential for farm than for non farm women, which, given that status is highly correlated with psychological impairment and health, does suggest that the study of a rural urban comparison may provide some differential data.

In light of the fact that contingent "buffering" effects of social support in relation with stressful life events and depression symptoms is so elusive in statistical analysis in urban studies and that it was identified in the rural study of Husaini, et al., (1982) it could be appropriate to research a comparative study of rural and urban population samples.

Among studies that have contributed toward theoretical development the results of the Bell, et al., (1982) research have emphasised the value of social support in therapeutic management and the clinical value of strengthening social support resources in primary prevention programmes. The authors regard the building of close personal relationships as a sort of "psychological insurance" that could provide stability in times of stress and crisis.

They emphasised that it is not sufficient to continue to merely study the impact of social support and stressful life events upon persons or groups. Research efforts must also take into account the social contexts within which stressful life events occur. Effort is needed to extend understanding of the conditions of living which lead to low social support or isolation and those which facilitate the development of supportive social environments.

It is the purpose of this study, by replicating the method of the Bell, et al., (1982) research, to examine the relationship among

stressful life events, social support and depressive symptoms in New Zealand by comparing sample populations in Rural, Country Town and City communities, and incidently to compare New Zealand results with United States, and European ethnicity with Maori.

There have been suggestions that the finding of scattered buffering effects of social support upon life events and dependent outcomes may be an artifact of confounded measures of social support and stress, of imprecise use of terms or, as some believe, of the use of non hierarchical techniques of statistical analysis (Thoits, 1982; Aneshensel and Stone, 1982; Frankel and Nuttall, 1982; Lin, et al., 1979; Turner, 1981; Turner and Noh 1983;)

The current study addresses an examination of sociodemographic variables in three different environmental conditions using precise definition of terms for theoretical positions and instruments as free as possible of confounded measures. The results will be analysed using both analysis of variance and hierarchical techniques. With a regression format the researcher can estimate the main effect variables first, then add the conditional and interactive terms to the equation and examine the significance of the change.

The aim has been to identify some of the conditions of living which affect the relationship between stressful life events and social support with psychological symptoms.

THE RESEARCH QUESTIONS

(a)Is there any significant difference between the relationships of stressful life events and social support with depressive symptoms in Rural, Town and City population samples in New Zealand?

(b) Is there a significant difference between the United States and New Zealand data?

(c) Is there a significant difference for European and Maori ethnicity?

Theoretical questions addressed are those considered by other investigators. (Frydman 1981, Bell et al., 1982, Parry and Shapiro 1984).

1. Direct effects: are life events and social support, when considered separately, related to depressive symptoms?

2. Conditional effects: is the relationship between life events and depressive symptoms mediated by the level of social support? and conversely is the relationship between social support and psychological symptoms mediated by life events?

3. Interaction effects: are there joint effects of life events and social support which are not attributable to the sum of their separate effects?

ETHICAL ISSUES

The research topic was chosen with the intent to investigate an issue that will contribute to knowledge likely to be beneficial to the greater Taihape community.

An understanding of some of the conditions of living in which individuals develop a differential level of symptoms of psychological impairment should contribute toward a more effective management of those conditions in the district.

Leaders in Taihape have presented submissions to the Government with a request for an upgraded social work service. It is anticipated that some outcomes of this survey will be of use in planning strategies.

The researcher early approached both European and Maori leaders in the community, explained the project and gained support from Council members, clergy, doctors, voluntary community workers and other leading citizens.

The support of influential Maori leaders was most valuable in securing the cooperation of many Maori respondents.

The interview survey was designed to protect the anonymity of sensitive information revealed in confidence to the researcher.

In all cases participation was voluntary. No identifying information was recorded on the survey schedule. Cooperation was achieved by taking time to ensure that all individuals understood the project. The respondents were not asked to identify the nature of a stressful event they chose from the inventory but many of them did, and a volunteered alternative event was accepted if the researcher considered it was not confounded with depressive symptoms. Care was taken to avoid any harm to respondents.

The identity of the researcher was previously known to many of the

participants who were reassured about anonymity and confidentiality.

SUMMARY

Bell et al., (1982) suggested that investigations into living conditions would increase understanding of the effects of Stressful Events and Social Support upon Depressive Symptoms. A replication of their study in Rural, Town and City conditions would examine sociodemographic factors and may expose significant differences between the three communities, between United States and New Zealand and between European and Maori ethnic influences. Theoretical issues approached were: Are effects, direct, conditional or interactive?

Ethical standards to protect the confidentiality of the respondents were observed.


TED RAMSEY

CHAPTER IV

MAJOR VARIABLES

INDEPENDENT VARIABLES

STRESSFUL LIFE EVENTS

There are intrinsic difficulties in defining stress, deriving from the identification and conceptualization of stress and what is stressful.

The judging of an event as stressful is dependent on the individual's subjective perception of the event (Kimball 1982; Theorell, Lind & Floderus, 1975; Vinokur and Seltzer 1975).

A stress is something that causes a response that can be identified as a change in the behaviour of an individual as measured on some level. The degree of stress is measured in the adequacy of the response to handle the stress. If the response is optimal the response is soon over, when it is less or more than optimal the equilibrium of the individual will be aberrant. These considerations indicate connotations of direction and duration of response. (Kimball 1982)

One common theme to all stressful life events is "change." The stressful quality of the change is associated with the degree of control the individual perceives he has over the event as well as the quality of the change. (Bell et al., 1981). Antonovsky (1980) has pointed out that change and stress are inherent in the human condition.

Stressful Life Events.

Artist, Ted Ramsey.

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The notion that stress may be a precursor of psychological impairment has high face validity but attempts to observe the phenomenon have yielded low estimates of the contribution of stressful events to the development of psychological disturbance (Alarcon and Covi, 1972: Rabkin and Streuning 1976; Rahe and Arthur 1978; Tausig 1982; Kobasa, Maddi and Courington, 1981).

Kobasa, and colleagues criticise reports of significant effects of life events on psychological impairment. They point out that events tend to come to an end and that studies which control for prior illness level are rare. They doubt the basis on which the causal status of life events has been estabilished or that the causal status of life events has been equivocally demonstrated in relationship with psychological impairment. In a longtitudual study they found the "causal effects" or possible "additive effects" short-lived.

Tausig (1982) examined data from a large community survey investigating effects of life events on distress. He concluded that even when different ways of evaluating life events were considered the relatively small relationship to depressive symptoms cannot be improved substantially. He pointed out that his study had been confined to "direct effects" of the life event measure on depression and suggested that indirect or mediated effects through such variables as social support may provide indications of the way that life events indirectly affect mental health.

It has been proposed by Kimball (1982) that the best way to study stress and what is stressful is to focus on the determinants and modifiers of stress such as social support. Tausig suggested that many of the problems encountered in the literature may be accounted for by methodological considerations and that this area of investigation was

likely to clarify some issues.

Measurement of Stressful Life Events

The demands of empirical research have stimulated interest in the development of suitable instruments for the measurement of stressful events. (Holmes and Rahe 1967; Holmes and Masuda, 1974; Rahe, 1968; Paykel, et al., 1969).

The Social Readjustment Rating Scale (SRRS, Holmes and Rahe, 1967) has largely determined the direction taken by many researchers. Beginning in 1949 and using Meyer's life chart (Lief 1948), Holmes and Rahe observed that although event experiences varied greatly among individuals, readjustment responses always accompanied an event. The SRRS contained two categories of items, those pertaining to life style and those of events involving the individual.

The question of SRRS validity has been the subject of debate (Sarason, Monchaux & Hunt, 1975) but many independent assessments have reported its acceptable reliability and validity (Tausig, 1982; Horowitz, Schaefer, Hiroto, Wilner & Levin, 1977; Isherwood and Adam 1976; Isherwood, 1981).

Although other measures of life event stress have been reported (Berkman, 1971; Wardell, 1973; Skinner and Lei, 1980; Dohrenwend, et al., 1978) only the SRRS and scales derived from it such as the scale used by Vinokur and Selzer (1975) and the Paykel, Prusoff and Meyers (1975) instrument have been rigorously validated (Isherwood 1981).

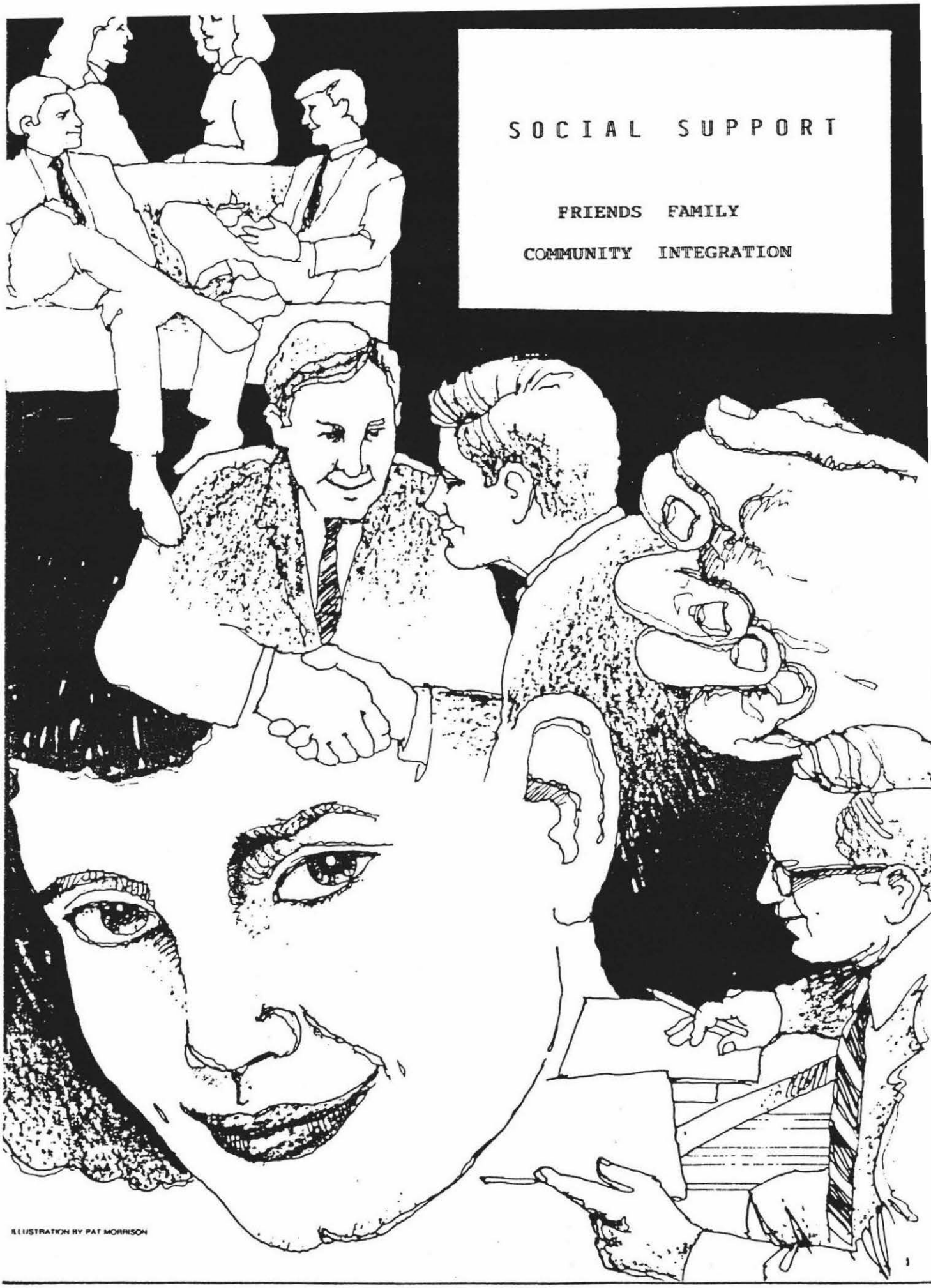
Dohrenwend, et al., (1984) recently examined three extensively used measures of life stress (Holmes and Rahe, 1967; Kanner, Coyne, Schaefer and Lazarus, 1981; Lin, et al., 1981) and while they reported that none of the scales was without some confounding of stressful

circumstances with symptom outcomes, the Holmes and Rahe Social Readjustment Rating Scale was the least contaminated.

When Tausig investigated stressful life event measures he also found correlation between scale items and dependent variables in some scales but those based on the Social Readjustment Rating Scale appeared to be less contaminated than other scales in the literature. The many variants of this scale do not have a substantial effect on its ability to predict depression and neither do weighted nor unweighted measures differ in their ability to predict dependent outcomes. (Tausig, 1982; Dohrenwend et al., 1984; Ross and Mirowsky, 1979; Skinner and Lei, 1980; Paykel et al., 1969).

Isherwood and Adam (1976) made a New Zealand and American cross cultural study using the Social Readjustment Rating Questionaire (SRRQ) and found that there was a highly significant correlation (0.00001 level of confidence) between middle and lower class Americans and New Zealanders regarding the establishment of a relative order of magnitude of life event changes. Other investigations (Holmes and Masuda 1974; Harmon, Masuda and Holmes, 1969; Komaroff, Masuda & Holmes, 1967; Masuda & Holmes, 1967; Woon, Masuda, Wagner & Holmes, 1971) have reported cross-cultural data which found high consensus among studies of Japanese, Western European, Spanish, American Negro, Mexican, Malaysisan, Hawaiian and Peruvian populations. While these reports suggest that the scale is cross-culturally valid it is also noted that for instance the New Zealand population sample in the Isherwood and Adam (1976) study was particularly biased. It was selected from University staff at the Christchurch Clinical School, academics, administrators and clerical personnel.

Bell, et al., (1982) established an inventory based on an extension


SOCIAL SUPPORT
FRIENDS FAMILY
COMMUNITY INTEGRATION
ILLUSTRATION BY PAT MORRISON

of the Holmes and Rahe scale (Paykel et al., 1969). It included the 30 items which were considered by Paykel and colleagues to be the most upsetting to both patient and non patient populations. In this scale confounding effects of stressful life events with depressive symptoms are minimized. (Appendix A).

SOCIAL SUPPORT

Because tribal meetings for healing purposes are well known in many widely varying cultures, and in the McLuhan (1970) world of instant tribalization, each of us is influenced by mass behaviour, it has seemed that social network intervention has much promise as a constructive and healing influence (Speck and Attneave 1971).

Social support has become a very popular concept with researchers studying psychosocial factors, because of the potential implications for treatment and prevention. Many studies, however, have contained major methodological problems which obscure results, and data from a variety of sources suggest that the role of social support in psychological outcomes requires a great deal of study yet, before definitive statements can be made.

Social support is a very complex concept. It is a cluster of

Social Support.

Artist, Pat Morrison.

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factors that act together. It is a characteristic of individuals, groups, institutions and communities and cannot be understood at any one of these levels alone. There are implications of more than family ties, close friends and membership of organisations.

Heller (1979) recognised that a social network may be both a source of, and a buffer against stress. It can produce various combinations of effects because it is composed of factors which vary at times.

Bruhn and Philips (1984) do not believe that social support lies dormant until activated by stress, it is part of our social interaction and is experienced and expressed continually to some degree.

It does not disappear when it is not needed. Social support is a fact of everyday life, dynamic in form and quality and varying with time and circumstance. Its reciprocity emphasises its dynamic and complex nature which is not often revealed when it is measured at a specific time.

Structure, Content and Process

Some researchers have defined social support in vague terms as for instance "support accessible to an individual through societal ties to other individuals, groups and the larger community", (Lin, et al., 1979) or "emotionally sustaining behaviour" (Gottlieb, 1978). Social supports are described in the literature as social resources, psychosocial assets, protective social forces, stable social matrix, social networks, social systems and support networks. (Bruhn and Philips 1984; Leavy 1983)

Reliable measurement is a necessary precursor to understanding the relationship of the environment to psychological disorder (Mueller 1980) and the structural approach of network analysis appeals for this

reason. Content, however is also important.

Recent conceptualizations have emphasised both structural descriptive and process oriented approaches.

A structural functional model of social support systems regards them as routine adaptive devices, active rather than reactive support systems responding to stressful life events. (Dean, Lin and Ensel, 1981).

Network size and density have been investigated and recently hard evidence has been sought on the differential effects of the components of social support.

Regardless of how it is conceptualised social support would seem to have two basic elements, the perception that there is a sufficient number of available others to whom one can turn in times of need, and a degree of satisfaction with available support.

Leavy (1983) conceptualises support as having two interrelated components which interact with a third. First, support has structure. It entails the size, setting, reciprocity, accessibility and make up of interpersonal relationships. Second there is content of support relationships. Leavy gives a more specific definition and identifies four types of supportive behaviours: emotional support which involves caring trust and empathy; instrumental support which involves helping with work, or money; informational support involves help which provides a solution to problems or the teaching of a skill; appraisal support helps one evaluate his personal behaviour as when a supervisor tells an underling that a job was well done. (House 1981). These are interrelated components of a complex concept.

Different types of support have differential effects depending on the challenge one faces and the mastery over stress one seeks.

The third element which affects the other two, is process, by which an individual develops, matures and uses supportive ties.

La Rocco, House and French (1980) and House (1981) reported the special support function of work environments. Leavy found housewives' (non-employed women) family support negatively correlated with depression and psychosomatic symptoms. The evidence that female depression is related to poor family supports (Brown, Bhrolchain and Harris 1975, Paykel, Emms, Fletcher and Rassaby 1980; Roy 1978) indicates the importance of a housewife's "life work" of home making. Ganellen and Blaney (1984) found a strong correlation between support and the committment and challenge dimensions in personality and Kobasa and Puccetti (1983) found a strong relationship with support received from an employee's work supervisor, but not from his family or friends. These interesting findings suggest that support may be most effective in life areas where an individual has made the most committment.

The process oriented theoretical model, emphasises the role of causal attributions for a provider's actions in making salient to the receiving individual his connection to a potentially beneficial social network. (Brehm, 1982).

Positive and Negative Effects

There is a general acceptance in some recent clinical literature that social support has beneficial effects (Sarason Levine Basham and Sarason, 1983; Sarason et al., 1985; Turner, 1981; Dean and Ensel, 1982), but discordant data is also appearing. Donald and Ware (1984) reported that they found social support to be a heterogeneous concept with relatively weak relationships between and within its major components.

An unexpected challenge to the assumption that social support always has beneficial effects in the presence of crisis was found by Husaini et al., (1982). In a rural married population sample they found high social support associated with increasing psychiatric symptoms in males, whom it was presumed had their self esteem diminished by the need to seek help, and consequently were increasingly impaired.

It has been pointed out that research should pay more attention to the "costs" as well as the benefits of social networks. Social ties can often provide people with vicarious stress especially in close relationships (Belle 1982; Bruhn and Philips 1984) and individuals differ in their tolerance of the proximity and number of persons about them (Long, 1984; Salzinger, 1982; Burgess, 1983; Insel and Lindgren, 1978).

Among researchers who find evidence to challenge beneficial assumptions, for social support are Warheit, et al., (1982) who conducted research on the availability and use of familial and friendship networks in population samples including Whites, Blacks, Mexican Americans, Anglos and Guamanians. They reported that their data indicated that the use of familial and friendship networks did not appear to ameliorate mental health problems. To the contrary, individuals who sought help from friends and family had significantly higher symptom scores than those who did not.

They argued that the relationship between the availability and use of interpersonal networks and mental health are complex and that generalizations should not be made. Some of their findings were not compatible with commonly held beliefs. Their data showed that having relatives nearby was not associated with lower symptom scores, but having friends nearby was. The finding raises questions regarding the

role of family as a source of emotional or instrumental support in some ethnic groups where family cohesion has been presumed to be strong.

There is also a problem to distinguish between an individual's network of supporters and the circumstances in which it is activated to help (or hinder) when stressful events occur (Dohrenwend et al., 1984).

In a study of paradoxical effects of supportive audiences on the performance of sports teams, Banmeister and Steinhilber (1984) found that in some circumstances audience support interfered with the execution of skilful responses. This effect may be observed in social relationships, when too much attention can be a cause of stress.

Positive and negative functions of social support have been examined by Rook (1984) and by Bruhn and Philips (1984) in an attempt to develop a theoretical structure for future research. Different facets of their concepts include environmental and cultural factors as well as qualitative versus quantitative measures.

Social support is often determined by the ability of an individual to give and to receive support and by individual levels of functioning.

McFarlane, et al., (1984) examined cohorts of individuals, with helpful and unhelpful social supports identified in a longtitudinal study of stressful events, social supports and health. The perception of being helped did not seem to be the result of having larger networks or more frequent contacts. Subjects who felt the least helped had the largest networks and consulted them most often.

Perception and awareness of support may be the consequence of an individual's "disposition" in general, and psychopathology in particular. The "disposition" to be aware of support is associated with the early bonding process, and McFarlane and colleagues draw attention to the work of Bowlby (1973) and his association of early

deprivation of social support being a cause of pathology in and of itself.

Relationship with health

The adequacy of support affects both social psychological and physical functioning, and measurement may be confounded with health status, because of biological effects (Broadhead, Kaplan and James, 1983).

Loss or absence of social support has been linked with coronary heart disease, disorders of pregnancy, accidents, suicide, mental breakdown, school truancy, ulcers, cancer and schizophrenia (Pilisuk and Froland 1978; Lin, et al., 1981; Cohen, 1979; Bruhn, 1984).

Heller (1979) questioned whether good health makes a person more likely to receive social support. There need to be measurements among healthy persons so that levels can be established by functional members of society.

In a study among male Navy Submarine School students, Sarason, Sarason, Potter and Antoni (1985) noted the positive role of social attachment in the health of male subjects. These findings are particularly impressive because young military personnel have a low vulnerability to ill health.

Measurement of Social Support

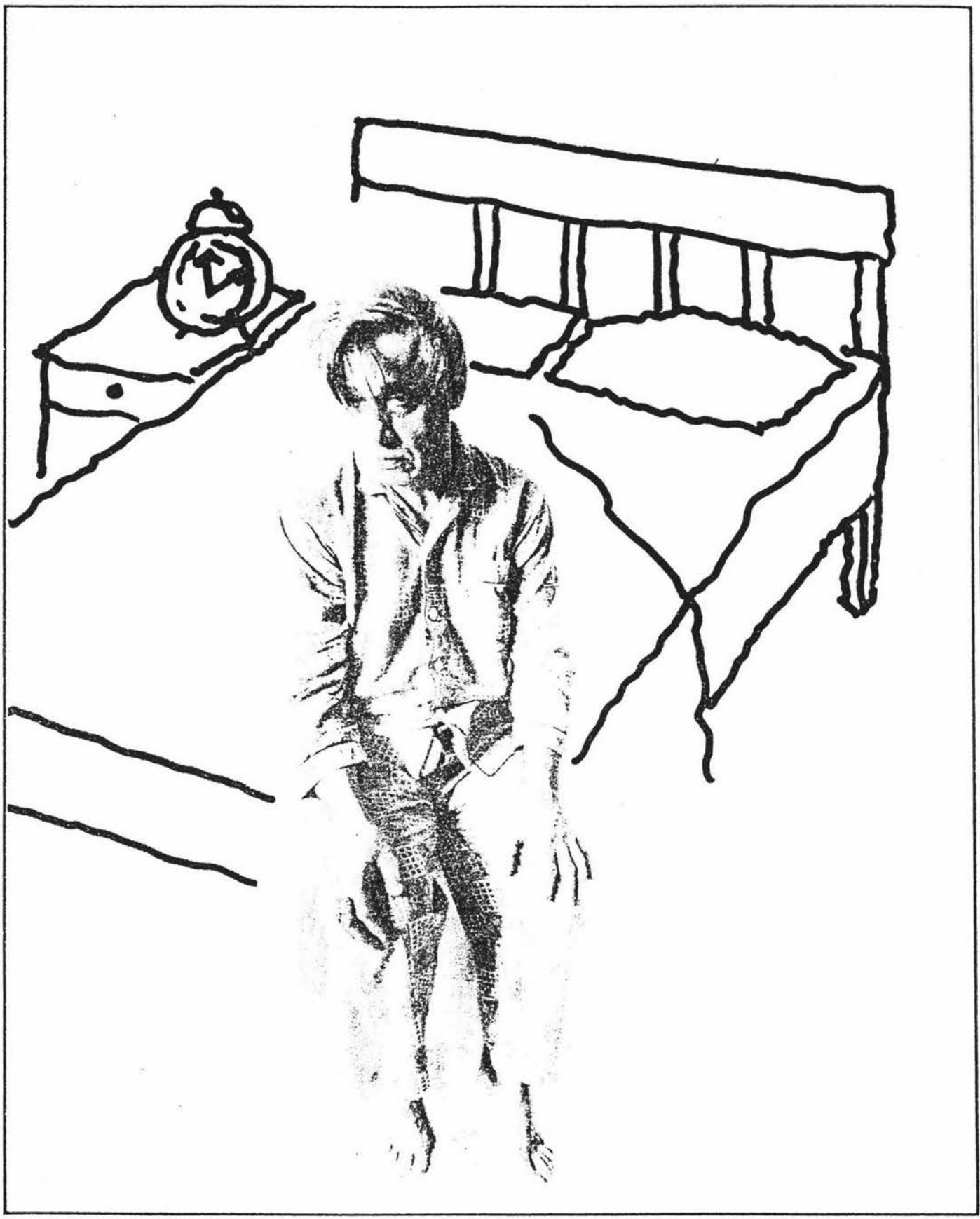
The demands of empirical research require a reliable measure and it has become important to assess the specific content of social relationships. After reviewing previous research Bell, et al., (1982) developed a social support inventory. They had found no established standard but their review verified that various indices such as marital status, relationship with family and friends and membership in religious institutions, clubs and organisations had all been viewed as indicators of support.

Since socioeconomic status has been found to be the single most powerful predictor of psychological distress in individuals (Warheit Holzer & Schwab, 1973), Bell and colleagues reasoned that to derive a scale with socioeconomic status as an implicit factor would obfuscate the roles of other variables in support. They empirically derived a scale conceptually independent of socioeconomic status and for which analyses could account for any variation in a depression scale independent of the socioeconomic factor.

They used items in a social support index that assesses social integration (club and church affiliations) family network relationships and friend items which probe for both instrumental and expressive support (Appendix A).

An important element in the inventory is an individual's "perception" that support and help is available if needed in a crisis.

Disagreements (La Rocco 1983; Thoits 1983) make it clear that there is a need for continuing examination of concepts, definitions and components of social support to provide a knowledge of whether social support is important and how social support is provided.



An intensified interest in social support has hardly reflected the discovery of new ideas. Social bonds, social integration and primary group relations in general are the central concepts of sociological theory. They are the "building blocks of social structure." (Thoits 1983) Recently growing evidence for the role of social networks in the occurrence and course of psychiatric disorder has accelerated interest.

DEPENDENT VARIABLE

DEPRESSIVE SYMPTOMS

The idea of social and psychological "illness" as distinct from biological disorder poses difficult problems of measurement. Psychological problems are distinct from psychiatric disease, and may be seen as examples of " behaviour pathology". Disturbed patterns of behaviour are disorders in and of themselves on a psychological level.

A depressive disorder is manifested in unsuitable responses that result in an identifiable and measurable change from that which is "considered optimal" in an individual's total functioning. It may be evidenced in social, psychological and biological manifestations. (Kimball 1982)

A depressive syndrome can be conceptualized as consisting of five major dimensions. Affective symptoms related to lowered mood : a variety of somatic symptoms : altered patterns of psychobiologic reactivity, such as sleep, and appetite : negative self evaluation involving lowered self esteem, self-blame, suicidal ideation and sense

Depressive Symptoms.

Photograph, Charley Whieldon.

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of guilt : and an existential dimension typified by pessimism, despair and gloomy outlook on the future.

Using these concepts Bell, et al., (1982) developed a scale based on 18 questions that are designed to measure depressive symptoms.

This inventory grew out of research with medical inpatients and outpatients and was built on a number of early studies that utilized similar approaches. These include cross-sectional studies such as the Stirling County (Leighton, Harding, Macklin, McMillan and Leighton 1963) and the Milltown Manhattan (Srole, Langner, Michael, Opler and Rennie, 1962) and the extensive clinical investigations of Bell and his colleagues (1982).

Cronbach's alpha (1951) was computed as a measure of internal consistency and the 18 items had an overall alpha coefficient of 0.90, well above the limit for scalability.

In investigations into the relationship among stressful life events, social support and depressive symptoms a scale such as this one is a suitable research instrument for measuring psychological impairment. (Appendix A)

SUMMARY

Numbers of Stressful Life Events and Social Supports, were the independent variables, and the Depression Scale score the dependent variable in the study. The reliability and validity of the Depressive Scale and the Stressful Life Event Inventory have greater acceptability than the Social Support measure. There is little consensus in the literature about the components and definition of social support and no established measuring instrument has been generally accepted.

CHAPTER V

SOCIODEMOGRAPHIC VARIABLES

Although there have been disagreements about the sociodemographic characteristics of persons with depressive symptoms certain relationships have been generally accepted.

More recently some of these relationships have either been changing or more precise measurement and statistical analysis is prevailing.

RACE

Early studies found that Blacks in the United States were less prone to depression than Whites (O'Malley 1914; Bevis 1921; Prudhomme 1938).

In 1969 Dohrenwend and Dohrenwend reported that they found no evidence of a difference between Blacks and Whites in the rate of the disorder.

In 1973 Warheit Holzer and Schwab found that Blacks had higher rates of depression than Whites. This at face value appeared to be more consistent with the National Health Survey for Health Statistics (1970) but the authors pointed out that when the analysis was controlled for socioeconomic status the difference was not statistically significant. The differences observed were related to socioeconomic status rather than "race". They found that familial and interpersonal networks and mental health in differing race and ethnic groups are a complex phenomenon and not amenable to simple generalizations. Their findings did not support more significant benefits of family and friend networks in any of the racial groups.

Bell, et al., (1981) in a study of epidemiological considerations

found that racial differences were not significant on a Global Pathological Scale when controlled for socioeconomic status.

This was also the case in another study (Bell, et al., 1982) of Black and White Americans. White males had the lowest mean score for depression and Black females the highest but when the "sex difference" was taken into consideration race difference was not significant.

In examining the relationship between minority status and the presence of psychological distress Roberts and Vernon (1984) found that when the scores of population samples of Anglos, Blacks and Mexican Americans were controlled for socioeconomic status there was no significant difference in the distress measures. They concluded that membership of an ethnic group per se, does not seem to increase the risk of psychological distress.

Warheit, et al., (1982) studied population samples including Whites, Blacks, Mexican-Americans, Anglos and Guamanians and found that at a global level, similarities were more remarkable than differences.

Blair Wheaton (1982) however found a differential vulnerability to stress across groups of Mexican-Americans and Anglos. Mexican-Americans were exposed to acute stressors at about the same rate as Anglos in his data, and were no more or less vulnerable to the effects of stressful events. Mexican-Americans, however were exposed to higher rates of chronic stress than Anglos and were less vulnerable to its effects (possibly through innoculation).

An English study using the Psychiatric Epidemiology Research Interview (PERI) Life Event Scale with a general population, obtained significantly higher overall mean differences in the depression ratings than an American study using the same scale (Dohrenwend, Krasnoff, Askenasy and Dohrenwend, 1978).

In a Cross-Cultural Comparison of British and American Psychiatric Emergencies, Bassuk, Winter and Apsler (1983) found that the greater percentage of British patients hospitalised compared with American, reflected the British limited support networks for non referred help. In both countries the patients perceived as most difficult were chronically maladjusted persons who had scanty social supports. In the two countries different criteria constituted an "emergency" and higher hospitalisation occurred in the British situation. Where different ethnic groups have access to the same resources racial differences may tend to disappear. The difference between the English and United States means reflected the differences in resources available.

Standard of living and level of community resources may account for some confusing reports in the literature about comparative levels of depressive symptoms in different racial groups.

Comparative studies of New Zealand and United States are few. One study of stressful life events (Isherwood and Adam, 1976) published Social Readjustment Questionaire (Holmes and Rahe, 1967; Masuda and Holmes, 1967) data from a selected sample of 67 New Zealanders associated with the academic, research and administrative departments of the Otago University Medical Faculty. They found significant agreement between New Zealand and United States ratings but had to note the academic bias of the New Zealand sample.

In a study of the Zung Self Rating Depression Scale (1965) Knight, Waal-Mannering and Spears (1983) found that a New Zealand small town population had significantly higher mean depression scale scores (33.65) than the American published means(26). The New Zealand sample consisted of 97.7% European and of 1.5% Maori ethnicity.

In a New Zealand study it is of interest to compare the results of a

similar survey for Maori and European ethnic groups. It is often popularly assumed that the extended Maori family is more supportive than the European type of nuclear family system. It has been emphasised by Haines (1982) that adequate research information relating to race and mental health in New Zealand "is an area desperately under researched".

SEX

In their study of Black and White population samples, Warheit et al., (1973) found that females of both races had significantly higher depression scores than did the males.

When `femaleness' was taken into their regression equation it was much more significantly related to high depression scores than either the variables race or age. This finding is consistent with reports in much of the literature (Lemkau, Tietze and Cooper 1942; Winokur and Pitts 1965; Taylor and Chave 1964; Sorenson and Stromgren 1961; Dean and Ensel, 1982; Haines 1983; Roberts and O'Keefe 1981).

The suggestion that this may be due to methodological artifacts associated with self reporting of psychiatric symptomatology, or female tendency to report symptomatology (Weissman and Klerman 1977; Phillips and; Segal, 1969) does not appear to be sufficient explanation. The suggestion that females are more likely to report psychological discomfort (Downey and Werry 1978) has been challenged by a New Zealand Mental Health foundation Heylen Poll (Haines 1983) which showed only minor sex differences in willingness to report personal feelings. On a 9 point scale females rated 4.75 and males 4.38.

Sex differential in depression could be related to the different social roles occupied by men and women (Nathanson, 1975). Philips

(1981) suggested that traditional sex-role stereotypes are an explanation and pointed out that males have more work connections and thus more non-kin relationships. For men, decreases in work setting support were associated with increases in both depression and psychosomatic symptoms. Decreases in family support were not associated with either form of symptom.

Women have more kin than non kin ties. For women workers (employed) both family and work-place support are correlated with depression (Holahan and Moos, 1981). Both employed women and homemakers have more depressive symptoms than males if there are children in the home.

It has been found that males in non traditional relationships had higher rates of depression than females in non traditional roles (Rosenfield, 1980). Rosenfield speculated that the relative loss or gain of power may be an explanation of sex differences in depressive symptoms.

Work roles tend to be associated with reduced depression in women but if the wife works the husband has a slightly higher score.

It would be necessary to control for the correlation between depression scores within couples before making substantive interpretations of whether couples with a full time home maker or working wife had more or less depression (Roberts and O'Keefe, 1981; Aneshensel, Frericks and Clark, 1981).

The sexes seem to differ on the components of support which are associated with emotional well-being. Philips (1981) found that network size rather than income and social integration affected male level of psychological symptoms.

How sex roles account for the differences in effects of network size and range of social activities is not clear. Studies which report sex

differences in social support involve normal populations and indicate that women tend to have more supportive relationships than men, yet suffer more depressive symptoms. (Ingersoll and Depner, 1980, Lowenthal and Haven, 1968).

Groups that Thoits (1982) found significantly more distressed by the experience of life events than their sociodemographic counterparts included both married and unmarried women. In Thoit's data the degree of social support (in particular, degree of integration into the neighbourhood) helped explain the vulnerability of some women to undesirable events.

Community surveys overseas which focus specifically on depressive disorders show strong sex differences (Haines 1982) but there are few comparable New Zealand studies. An urban study of Dunedin women showed that 20% felt depression was a problem (Society for Research on Women 1972) and the Federation of University Women reported that a study of housewives (1976) found 16% suffered depression.

In a study of the stress buffering properties of social support (Husaini, et al., 1982) among the rural married, Husaini found that support was more beneficial to females than to males.

This seemed to be the case in Tucker's (1982) study of social support applications in the treatment of female drug abuse. Findings included the indication that for heroin-addicted women the absence of social support was associated with the use of non social, potentially dysfunctional coping strategies while a similar pattern did not exist for males.

Young women report more social support but less satisfaction from it than do young men (Burke and Weir, 1978; Hirsch, 1981).

In the research of Bell et al., (1982) it was noted that females had

significantly higher mean depression scores than males in both Black and White race groups.

Some evidence has been found for the primacy of the value of a close confidante for females. Stokes and Wilson, (1984) found that while males and females did not differ in overall social support, females reported receiving more emotional support than did males. All these assumptions about differences in male-female preferences for types of social support claim empirical support in the literature. The theory of Thoits (1982) that degree of integration is more important for females than the more traditional claims about expressive support of friends, is worthy of investigation.

AGE

Reports of early research suggested that depressive symptoms increased with age (Grinker, Miller, Sabshin, Nunn and Nunnally, 1961) with indications of a peak at 45-60 yrs. (Watts, 1964)

More recently higher symptomatology has been reported in the late adolescent early adult age group and especially in young females (Bell, et al., 1981; Dean and Ensel, 1982).

The relationship between psychological impairment scores and age groups is particularly important as one of the maxims of epidemiology is that when a shift in age base for a chronic illness is towards a younger age group it forbodes an increase in the particular disorder.

The movement towards increased depressive symptomatology in the young seems to be substantiated by the fact that suicide rates are increasing dramatically for adolescents and young adults. In New Zealand the number of young people who have taken their lives has trebled in the past twenty years. (Taylor and Cummings 1985).

The Australian Bureau of Statistics (1984) has reported an 11% increase in suicide among young males between fifteen and twenty in the four years to 1982. Their figures show a decline in the number of young women who have committed suicide.

In the research of Bell et al., (1982) those in the youngest age group (16-22) had significantly higher mean depression scores, while no particular trends were observable for the other age categories. There were no significant differences for age in social support scale scores but for stressful events the youngest group had the highest level, with the incidence descending as age increased.

In Dean and Ensel's study (1982) young married females were more depressed than young males, with the females looking for strong-tie support outside the family. Their data also suggested "stages" with middle-age (25-49 yrs) the only stage where both male and female were interdependent and sharing the same support systems.

Age related crises are part of the natural development of living as new roles are assumed. Gould (1978) and Sheehy (1980) emphasise the universal nature of lifechange and stress. As an individual grows and develops his need for and use of social support changes. Gad and Johnson (1980) found no differences in symptomatology based on the amount of support available, but commented that different age groups perceive, report, or utilize support in ways different from others.

Age and life situations change and the availability accessibility and intensity of social support may be erroneously assumed by researchers who take a measure at one point in time.

SOCIOECONOMIC STATUS

A Socioeconomic status score is calculated following the method of the United States Bureau of Census (1960), by taking an average of the ranks for an individual's education, family income and occupation. In research these ranks should be based on the population sample rather than on national data to ensure that a respondent's score was determined by comparison with the specific population to which he belonged. (Warheit, Holzer, and Schwab, 1973).

Early researchers reported more incidence of depression among the middle and upper classes but it has been demonstrated that low socioeconomic status is a predictor of high depression scale scores (Thoits, 1982; Dohrenwend and Dohrenwend, 1969, Warheit, Holzer, and Arey, 1975; Hollingshead and Redlich, 1958;

The data of Bell, et al's., (1981) study confirmed what they considered to be "the single most consistent finding in all epidemiological research," those in the lower social statuses had significantly higher psychopathological scores than those of higher status.

In the research published by Bell, et al., (1982) the mean depression scale scores were in significant ascending order as socioeconomic status fell, and those in the lowest category of socioeconomic status had the highest mean number of stressful life events. This statistically inverse relationship is consistent with the findings of many other researchers in this field.

Beigel and Naparstek (1982) found that it is the transients and the newcomers to a community, and those who have become isolated because of age, bereavement or divorce who run a special risk of illness because of exposure to stress.

Although Thoits (1982) found disadvantaged people vulnerable to depression she reported that she found little support in her data for the hypothesis that this vulnerability can be explained by many stressful events and few social supports. She found that lower socioeconomic status was strongly related to psychological impairment but differential symptoms resulted for different categories of low status groups.

A confounding measurement of socioeconomic status for women is the fact that a married woman's status is usually measured by her husband's (Haines 1983) and single women being assessed by their own status. The expected level of impairment indicated in records for married woman who have been assessed by their husband's high status appears to over represent them in records. (Camilleri 1979)

When research is concerned with depression scale scores socioeconomic status should be included in the analysis to control for its direct or interactive effects, if any, upon depression scores in the light of its demonstrated power as a predictor of high depression scale scores.

SUMMARY

Measures of the Sociodemographic variables for Race, Sex and Age enable comparisons to be made between studies based on many populations. In the current study Socioeconomic Status was included as a control because of its well documented association with the dependent variable (depressive symptoms). It was calculated in relation with the community to which the respondent belonged rather than on national data.

CHAPTER VI

METHOD

DESIGN:

The theoretical model used to guide this retrospective research has been well reported in the literature (Bell et al., 1982; Bell et al., 1981; Bell Lin, Ice and Bell, 1979; Schwab, Bell, Warheit and Schwab, 1979; Schwab and Warheit, 1972; Warheit, et al., 1975; Frydman, 1981).

The data reported in this study were collected as cross-sectional interview surveys in Taihape Rural District, Taihape Borough and Palmerston North City.

SUBJECTS

Samples of persons 16 years and older were selected to match as nearly as possible the population distribution of the 1981 New Zealand Census.

Chi^2 analysis confirmed that each population sample was a "good fit" with the 1981 distribution of population in New Zealand for age and sex (Tables 1 and 2).

TABLE 1

Goodness of Fit of Age Distribution of Population Sample with New Zealand Census (1981).

Age in Years	Percent of Present Sample	Percent of N.Z. Census Population
16-22	21.57	18.77
23-29	18.65	14.60
30-44	22.74	25.33
45-59	22.74	21.82
60+	14.29	19.46

$X^2 = 2.57 \quad p>.05$

TABLE 2

Goodness of Fit of Male-Female Distribution of Sample Population with New Zealand Census (1981).

	Percent NZ Census	Percent Study Sample
Male	49.22	43.31
Female	50.78	55.69

$X^2 = .96 \quad p>.05$

Geographic Location Appendix B)

Taihape Rural N = 129

Taihape Borough N = 124

Palmerston North City N = 111

The socioeconomic status of the respondents was consistent with a normal distribution curve in each community to which the respondents belonged.

SUMMARY TABLE 3

Socioeconomic Status by the Entire Sample and Geographic Location.

		Socioeconomic Status				
Geographic Location	N	Low 1	2	3	4	5 High
Entire Sample	343	12	94	134	74	29
Rural	124	3	36	47	31	7
Town	108	4	26	47	18	13
City	111	5	32	40	25	9

The New Zealand National Census (1981) percentage of Maori people of 16 years and older was 7.7% and the total National percentage 8.92%.

Palmerston North City (14.5%), Taihape Borough (22.04%) and Rangitikei County (16.30%) of which Taihape rural area is a part, all have a higher proportion of persons of Maori ethnic orgin than the national average.

The percentage of Maori people included in the present study is 25.7% (N=88) which is greater than the national or local distributions. A higher proportion of Maori respondents was chosen to ensure sufficient numbers for valid assumptions to be drawn from the results. Separate statistics were analysed for race where appropriate.

European	N = 255
Maori	N = 88

MEASURING INSTRUMENTS

For the purposes of this research the Interview Schedule developed by Bell and colleagues (1982) (Appendix A) was adapted for New Zealand cultural conditions. A pilot study of twenty four respondents was conducted. In each of the three communities Rural, Town and City two males and two females of both European and Maori ethnicity were interviewed to test whether the Survey Schedule was culturally suitable. Some of the items were subsequently reworded to clarify the meaning in the New Zealand setting. e.g. "Are you in good spirits" was changed to "Do you have a feeling of well-being?" to avoid Maori connotations relating to the spirits of their ancestors. "Are you married?" was reworded "Do you have a stable relationship with a person of the other sex?". "Fired" to "Loss of job".

The Depressive Inventory (Dependent Variable) (Appendix C).

The validated and reliable depression symptom inventory used by Bell and colleagues, culturally adapted, measured the dependent variable.

The depressive symptom score was calculated from a possible range of 0-72 on the basis of the respondents perceived presence of the

symptoms,

A pilot study using three alternative scoring systems (all having a maximum of 72 as in the Bell et al (1982) study) for each of 6 subjects yielded minimumly lower scores for the 5 choice option, so this system was adapted.

4 Often

3 Sometimes

2 Occasionally

1 Rarely

0 Never

Stressful Life Events (Independent Variable) (Appendix C).

The Inventory consisted of 30 items, 29 selected by Bell and collegues from Paykel et al (1969) who extended the work of Holmes and Rahe, and one item "other stressful event" used in the interview to elicit whether some alternative event evoking major stress had occurred during the period. It was counted if in the opinion of the researcher it was unrelated to depressive symptoms.

Respondents were not asked to identify to the researcher the particular nature of the stressful events selected from the inventory but a majority of them did. Responses were not "weighted" in any way as the procedure has not been found to influence the dependent outcome (Tausig 1982).

The stressful life event score consisted of the number of reported events that occurred during the 12 month period prior to the interview.

Social Support (Independent Variable) (Appendix C).

The social support inventory, also developed by Bell and colleagues

(1982) consisted of 8 items. Respondents were given one point on the scale for each affirmative answer. The score reflected both a measure of social support and the important issue of the individual's perceiving that support was available if needed.

Items represented the concepts of community integration, marital status, family cohesion and relationship with friends which probed for both expressive and instrumental support.

Socioeconomic Status (SES) (Appendix D).

Socioeconomic status was calculated as an average of the ranks for an individual's education, occupation and family income on the same principle as the United State Bureau of Census (1968) which was used by Bell and colleagues (1982).

This measure was included to control for the well documented power of socioeconomic status to predict high depression scores. (Bell et. al. 1982; Thoits, 1982; Belle, 1982).

PROCEDURE

The subjects were visited in their homes and the project explained to them. Upon their consent to take part in the survey they were administered an intensive interview schedule designed to measure aspects of mental health, social well-being, psychiatric symptoms social functioning and interpersonal relationships.

The Social Support Inventory (APPENDIX C) was introduced first and completed in cooperation between the interviewer and interviewee.

The schedule was then handed to the respondent who was given the opportunity to privately mark the number of Stressful Events experienced during the past twelve months.

The respondent also marked the Depressive Symptom Scale.

The Sociodemographic information was marked by the interviewer who tactfully obtained the imformation about age, education, occupation and income. The non response rate was less than 1%: this low rate partly compensated for the small sample size and contributed toward raising the confidence level.

Data was used for a total of 343 respondents for whom complete information was obtained.

STATISTICAL ANALYSIS

To obtain as clear a picture as possible of the relationships among stressful events, social support and depressive symptoms a definitional schematic similar to Bell et al., (1982) and Frydman (1981) was used which allows for an examination of relationships in terms of direct, conditional and interactive effects. A multistage analysis was conducted.

Direct Effects

First the sociodemographic distribution of mean scores for depression, life events and social support was examined using one way analysis of variance (ANOVAs) for each community location and for the entire population sample.

ANOVAs were used to assess whether there was any significant difference between the mean depression scale scores (dependent measures) in the three locations of community.

These were analysed also to assess the consistency of the basic sociodemographic findings as compared with other existing research in the field and to evaluate whether there were strong sociodemographic

findings (Bell et al., 1982).

It was of interest to compare European and Maori perceptions of support in the light of popular assumptions of the comparative importance of the Maori extended family structure. ANOVA's were conducted on the separate types of social support for both Race and Sex.

Further, using a one-way ANOVA the distribution of mean depression scores, of life event categories, and social support groups, was examined to obtain answers about direct effects by asking, "Are life events and social support, when considered separately, related to depressive symptoms?" in each of the three communities and for the entire sample.

Conditional Effects

Second there was an attempt to assess whether there were certain conditional effects existing in any of the samples that might support a "buffering" or "contingent" hypothesis by answering the following question: "Is the relationship between life events and depressive symptoms mediated by the level of social support?" and Conversely "Is the relationship between social support and depressive symptoms mediated by the number of life events?"

At this stage of the analysis multiple one-way ANOVAs of mean depression scale scores for life events controlling for social support groups and conversely one-way ANOVAs of mean depression scale scores for social support groups controlling for number of life events was conducted for the entire population sample, and for each of the three community sub samples. A similar analysis was also conducted to reveal whether there was any difference for sex.

Interaction Effects

Third, in order to determine whether interactive effects existed, a three-way analysis of variance was conducted using stressful events by social support by socioeconomic status and depression scores to answer the question : "Are there joint effects of life events and social support upon depressive symptoms which are not attributable just to the sum of their separate parts?" With small numbers it was necessary to collapse categories for the analysis to avoid empty cells and inconclusive results.

Regression Analyses

Fourth, a series of regression analyses were conducted in order to reveal the contribution of each variable to the explanation of the variance in the depression scale.

Correlation

A correlation matrix also examined the relationship of each significant variable with the mean depression score and an intercorrelation demonstrated the interrelationships of the variables.

SUMMARY

The retrospective design was based on a replication of Bell et al's., (1982) cross-sectional study. Rural, Town and City, European and Maori respondents were interviewed (N=343) for the measurement of Stressful Life Events, Social Support and Depressive Symptoms. Statistical analysis procedures included: Chi^2, Analysis of Variance, Correlation and Multiple Regression Techniques.

CHAPTER VII

RESULTS

GEOGRAPHIC LOCATION

There were no significant differences for Depression Scale Score, number of Stressful Life Events or number of Social Supports between the Geographic Locations of Rural, Town or City.

DEPRESSION SCALE SCORES BY GEOGRAPHIC LOCATION

An Analysis of Variance (Table 4) showed that there was no statistically significant difference between the mean depression scores for Rural (24.08) Town (24.08) and City (22.05).

Although overall differences were not significant there were within the Town data differences between sociodemographic groups which were not revealed in the other two communities. (Table 5)

There is a possibility that some effect may exist in country Town conditions affecting stressful life events, social support and depressive symptoms which is not present in Rural or City communities and which could possibly become more evident in a study using greater population samples.

TABLE 4

Mean Depression Scale Scores, Number of Life Events and Social Supports by Geographic Location.

Summary Table

Mean Depression Scale Score	N	Mean	SD	Significance
Rural	124	24.08	12.86	ANOVA
Town	108	24.08	12.57	F = 1.060
City	111	22.05	10.76	df = 2,340
				p > .05
Mean Number of Stressful Life Events				
Rural	24	2.44	2.02	ANOVA
Town	108	2.39	1.95	F < 1.00
City	111	2.51	2.00	df = 2,340
				p > .05
Mean Number of Social Supports				
Rural	124	6.05	1.67	ANOVA
Town	108	5.93	1.42	F < 1.00
City	111	6.00	1.55	df = 2,340
				p > .05

TABLE 5

The Distribution of Significant Differences Within Each of the Three Geographic Communities

Variables	Rural	Town	City
Depression	age ***	Race Sex**	NS
		Age**	
		Socioeconomic Status*	
Stressful Life Events	NS	Race Sex**	Race*
		Socioeconomic Status**	
Social Support	NS	Age**	NS

* = $p < .05$

** = $p < .01$

*** = $p < .001$

VARIABLES BY SOCIODEMOGRAPHICS

DEPRESSION SCALE SCORES. (Tables 6, 7 8 and 9)

The scale had a possible range of scores from 0 to 72; the mean in the combined sample was 23.42 with a standard deviation of 12.13.

Race-sex

An examination of the depression scores for race-sex (Table 6) shows European Males had the lowest (20.53) and Maori females the highest (27.85) scores. It can be seen that females had higher scores than males and that Maori depression scale scores were higher than European. The significance of these effects was found in the Town sample, but not in the City or Rural sample populations.

Age

Those in the youngest age (16-22) group in the entire sample had the highest mean depression scores (25.99) while those in the 60+ group had the lowest (17.86). Other age group scores did not show a trend. In the Rural population the 60+ age group had significantly lower mean depression scores (14.37) than all the other groups.

Socioeconomic Status. (SES)

The typical statistically significant inverse relationship between SES depression scale score was evident in the data of the entire sample. Those with the lowest SES had the highest mean scores and those in the highest SES quintile had the lowest mean scores. It was the Town population which accounted for this significance.

TABLE 6

Depression Scale Scores by Sociodemographics.

Sociodemographic Variables (N=343)	N	Mean	SD	Significance
Total	343	23.42	12.13	
Race-Sex				ANOVA
European Male	108	20.53	11.13	F = 4.46
European Female	147	23.80	12.51	df = 3,339
				p < .01
Maori Male	41	24.63	12.09	
Maori Female	47	27.85	11.83	
Age				
16-22	74	25.99	11.06	ANOVA
23-29	64	25.80	12.12	
30-34	78	24.68	12.53	F = 5.07
45-59	78	21.28	11.56	df = 4,338
60+	49	17.86	11.96	p < .01
SES				
Low 0-20	12	29.50	13.15	ANOVA
21-40	94	25.65	11.99	
41-60	134	23.81	13.16	F = 3.56
61-80	74	20.49	10.47	df = 4,338
High 81-100	29	19.41	8.34	p < .01

TABLE 7

Rural Depression Scale Scores by Sociodemographics

Sociodemographic variables	N	Mean	SD	Significance
SES Rural	124	24.08	12.86	
Race-Sex				
Rural				
European Male	33	21.11	13.00	ANOVA
European Female	58	25.54	12.70	F < 1
Maori Male	17	25.35	12.85	df = 3,120
Maori Female	11	24.73	13.26	p > .05
16-22	30	24.87	10.36	ANOVA
23-29	18	33.67	15.25	F = 6.178
30-44	34	23.29	11.56	df = 4,119
45-59	23	24.74	12.13	p < .001
60+	19	14.37	10.86	
Low 0-20	3	17.00	1.00	
21-40	36	27.08	13.51	ANOVA
41-60	47	24.62	14.00	F = 1.25
61-80	31	21.23	10.65	df = 4,119
High 81-100	7	20.71	10.94	p > .05

TABLE 8

Town Depression Scale Scores by Sociodemographics

Sociodemographic Variables	N	Mean	SD	Significance
Town	108	24.08	12.57	
Race-Sex				
European Male	39	19.00	9.82	ANOVA
European Female	38	24.40	13.70	F = 5.322
Maori Male	12	27.67	14.17	df = 4,104
Maori Female	19	31.63	9.41	p < .01
Age				
				ANOVA
16-22	20	28.00	13.15	F = 4.116
23-29	23	23.91	8.91	df = 4,103
30-44	26	29.58	13.15	p < .01
45-59	22	19.23	11.64	
60+	17	17.59	12.17	
SES				
				ANOVA
Low 0-20	4	39.75	11.27	F = 2.714
21-40	26	26.27	10.18	df = 4,103
41-60	47	24.19	14.78	p < .05
61-80	18	19.78	10.31	
High 81-100	13	20.46	6.23	

TABLE 9

City Depression Scale Scores by Sociodemographics

Sociodemographic Variables		N	Mean	SD	Significance
City		111	22.05	10.76	
Race-Sex					
	European Male	31	21.74	10.30	ANOVA
	European Female	51	21.37	11.12	$F < 1$
	Maori Male	12	20.58	6.60	$df = 3,107$
	Maori Female	17	25.65	12.82	$p > .05$
Age					
					ANOVA
	16-22	24	25.71	10.25	$F = 1.18$
	23-29	23	21.52	9.40	$df = 4,106$
	30-44	18	20.22	11.66	$p > .05$
	45-59	33	20.24	10.90	
	60+	13	23.31	12.10	
SES					
					ANOVA
Low	0-20	5	28.80	12.52	$F = 1.400$
	21-40	32	23.53	11.60	$df = 4,106$
	41-60	40	22.40	9.95	$p > .05$
	61-80	25	20.08	10.73	
	81-100	9	16.89	9.23	

STRESSFUL LIFE EVENTS. (Tables 4, 10, 11, 12 and 13)

In the entire sample the total mean score was 2.45 with a standard deviation of 1.98. Geographic Location was not significant.

Race-Sex

Maori respondents reported the highest number of stressful events (for both male and female) and European males reported the fewest. The Town Maori respondents reported 3.35 mean number of stressful events and the European 1.49. This trend was also present in the City data (Maori 3.47; European 2.14) but not in the Rural sample.

Age

In the entire sample, there was an irregular distribution of mean number of stressful life events by age. There was a nonsignificant tendency for number of events to increase at the 45-59 age group level and decrease after 60 + years.

Socioeconomic Status (SES).

In the entire sample there was a tendency for the lowest SES category to have the highest mean number of stressful life events.

As with depression mean score, so with the number of stressful life events, it was in the Town community that differences obtained among the socioeconomic groups.

TABLE 10

Stressful Life Events By Sociodemographics (N=343)

Sociodemographic Variables		N	Mean	SD	Significance
Total		343	2.45	1.98	
Race-Sex					ANOVA
	European Male	108	1.88	1.55	F = 7.504
	European Female	147	2.42	2.06	df = 3,339
	Maori Male	41	3.05	2.25	p < .001
	Maori Female	47	3.30	1.99	
Age					ANOVA
	16-22	74	2.51	2.08	
	23-29	64	2.39	1.77	F = 2.675
	30-44	78	2.42	2.00	df = 4,338
	45-59	78	2.90	2.19	p < .05
	60+	49	1.73	1.55	
SES					ANOVA
Low	0-20	12	3.75	2.34	
	21-40	94	2.80	2.12	F = 2.965
	41-60	134	2.19	1.87	df = 4,338
	61-80	74	2.41	1.95	p < .05
	81-100	29	2.03	1.68	

TABLE 11

Rural Stressful Life Events by Sociodemographics

Sociodemographic Variable	N	Mean	SD	Significance
Total	124	2.44	2.02	
Race-Sex				
European				ANOVA
Male	38	1.95	1.69	F = 2.203
Female	58	2.62	2.20	df = 3,120
Maori				p > .05
Male	17	2.35	2.21	
Female	11	3.27	1.56	
Age				
16-22	30	2.03	1.78	ANOVA
23-29	18	2.61	2.23	F = 1.832
30-44	34	2.50	2.15	df = 4,119
45-59	23	3.26	2.32	p > .05
60+	19	1.79	1.23	
SES				
Low 0-20	3	3.67	1.53	ANOVA
21-40	36	2.64	2.26	F = 1.61
41-60	47	2.02	1.84	df = 4,119
61-80	31	2.90	2.04	p > .05
High 81-100	7	1.57	1.51	

TABLE 12

Town Stressful Life Event Scale Scores by Sociodemographics

Sociodemographic Variable		N	Mean	SD	Significance
Total		108	2.39	1.95	
Race-Sex					ANOVA
	European Male	39	1.72	1.41	F = 6.354
	European Female	38	2.29	1.90	df = 3,104
	Maori Male	12	3.50	2.20	p < .01
	Maori Female	19	3.26	2.31	
Age	16-22	20	2.80	2.44	ANOVA
	23-29	23	2.13	1.55	
	30-44	26	2.23	1.97	F < 1
	45-59	22	2.86	1.91	df = 4,103
	60+	17	1.88	1.80	p > .05
SES					
	Low 0-20	4	5.50	2.89	ANOVA
	21-40	26	2.92	2.21	F = 4.65
	41-60	47	2.28	1.78	df = 4,103
	61-80	18	1.56	1.04	p < .01
	High 81-100	13	1.92	1.66	

TABLE 13

City Stressful Life Event Scale Scores by Sociodemographics

Sociodemographic Variable		N	Mean	SD	Significance
Total		111	2.51	2.00	
Race-Sex					
	European Male	31	2.00	1.57	ANOVA
	European Female	51	2.29	2.02	F = 4.678
	Maori Male	12	3.58	2.31	df = 3,107
	Maori Female	17	3.35	1.97	p < .05
Age	16-22	24	2.88	2.07	ANOVA
	23-29	23	2.49	1.62	F = 1.166
	30-44	18	2.56	1.82	df = 4,106
	45-59	33	2.67	2.30	p > .05
	60+	13	1.46	1.71	
SES					
	Low 0-20	5	2.40	1.52	
	21-40	32	2.88	1.93	ANOVA
	41-60	40	2.30	2.04	F < 1
	61-80	25	2.40	2.18	df = 4,106
	High 81-100	9	2.56	1.88	p > .05

SOCIAL SUPPORT SCALE SCORES. (Tables 14, 15 16 and 17)

This scale with a range of 0-8 had a total sample mean of 5.99 had a standard deviation of 1.55. It is interesting to note that there were no statistically significant differences in the mean scores for social support in any of the Geographic Locations. (Table 4)

Age

There was a tendency however for the 30-44 age groups, in all the communities, to report fewer supports. This is consistent with the findings of other researchers. (Gould 1978). The 60+ group in the Town also reported fewer supports.

TABLE 14

Social Support Scale Scores By Sociodemographics (N=343)

Sociodemographic Variables	N	Mean	SD	Significance
Total	343	5.99	1.55	
				ANOVA
Race-Sex				
				F < 1
European Male	108	6.05	1.52	df = 3,339
European Female	147	5.94	1.59	p > .05
Maori Male	41	6.12	1.16	
Maori Female	47	5.94	1.33	
Age				
16-22	74	6.00	1.28	ANOVA
23-29	64	6.25	1.53	
30-44	78	5.82	1.67	F = 2.81
45-59	78	6.28	1.46	df = 4,338
60+	49	5.47	1.78	p < .05
SES				
Low 0-20	12	5.75	1.49	ANOVA
21-40	94	5.72	1.68	
41-60	134	6.21	1.45	F = 1.44
61-80	74	5.99	1.63	df = 4,338
High 81-100	29	6.00	1.34	p > .05

TABLE 15

Rural Social Support Scale Scores by Sociodemographics.

Sociodomographic Variable	N	Mean	SD	Significance
Total	124	6.05	1.67	
Race-Sex				
European				ANOVA
Male	38	6.26	1.66	F < 1
Female	58	6.03	1.59	df = 3,120
Maori				p > .05
Male	17	5.94	2.16	
Female	11	5.55	1.37	
Age				
16-22	30	6.13	1.46	ANOVA
23-29	18	6.17	2.01	
30-44	34	5.94	1.69	F < 1
45-59	23	6.39	1.67	df = 4,119
60+	19	5.58	1.68	p > .05
SES				
Low 0-20	3	6.00	1.00	ANOVA
21-40	36	5.89	1.98	F < 1
41-60	47	6.15	1.43	df = 4,119
61-80	31	6.16	1.77	p > .05
High 81-100	7	5.71	1.50	

TABLE 16

Town Social Support Scale Scores by Sociodemographics

Sociodemographic Variable		N	Mean	SD	Significance
Total		108	5.93	1.42	
Race-Sex					ANOVA
					F < 1
	European Male	39	5.82	1.21	df = 3.104
	European Female	38	5.87	1.66	p > .05
	Maori Male	12	6.08	1.62	
	Maori Female	19	6.16	1.21	
Age					
	16-22	20	6.00	1.12	ANOVA
	23-29	23	6.39	1.08	F = 3.656
	30-44	26	5.73	1.64	df = 4.103
	45-59	22	6.36	1.09	p < .01
	60+	17	4.94	1.71	
SES					
Low	0-20	4	5.93	0.96	ANOVA
	21-40	26	5.25	1.33	F < 1
	41-60	47	5.58	1.65	df = 4,103
	61-80	18	6.06	1.11	p > .05
High	81-100	13	6.15	1.14	

TABLE 17

City Social Support Scale scores by Sociodemographics

Sociodemographic Variables	N	Mean	SD	Significance
Total	111	6.00	1.55	
Race-Sex				
European				F < 1
Male	31	6.06	1.69	df = 3,107
Female	51	5.88	1.57	p > .05
Maori				
Male	12	6.42	1.31	
Female	17	5.94	1.43	
Age				
16-22	24	5.83	1.20	F < 1
23-29	23	6.17	1.56	df = 4,106
30-44	18	5.72	1.74	p = > .05
45-59	33	6.15	1.54	
60+	13	6.00	1.96	
SES				
Low 0-20	5	6.00	2.12	
21-40	32	5.66	1.60	
41-60	40	6.45	1.22	F = 1.410
61-80	25	5.72	1.77	df = 4,106
81-100	9	6.00	1.58	p = > .05

Race-Sex

The results of analyses of variance conducted for the different types of social support can be summarized into the following categories.

Social integration (Clubs:Church)

Relatives

Friends

(a) instrumental

(b) expressive

Marriage

An analysis of the different categories of Social Support by race and sex showed more similarities than differences.

Race

Analysis by race, indicated no differences between the races for the support of relatives or for any of the other categories. (Table 18)

Sex

The difference for sex consisted in males belonging to clubs and females to church. Females also showed more tendency to ask relatives for instrumental help. (Table 18)

TABLE 18

Race and Sex by Type of Social Support

Sociodemographic Variables	N	Mean	SD	Significance
Race by Relative (near)				ANOVA
European	251	.29	.46	$F < 1$
Maori	90	.27	.44	$df = 1,339$
				$p > .05$
Race by Relatives (to help)				ANOVA
European	251	.22	.41	$F < 1$
Maori	90	.20	.40	$df = 1,339$
				$p > .05$
Sex by Club				ANOVA
Male	147	.14	.35	$F = 15.49$
Female	194	.32	.47	$df = 1,339$
				$p < .001$
Sex by Church				ANOVA
Male	147	.63	.48	$F = 3.92$
Female	194	.53	.50	$df = 1,339$
				$p < .05$
Sex by Relatives (to help)				ANOVA
Male	147	.16	.37	$F = 3.99$
Female	194	.25	.44	$df = 1,339$
				$p < .05$

Age

There was a tendency for the 30-44 and 60+ age groups, especially in the Town, to report fewer supports.

Socio-economic Status

There was no relationship between status and number of social supports. (Table 14)

DIRECT EFFECTS

STRESSFUL LIFE EVENTS AND MEAN DEPRESSION SCALE SCORES

(Tables 19, 20, 21 and 22) In evaluating the direct effects of increasing number of life events on mean depressive scale scores the following observations were made. Previously it was noted that the mean depression scale score was 23.42. For those who reported no stressful life events in the last twelve months there was a mean of 18.53. However, with an increasing number of stressful events it can be seen that the mean depression scale scores became increasingly elevated with those reporting more events obtaining a higher depression score. The data were significant below the .1% level of significance.

Data for the three locations of community were collapsed to 5 groups to avoid empty cells in the analysis.

0 Events

1 Event

2 Events

3 Events

4+ Events

There was a significant direct relationship between mean number of stressful events and mean depression scale scores in all Rural, Town and City communities.

TABLE 19

Life Events and Mean Depression Scale Scores (direct effects) (N=343)

Number of Life Events	N	Mean	SD	Significance
Total	343	23.42	12.13	
0 Events	59	18.53	11.38	F = 16.76
1 Event	65	18.34	10.91	df = 4,338
2 Events	74	22.55	11.01	p < .001
3 Events	56	23.52	9.25	
4+ Events	89	31.04	12.28	

TABLE 20

Rural Life Events and Mean Depression Scale Scores (direct effects)

Number of Events	N	Mean	SD	Significance
Total	124	24.08	12.86	
0 Events	25	16.20	10.52	F = 7.94
1 Event	17	21.35	12.63	df = 4,120
2 Events	29	23.41	11.84	p = < .001
3 Events	21	22.95	8.45	
4+ Events	32	33.03	13.31	

TABLE 21

Town Life Events and Mean Depression Scale Scores (direct effects)

No. of Events	N	Mean	SD	Significance
Total	108	24.08	12.56	
0 Events	18	22.00	14.84	F = 3.85
1 Events	23	17.96	10.92	df = 4,104
2 Events	23	22.70	12.81	p < .01
3 Events	18	26.28	10.73	
4+ Events	26	30.65	10.52	

TABLE 22

City Life Events and Mean Depression Scale Scores (direct effects)

No of Events	N	Mean	SD	Significance
Total	111	22.05	10.76	F = 6.87
				df = 4,107
0 Events	16	18.25	7.10	p < .001
1 Events	25	16.64	9.61	
2 Events	22	21.27	7.72	
3 Events	17	21.29	8.29	
4+ Events	31	29.32	12.64	

SOCIAL SUPPORT AND MEAN DEPRESSION SCALE SCORES

(Tables 23, 24, 25 and 26)

The Tables were collapsed to 6 categories to avoid empty cells. An examination of the sociodemographic data reveals no significant direct relationship between social support and mean depression scale scores in the entire sample or in Rural, Town or City.

TABLE 23

Social Support and Mean Depression Scale Scores (direct effects)
(N=343)

Social Support Groups	N	Mean	SD	Significance
Total	343	23.42	12.13	
3 or fewer	24	28.38	17.37	F = 1.44
4	28	25.11	11.08	df = 5,337
5	67	23.55	11.50	p > .05
6	75	22.81	10.44	
7	91	21.59	11.01	
8	58	24.14	14.07	

TABLE 24

Rural Social Support and Mean Depression Scale Scores (direct effects)

Social Support Groups	N	Mean	SD	Significance
Total	124	24.08	12.86	
3 or fewer	10	34.00	21.75	F = 1.51
4	9	19.89	10.01	df = 5,118
5	23	23.26	11.37	p > .05
6	21	23.00	12.26	
7	37	23.16	11.22	
8	24	24.67	12.63	

TABLE 25

Town Social Support and Mean Depression Scale Scores (Direct effects)

Social Support Groups	N	Mean	SD	Significance
Total	108	24.08	12.56	
3 or fewer	4	26.25	15.80	F = 1.45
4	11	30.09	11.03	df = 5,102
5	25	24.44	12.71	p > .05
6	26	23.42	11.10	
7	29	20.00	9.99	
8	13	28.08	18.39	

TABLE 26

City Social Support and Mean Depression Scale Scores (direct effects)

Social Support Groups	N	Mean	SD	Significance
Total	111	22.05	10.76	F = 0.197
				df = 5,105
3 or fewer	10	23.60		p > .05
4	8	24.13		
5	19	22.74		
6	28	22.14		
7	25	20.92		
8	21	21.10		

Weak direct effect of Social Support

In a two way ANOVA (Table 27) a small direct association between Social Support and Depression score was detected in the data of combined population samples.

TABLE 27

Two-way and Three-way ANOVAs with Depression by Stressful Events (SLE) Social Support (SS) and Socioeconomic Status (SES) for Entire Population Sample. (N=343)

Variation	Sum of Squares	df	Mean Squared	F	p
Main Effects	1080.72	11	981.97	8.21	< .001
SLE	8027.69	4	2006.92	16.77	< .001
SES	1007.87	2	503.94	4.21	< .05
SS	1412.61	5	282.43	2.36	< .05
Two-Way Interactions	4502.31	38	118.48	0.99	NS
SLE X SES	891.86	8	111.48	0.93	NS
SLE X SS	2199.01	20	109.95	0.92	NS
SES X SS	1105.60	10	110.56	0.92	NS
Three-way Interactions	4226.87	36	117.41	0.98	NS
SLE X SES X SS	4226.87	36	117.41	0.98	NS
Explained	19530.90	85	229.78	1.92	< .001
Residual	30748.00	257	119.64		
Total	50278.90	342	147.01		

TABLE 28

Correlation of significant variables with depression score (N=343)

Stressful Events	.36	***
Age	.22	***
Socioeconomic Status	.20	***
Social Support	.09	NS

*** = $p<.001$

Summary: Direct Effects

So far some basic findings have been presented.

1. There were no significant differences for Depression, Stressful Life Events, and Social Support scale scores for Rural, Town and City. (Table 4 p.60)
2. The degree of depressive symptoms and number of life events varied among all Sociodemographic (Race, Sex, Age, Socioeconomic) groups within the Town population but only within the Age group in the Rural for Depression and the Race group in the City for Stressful Events. (Table 5 p.61)
3. The level of Social Support varied significantly only among the Age groups of the Town. (Table 5 p.61)
4. The degree of Depressive Symptoms and the number of Stressful Events varied inversely with Socioeconomic Status for the Town population only. (Tables 8 p.65 and 12 p.70)

5. There was a direct negative relationship between number of stressful events and depression scale scores in all the communities. (Table 27 p.86; Tables 19 to 22 pages 81 and 82)

6. There was a weak direct relationship between social support and depression scale scores. (Table 27 p.86; Tables 23 to 26, pages 83 to 85)

LEVELS OF SOCIAL SUPPORT/STRESSFUL LIFE EVENTS AND DEPRESSIVE SYMPTOMS CONDITIONAL EFFECTS (Tables 29, 30, 31 and 32)

In order to test for conditional effects ANOVAs were conducted on each of the rows and columns of these tables. At each level of social support, group means on the depression symptom scale for number of life events groups were analysed. Similarly, at each number of life events categories group means on the depressive symptom scale for the various social support groups were analysed. This statistical strategy was based upon the work of Bell et al., (1982) and Lin, et al., (1979) to examine conditional effects. The Tables reveal some interesting findings. By examining each of the various rows (Social support groups) it can readily be observed that with the increase of numbers of life events there is a statistically significant increase in the mean depression scale scores for all social support groups except groups 3 and 4. In groups 3 and 4 a similar trend did not reach a level of significance.

This portion of the analysis demonstrates the differential effect of life events upon depressive symptom scores across social support groups. As the number of stressful events increased the depression scale score also increased. It seems reasonable to conclude that depressive symptoms may be mediated by life events. Tables 33 and 34 indicate that this may be more pronounced among females than males. There is no reason to assume, however, that the effect is not just of the additive variety.

An examination of the columns of Tables 29 to 32 shows that within each number of life event categories the mean depression scale score is not decreased by the increased level of social support.

TABLE 29

Mean Depression Scale Scores For Social Support by Numbers of Life Events (conditional effects) (N=343)

Social Support Groups	Numbers of Events						
	0	1	2	3	4+	F	(df)
3 or fewer	17.33	21.50	38.50	26.00	44.29	4.25**	4,19
4	31.00	18.75	24.20	25.00	27.50	0.53NS	4,23
5	20.67	17.19	25.22	23.09	28.05	2.26NS	4,62
6	19.95	19.13	19.67	25.90	30.75	4.37**	4,70
7	13.60	17.73	20.37	20.38	28.90	7.33***	4,86
8	20.91	18.45	22.33	23.82	37.00	3.16*	4,53
F	1.27NS	0.12NS	1.45NS	0.50NS	2.92*		
(df)	(5,53)	(5,59)	(5,68)	(5,50)	(5,83)		

* $p < .05$

** $p < .01$

*** $p < .001$

TABLE 30

Rural Mean Depression Scale Scores for Social Support Groups by Number of Life Events for the (N=124) (conditional effects)

Social Support Groups	Number of Life Events						
	0	1	2	3	4+	F	(df)
3 or fewer	17.25	22.00	38.50		57.33	4.46*	(3,6)
4		11.00	19.50	28.00	18.25	0.64	(3,5)
5	30.00	20.00	21.56	19.00	29.00	0.67	(4,18)
6	14.20	24.25	19.25	22.33	34.00	2.18	(4,16)
7	14.33	22.25	23.33	22.00	31.90	3.86**	(4,32)
8	17.67	21.00	27.33	24.00	37.25	1.76	(4,19)
F	0.54	0.15	0.88	0.34	5.54***		
(df)	(4,20)	(5,11)	(5,23)	(4,16)	(5,26)		

* $p < .05$

** $p < .01$

*** $p < .001$

TABLE 31

Town Mean Depression Scale Scores for Social Support Groups by Numbers of Life Events (N=108) (conditional effects)

Social Support Groups	Number of Life Events						
	0	1	2	3	4+	F	(df)
3 or fewer	18.50			46.00	22.00	1.20	(2,1)
4	31.00	27.33		23.33	39.00	1.14	(3,7)
5	16.00	36.00	14.78	28.20	28.20	4.00**	(4,20)
6	22.50	17.17	19.67	31.25	32.00	2.05	(4,21)
7	13.25	15.67	15.67	20.50	28.56	3.71**	(4,24)
8	31.00	21.00	34.00	9.00	33.00	0.42	(4,8)
F	0.63	2.98*	2.11	2.34	0.64		
(df)	(5,12)	(4,18)	(3,19)	(5,12)	(5,20)		

* $p < .05$

** $p < .01$

*** $p < .001$

TABLE 32

City Mean Depression Scale Scores for Social Support Groups By Number of Life Events for (Conditional effects)

Social Support Groups	Number of Life Events					F	(df)
	0	1	2	3	4+		
3 or fewer	16.67	21.33		6.00	38.67	10.55**	(3,6)
4		21.33		24.75	30.00	0.21	(2,5)
5	16.00	20.67	20.00	18.67	27.25	0.63	(4,14)
6	21.63	14.20	23.00	22.33	27.71	2.19	(4,23)
7	11.00	16.60	20.75	18.25	26.20	1.06	(4,20)
8	15.50	12.00	21.11	30.50	44.50	6.010**	(4,6)
F	1.16	0.69	0.95	1.92	1.11		
(df)	(4,11)	(5,19)	(3,18)	(5,11)	(5,25)		

** $p < .01$

In the analysis by sex females showed a greater tendency to be affected by Stressful Events but conditional effects could not be considered significant for either male or female respondents (Tables 33 and 34)

TABLE 33

Female Mean Depression Scale Scores for Social Support by Numbers of Life Events (conditional effects)

Social Support Groups	Numbers of Events					F	p	(df)
	0	1	2	3	4+			
3 or fewer	17.80	21.33	59.00	6.00	54.67	11.68	.002**	4,12
4	31.00	18.75	27.25	27.60	30.14	0.64	.639	4,20
5	16.00	18.00	32.25	22.00	29.69	1.94	.129	4,36
6	18.67	22.67	20.50	27.33	32.40	2.45	.062	4,43
7	13.38	18.00	22.50	24.00	30.65	4.93	.002*	4,46
8	20.50	19.50	18.60	22.75	36.33	3.61	.018*	4,31
F	.98	.17	4.160	1.16	2.70			
p	.454	.372	.004*	.357	.031*			
(df)	5,20	5,33	5,47	5,19	5,50			

* $p < .05$

** $p < .01$

TABLE 34

Male Mean Depression Scale Scores for Social Support by Numbers of Life Events (conditional effects)

Social Support Groups	Numbers of Events					F	p	(df)
	0	1	2	3	4+			
3 or fewer	16.75	22.00	18.00	46.00	36.50	2.55	.147	4,10
4	31.00		12.00	21.75	9.00	2.17	.271	3,6
5	23.00	16.56	19.60	26.00	24.50	1.14	.359	4,29
6	21.10	13.83	18.00	23.75	28.00	3.18	.030*	4,30
7	13.86	17.56	18.00	17.29	26.42	2.29	.077	4,43
8	21.00	10.00	29.80	24.43	38.00	1.01	.425	4,25
F	0.47	0.31	1.68	2.39	1.77			
p	.793	.871	.156	.075	.153			
(df)	5,27	5,20	5,25	5,20	5,27			

* $p < .05$

There is no significant indication in the data that social support has a conditional effect on the level of depressive symptoms. There was however, a noticable non significant trend in the data for depressive symptoms to increase when social support is reported at the lowest and highest levels.

INTERACTION EFFECTS

Social Support And Life Events - Interaction (Table 27).

This section of the analysis attempted to answer the question regarding the interactive effects of social support and life events upon depressive symptoms. That is, does the combination of social support and life events contribute to the prediction of the level of depressive symptoms? Is there a combined effect on the depressive symptom score different from the sum of their separate effects?

In order to measure this interactive effect two and three way ANOVA,s were conducted (Socioeconomic status score was included because of its recognised powerful influence, Bell et al., 1982). No statistically significant two way nor three way interactions occurred. The two-way ANOVA provided some additional explanatory evidence for direct main effects of stressful events and a weak effect of social support on depressive symptoms (Table 27, p.86).

THE INFLUENCE OF THE VARIABLES. (Figure 1, Tables 35 and 36)

A series of regressions were used to demonstrate the influence of the sociodemographic variables. Figure 1 shows the result of stepwise regression analysis presenting the proportion of variance explained.

Demographic Location

The division into population sub samples of Rural, Town and City, did not reveal a source of significant variability. The regression analysis indicated that only .6% of the variance was explained by this variable. (Table 35).

Neither did ANOVA show any significant difference between Rural Town and City mean measures for depressive symtoms, (Table 4 p.60) but significant differences within the Town data indicate the need for further research (Table 5 p.61).

Social Support

Three series of regressions (stepwise, backward and forced entry) were used in an effort to identify every influence of social support, (a variable of particular interest), upon the dependent variable. All failed to substantially improve the minimal .74% explained variance attributable to social support (graphically seen in Figure I).

Stressful Life events.

The stepwise regression analysis (Figure I: Table 35) showed that stressful life events made the largest contribution (13%) toward the variation in the depression scale score.

Age

The second most influential variable was age (3.81%).

Socioeconomic Status

Socioeconomic Status was also significant (1.62%).

Sex

Sex was not significant (.6%).

Race

Race was the least influential of all the variables, it was not significant and was dropped from the analysis (<0001%) (Figure 1; Table 35).

TABLE 35

Results of Regression Analysis of Depressive Symptom Scores. (N=343)

Variable	Per cent Variance
Stressful Events	13.0%**
Age	4.2%**
Socioeconomic Status	1.6%**
Social Support	.7%
Sex	.6%
Location of Community	.6%
Race	-

** = $p < .01$

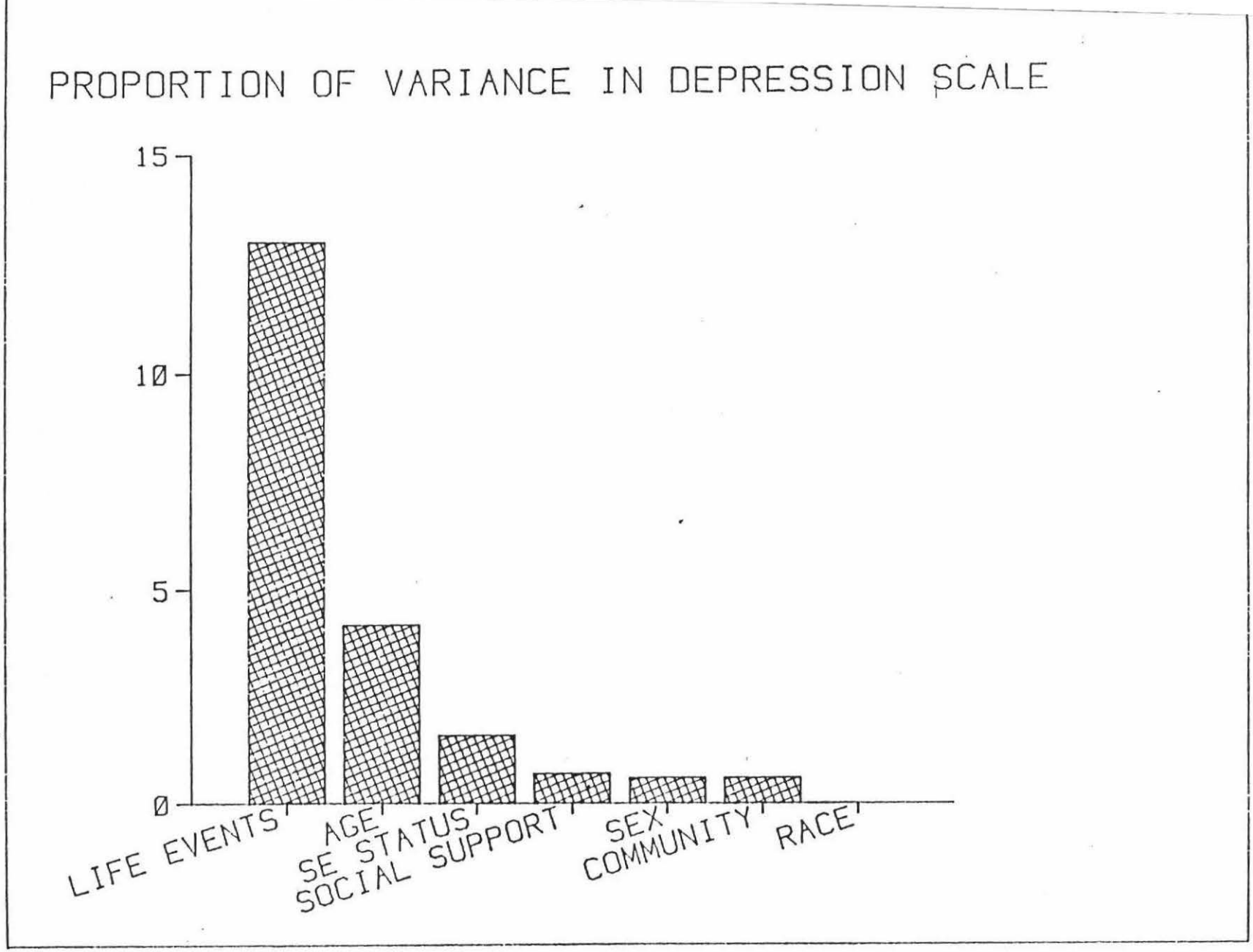

Figure 1. Proportion of variance in the Depression Scale Score attributed to Stressful Life Events, Age, Socioeconomic Status, Social Support, Sex, Geographic Location of Community and Race.

Intercorrelation

The intercorrelation between Stressful Life Events, Social Support, Depression and Socioeconomic Status is shown in Table 36. There is a significant relationship between Stressful Life Events and both Depression scores and Socioeconomic Status and between Socioeconomic Status and Depression but a weak relationship between social Support and Depression Scores.

TABLE 36

Means, Standard Deviations and Intercorrelations Between Stressful Life Events, Socioeconomic Status, Social Support and Depression Score (N=343)

	Means	SD	SES	SS	Dep.
Stressful Life Events (SLE)	2.45	1.98	-.14**	-.05	.36***
Socioeconomic Status (SES)	3.00	0.56		.06	-.20***
Social Support (SS)	5.99	1.55			-.10*
Depression (Dep.)	23.42	12.13			

* = $p < .05$

** = $p < .01$

*** = $p < .001$

SUMMARY

There was no significant difference between Rural Town and City for numbers of Stressful Events, Social Support or Depressive Symptoms but sociodemographic differences within the Town data were significant. There were strong direct effects of Stressful Events upon Depressive Symptoms but very weak direct effects of Social Support. There were conditional effects of Stressful Events, as the number of Events increased so also did the Depression score, the effects however appeared to be of the additive variety. There was no statistically significant evidence of conditional effects for Social Support. No interactive effects showed in the analyses.

Only 20.77% of the total variance in the Depression Score was accounted for, and only three variables were significant. Stressful Events 13%, Age 4.21% Socioeconomic Status 1.62%. Social Support (.74%) Sex (.6%) Community Location (.6%) and Race (<.001%) were not significant.

The analysis for the New Zealand population sample, while not conforming to the findings of Bell and colleagues (1982) (Appendix E) showed consistency with many other studies in the literature.

The study indicated that stressful life events have both direct and contingent effects on depressive symptom scores but that their effect is most likely of the additive variety (Williams et al., 1981).

The data provided unexpected evidence that social support has few beneficial effects on depressive symptom scores. There were, however non significant indications that both high or low levels of support tended to be associated with higher depressive symptom scores. Although there was no significant difference between the mean depression scores for Rural Town and City, the data indicated

significant differences within all the sociodemographic groups in the Town which were not evident in either Rural or City. This finding requires further investigation.

CHAPTER 8

DISCUSSION

It was proposed to examine in some detail relationships among stressful life events, social support and depressive symptoms.

It had been suggested by Bell et al., (1982) that an examination of living conditions may add to understanding of research results which report that social support has direct (Williams et al., 1981; Thoits, 1982), conditional (Bell et al., 1982; Frydman, 1981) or interactive (Pearlin et al., 1981) effects in reducing psychological impairment caused by stressful life events.

In this study an attempt was made to identify conditions of living which affect the impact of these variables and to identify which mode or models best fit New Zealand data.

The living conditions examined and compared were Rural, Country Town and City communities in central districts of North New Zealand. The same method and measuring instruments used by Bell and colleagues (1982) were employed so that using the combined data from the three communities comparisons could also be drawn with a South Eastern United States population.

DEPRESSION

Geographic Location

A previous study of rural versus urban mental health in New Zealand (Webb 1978) found no difference between the mean depression scores in Rural and Urban living conditions. The present study appeared to corroborate the finding. An examination of the sociodemographic

variables within each of the communities, however, has exposed differences not apparent in combined measures.

In the current study mean scores on the dependent variable (depressive symptoms) were not statistically different in the three communities, Rural (24.08), Town (24.08) and City (22.05). Further examination showed that although Rural and Town mean depressive scores were identical there were significant differences between sociodemographic groups within the Town population which were conspicuously absent in Rural and City population data.

Within the Town population only, there were significant differences on the depressive scale for sex, race, age and socioeconomic status groups, indicating that Town living conditions involve influences not operating in Rural and City. Further research needs to be undertaken to identify the significant factors underlying these results.

One speculation is that, in the migration from rural to urban living over generations, the transition through "Town" may be an unstable period.

There is less room for tolerating differences in Town than in Rural and City living. The social structure of the Town has tighter rules which emphasise a feeling of powerlessness especially in the alienated. Durkheim drew attention to the "anomie" resulting from anxiety caused by disparity between goals and means within a social group. (Durkheim, 1951; Ransford, 1968). The close proximity of people of different life styles in a country Town may arouse dissatisfaction in some who aspire to unrealistic goals. Personal space in the Rural setting allows more flexibility for tolerating different life styles and in City living individuals have sufficient choice and freedom to associate with those with congenial life styles.

Race

The finding of significantly higher mean depression scores for Maori ethnic groups in the Town data but not in the City was contrary to an often advocated view that City Maori people should return to the smaller centres.

The finding of comparative equality in the distribution of depressive symptoms between European and Maori groups in Rural and City data which is not popularly expected could be the result of controlling for the socioeconomic-status variable in the study. Other studies (Wheaton, 1982; Wartheit et al., 1982; Newcomb et al., 1981; Roberts and Vernon, 1984) which have reported that being a member of a minority ethnic group does not per se result in depressive impairment have also controlled for socioeconomic status. A regression analysis indicated that there was no significant difference for race in the combined population samples but some differences for status were present. (Table 35)

New Zealand official health statistics differentiate between Maori and non-Maori representation in psychiatric hospitals. The figures show a rate of 156.6 per 100,000 for Maori as opposed to 141.6 per 100,000 for New Zealanders of European ethnicity (Mental Health Data 1979).

The Ritchies have reported that more Maori mothers had higher scores on a neurotic scale than mothers of European ethnic origin, (Ritchie and Ritchie 1970). Another study finding racial differences for depressive symptoms is the Social Indicators Survey (1980-1981) where significant differences were found between women of European and Maori ethnicity for headaches, (29.29 : 41.78) irritability (30.00 : 39.16)

and feeling depressed (17.31 : 27.03). Maori women were more impaired (Haines 1983).

Studies such as these, reporting differences for racial levels of depressive symptoms have often confounded the variables with socioeconomic status. In the present study this was not the case. Status was controlled for in each of the communities.

Sex

Official statistics of Hospital admissions for psychiatric problems are usually similar for males and females. A 1982 study (McDonald, Pearce, Salter and Smith, Figure 2) confirms this for New Zealand. Large sex differences for psychological impairment, however, are usually found in community surveys (Al-Issa, 1980; Gove and Tudor, 1973; Bebbington 1978; Reinken, Sparrow and Campbell, 1982; Kahn, Hornblow and Walshe', 1981; Social Indicators Survey (1980-1981).

There have been some suggestions that females are more likely to report symptoms than males (Weissman and Klerman, 1977; Phillips and Segal, 1969; Downey and Werry, 1978) but a Heylen poll has indicated that males are just as willing to report symptoms as females when approached in a Survey (Haines 1982).

Nathanson's (1975) hypothesis is that Women's assigned social roles are less satisfactory than those of males, consequently they have more symptoms.

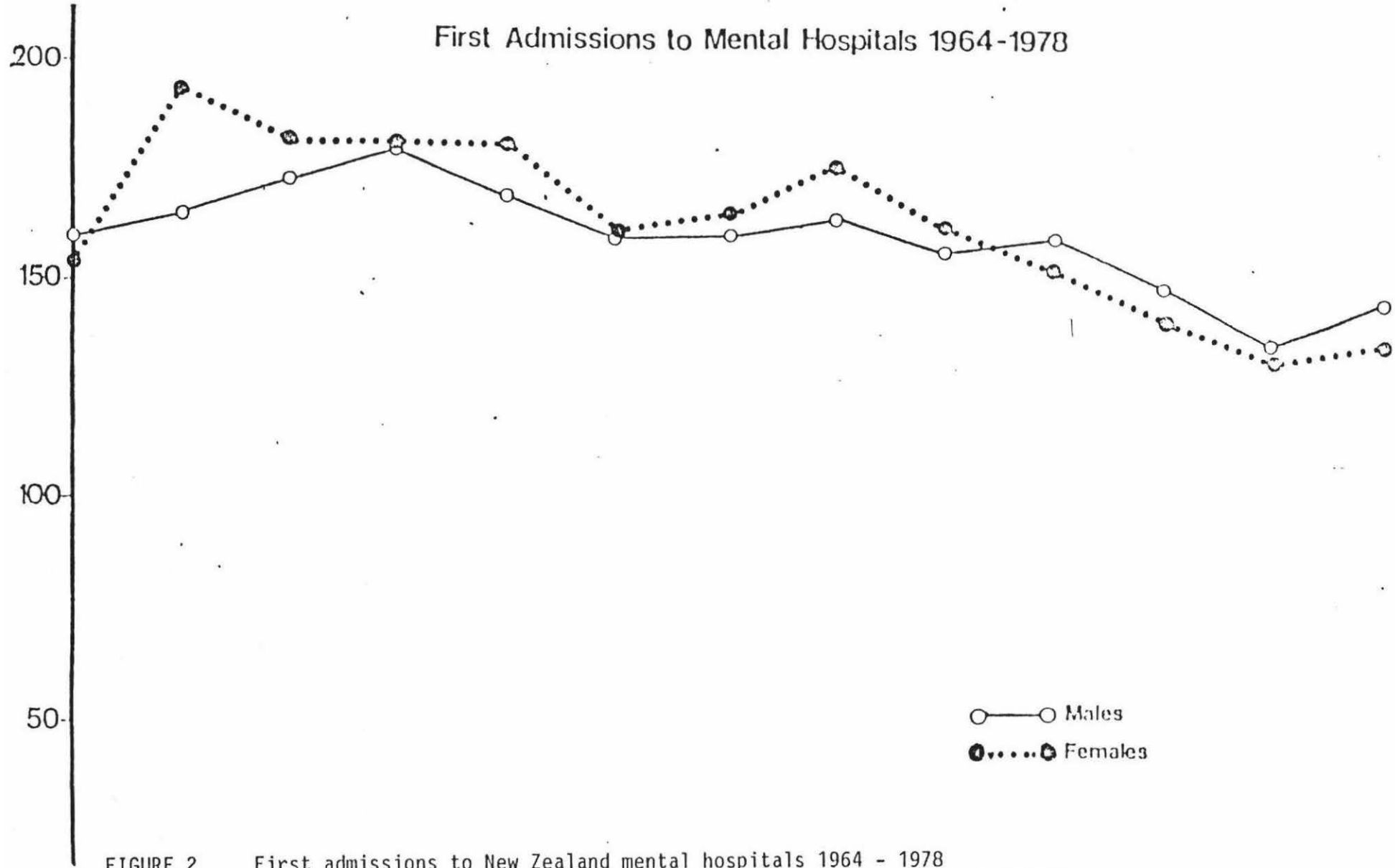

FIGURE 2 First admissions to New Zealand mental hospitals 1964 - 1978 rate per 100,000 population. McDonald, Pearce, Salter and Smith (1982).

The reason that this shows only in surveys is possibly because women "manage" their distress and report the impairment only when specifically asked in a survey. Wheaton's (1982) theory of innoculation to racial stress may apply to female stress also.

In the present study Town females, reported significantly higher depressive symptom scores than males. The "assigned roles" of females in the Rural and City communities appeared to be more satisfying as there was no significant difference for depression between males and females in those data. Perhaps there is a tendency for women in Towns to be in an inferior position compared with women in City or Rural.

Age

The tendency for the youngest age group to report highest depression scores is found in much modern research (Bell et al., 1982; The Social Indicators Survey 1980-1981; Bell et al., 1981; Dean and Ensel 1982). This trend was significantly corroborated in the Town data where the number of depressive symptoms was highest in the youngest age group (28.00, mean 24.08) gradually reducing as age increased to 60+ (17.59).

The Rural and City data were different. The Rural level of depressive symptoms was uniformly high through all age groups (Mean 24.08) with a dramatic decrease after 60 years. (14.37). There is some indication here that symptoms could be related to occupational stresses that do not operate after retirement. In the City, although the young reported the highest number of symptoms there was a trend for the over 60's to report increasing levels of impairment.

Generalizations are dangerous when numbers are small, but it may be suggested that elderly persons who leave their working environments and

move to the City when they retire appear to run more risk of impairment than those who remain integrated in their familiar communities. A psychotropic drug survey in Gisborne (N.Z.) showed pronounced age differences, the over 65 age group having the highest rate of prescribed drugs. Elderly women appeared to be a very distressed group in a City community. (Reinken et al., 1982).

Socioeconomic Status

It has been suggested by some authors (Rogers, 1979; Adler, 1969; Sullivan, 1949) that individuals estimate satisfaction with their living conditions in relation to comparison with others.

In a Rural community homes are widely separated and individuals are not so conscious of comparisons. Workers on the land of both Races and all Status groups dress in the same kind of bush shirts saddle-tweeds and heavy boots and all get equally dirty whether they be proprietor or cowman-gardener. In a shearing shed the rousy looks the same as the boss. There is sufficient commonality in their life styles governed by isolation and fluctuations in the weather for them to appreciate underlying realities in each others' situations. In the Rural community the lowest socioeconomic group had the lowest mean depression score.

In the City, people live in close proximity and especially so in Palmerston North, but suburbs are inclined to maintain their homogeneity and individuals live in ways relatively similar to their neighbours so far as they can observe on the level of their limited familiarity.

In a country Town there are no suburbs and differences in living styles are quite obvious because of the proximity of the homes.

Everyone knows everyone (and most of their business) and comparisons between the "haves" and "have nots" could be a source of dissatisfaction. There is a significant difference between the mean depressive symptom score of the lowest status group (39.45) and the highest status (20.46) in the Town.

It has been suggested (Christian 1985) that Rural disadvantaged persons "drift" to the Town to be nearer support services, which they usually find disappointingly inadequate in a small Town. Satisfactory support services abound in the City and frustration is therefore minimised.

Some of the services provided in Town deprive the towns-people of contributing to their own needs and a condition of ennui or helplessness (Seligman 1975) may result especially among the disadvantaged. The pressing Rural tasks of disposing of refuse, gathering fuel and attending to the water supply are all serviced in Town as in the City, but the Town does not have the wide range of leisure pursuits that are available in the City. The lowest Rural socioeconomic group had a comparable mean depression score (17.00) with the highest socioeconomic group in the City (16.89). The highest mean depression score was reported by the lowest status Town group (39.75).

The data seems to suggest that low status persons are least impaired in a Rural environment and most impaired in a small town. The discrepancy between the depressive scores of lowest status Rural and Town population samples confirms the suggestion that significant differences between the living conditions in the two communities exist. These disparities are all masked in an overall statistic. Bell et al., (1981) in an earlier study had found that the depression scores for Rural and Urban population samples were not statistically different so

they combined the data. The significance of the differences within population sub-samples needs to be studied using larger numbers and more sensitive measures. The Rural and City communities have shown a great homogeneity within each community for the sociodemographic variables examined, while the Town reported significant differences for Race Sex, Age and Socioeconomic Status.

United States Versus New Zealand Findings

It is difficult to account for the wide discrepancy between the New Zealand (Table 6, p.63) and United States (Appendix E, 1 p.180) mean depression scores as being related only to a difference in number of respondents. The consistent almost double mean scores could lead to an assumption that there was a discrepancy in the scoring methodology but this did not seem to be the case.

Bell reported an almost 10% non response rate in the United States survey but in the New Zealand study there were fewer than 1% who refused. Having regard to the nature of the dependent variable (depressive symptoms) it is probable that those in the Bell et al., (1982) study who declined to contribute were the most affected by depressive symptoms and whose higher scoring would have affected the means. Suitable comparative studies have been difficult to find.

Bassuk and colleagues (1983) published a study based on a comparison of United States and British populations. They found that the rate of serious psychopathology was similar, but that valid comparisons between the two countries for impairment due to stress and depression based on official statistics (hospital admissions), could not be made because of differences in the types of health care services available and differences in diagnostic criteria. New Zealand Mental Health systems

like other Government Departments are more similar to the British system than the American. In United States, community based help is commonly available (Bassuk et al., 1983; McGee, 1974; Rappaport, 1977) in contrast to social welfare hospital based systems in Britain and New Zealand.

The work of the American community based help systems has appeared to be significant. Comparing the number of State Hospital admissions in a geographical area for a period of eighteen months prior to the onset of the activity of a crisis intervention team with an equal amount of time following onset of the service it was found that there was a statistically significant decrease in the use of the State Hospital (Rappaport, 1977).

The magnitude of the discrepancy between the Bell et al., (1982) and the current study, however, can not be taken as a valid commentary on the health systems in the two countries. Allen (1977) reported that fewer than one third of mental illnesses caused by stress, such as depression, treated in the United States are admitted to hospital. Many of those not admitted to institutions eke out a wretched existance in fifth rate boarding houses and on park benches.

Knight, Waal-Manning and Spears (1983) compared the results of a New Zealand study using the Zung Self Rating Depression Scale (1965) with American published means. They found that a South Island small Town (Milton) population had significantly higher mean depression scale scores (33.65) than the American mean (26). This difference is not of the same magnitude as the difference between the Bell et al., (1982) results and the present study but it is significant. Some changes in the health care system, especially in small towns in New Zealand may bring many benefits. Webb and Collette (1978) found in a rural-urban

study in New Zealand that the rural community was prescribed more anti stress medications than urban communities which complicates findings and confirms how difficult is the interpretation of research in this most important area.

Another reason why European and American studies of Rural versus Urban communities are difficult to compare with New Zealand is the strong association of socioeconomic status with depression. In many countries Rural communities are impoverished, whereas in New Zealand they are comparatively prosperous (Webb 1978). Problems associated with comparisons of international statistics because of differences in Health Care Systems and diagnostic criteria which distort official figures (Haines 1982 ; Bassuk et al., 1983) have raised difficulties in comparing the replication of an American study in New Zealand.

There is a scarcity of New Zealand research with which to compare results and there is always difficulty in interpreting available information because of the theoretical and methodological problems associated with work in this field.

STRESSFUL LIFE EVENTS

Geographic Location

Frydman's (1981) comment that stressful life events are random and universal was apparently confirmed in the current study as there was no significant difference between the mean number of life events reported in Rural (2.44) Town (2.39) and City (2.51). Within the rural community there were no significant differences between sociodemographic groups which also confirms a random or universal distribution.

Low Socioeconomic status in the Town and Maori ethnicity in both Town and City however, predicted a higher number of stressful events. These environments appeared to have some differential effects which contra- indicate randomness and require further investigation.

New Zealand Versus United States Findings

In the current study stressful events accounted for more of the variance in the depression score (13%) than all the other variables combined. (Table 35, p.98) This is different from the findings of some other studies (Kobasa et al., 1981; Bell et al., 1982; Tausig 1982) where a much lower proportion of variance was accredited to stressful events. Of the 14.97% variance attributed to the same variables as studied in the current project, by Bell et al., (1982) in his project, only 3.64% was accounted for by stressful events. It may be reasonable to speculate, that a higher number of stressful events may explain the higher mean depression scores reported in New Zealand compared with the United States. There is a suggestion that many of the events may be culturally generated as the physical environment does not appear to be responsible for the discrepancy in scores.

Direct Effects

The current study supports the general hypothesis of much of the literature (Bell et al., 1982; Frydman, 1981; Kimball 1982; that stressful events make a contribution to depressive symptoms. The statistical analyses indicate that there is a direct relationship between stressful events and depressive symptoms.

Conditional Effects

In each of the three communities and for female data across all populations, as the mean number of stressful events increased so did the mean depression score, but there was no significant indication that the level of social support had any conditioning effects on the level of impairment as was reported in the United States study. There was no evidence in the New Zealand data that the increase was anything other than of an additive nature.

Interaction Effects

There were no interactive effects in any of the conditions for stressful events and social support upon depressive symptoms. A different approach is necessary to identify interactive effects if indeed they exist. The literature (Pearlin et al., 1981; La Rocco et al., 1980) has been more successful in identifying interactive effects between chronic stress and social support in their relationship with depressive symptoms, than for acute events.

Race

Although the Maori stressful event scores were higher in the City, their mean depression scores were not proportionately higher. It could be speculated that Wheaton's (1982) theory of innoculation may account for this. In the Bell et al., (1982) study Blacks reported more stressful events than Whites, as Maori respondents did in the New Zealand Town, also without reporting higher mean depression scores.

Kessler (1979) and Wheaton (1982) found disadvantaged groups less likely to develop extreme distress responses in the face of stressful circumstances. Decreased vulnerability of those of Maori ethnicity

recalls this finding and suggests that the effects of acclimatization may be at work. There is an analogy to the fact that immunity to the effects of certain biological disease agents may be greater in populations which are exposed to such agents at a higher rate. Greater exposure to noxious social conditions may also innoculate.

Sex

An increase in number of stressful life events indicated an increase in depressive symptoms for females rather than for males.

Females in New Zealand had a tendency to report more stressful events than males in the combined population but there was an unexpected tendency apparent for Maori males to report more stressful events than Maori females in Town and City. This may reflect frustration of Maori males to feel sufficiently "powerful" in those living conditions. This may have some association with the disproportionate number of Maori males at variance with the law. Gluckman (1976) has drawn attention to the importance of mana in Maori tradition. There may be some indication that the occupational conditions for Maori males in Town and City are less culturally suitable than those for Maori females, thus putting them under a greather number of stresses.

Age

In the New Zealand data there was a tendency for number of stressful events to increase in the period immediately before age 60 years. In the United States data the youngest age group reported the highest mean number of events which consistently reduced as age increased.

Why the tendency to report increased stress when approaching

retirement was evident in the three New Zealand communities and not apparent in the United States data is difficult to determine. Retirement may not mean such fear of dramatic loss of financial independence in the United States. Retired New Zealanders on fixed incomes complain of the inroads of inflationany trends, supertaxation and financial uncertainty. (Social Advisory Council 1984; Morgan, 1985; Evening Standard, 1985; Thessman, 1985; Tribune, 1985; National Business Review, 1985; New Zealand Herald, 1985). There may be a tendency to dread retirement in New Zealand, but then resignation when retirement actually occurs.

Socioeconomic Status

Status is another area where mean number of stressful events reported in New Zealand showed a trend different from that in the United States. In United States, lower socioeconomic status groups had a consistently higher mean number of stressful events with high status groups reporting the fewest.

This tendency existed only in the Town data in New Zealand. In Rural and City there was no significant difference between status groups. Some of the highest status individuals both Maori and European reported the highest numbers of stressful events.

SOCIAL SUPPORT

There was no significant difference for number of social supports in the three communities studied. Any effect of social support upon depressive symtom scores was very tenuous and analysis of the data showed few significant beneficial effects.

This disappointing result may partly be a function of the inadequacy

of the support measures used. The measures were structured to focus on aspects of the social network along which supportive resources are assumed to flow.

Structured measures are less likely to be confounded with psychological functioning than socio-emotional indicators but are less sensitive. Discrete, ordinal quantative measures as used in this study are easy to manage in research but may overlook subtle differences.

New Zealand Versus United States Findings

Bell et al., (1982) found significant direct and conditional effects for social support in relation to depressive symptoms. There was no confirmation for this in the New Zealand survey.

Direct Effects

Direct effects of social support did not reach significance in the sociodemiographic data and only a weak relationship was identified in the ANOVA of data for the combined communities.

Support when assessed retrospectively may appear to be spuriously unrelated to symptoms. While support deficits may predict symptoms, such symptoms may elicit behaviours from others that are perceived as support and when assessed simultaneously the different processes may cancel each other out. Rather than creating spurious effects (or Type I errors) the procedures may not be sensitive enough to the existing association (or Type II errors). This highlights the inadequacy inherent in the retrospective approach (McFarlane et al., 1984).

Conditional Effects

There was some evidence that extreme deprivation of social support

was associated with higher depressive symptom scores, especially for females but there was no significant pattern of decreasing depression scores with increasing levels of support.

It cannot be assumed from the data that the relationship between life events and depressive symptoms is ameliorated by the level of social support, or that the relationship of social support and depressive symptoms is changed by the differential impact of life events.

The results of the present study confirm the research of those who question the popular evaluation of the ameliorative effects of social support. (Williams et al., 1981; Donald and Ware 1984; Tausig, 1982; Thoits 1982, 1983; Wheaton 1982; Warheit et al., 1982).

While there was no significance presented which indicated that the level of social support had an influence on the mean depressive symptom score there was a non significant trend for the lowest and highest levels of support to be associated with higher depression scores.

In the literature, regardless of the research methodology there is a consistent association found between lack of social support and psychological impairment (Bell et al., 1982; McFarlane et al., 1984).

In the current study those with the fewest supports had the highest depression scores which tends to confirm the theory that lack of social support is in and of itself a cause of impairment irrespective of whether stressful events are involved. (McFarlane et al., 1984).

The non significant but consistent tendency in each of the communities for the highest levels of social support also to be associated with higher depressive symptom scores confirms results reported by Husaini et al., (1982) who found a tendency for males with high levels of social support to have higher depression scores.

Husaini attributed this to loss of self esteem which is so important to males, but this effect was also consistent for females in the current study. Research to find an optimal level of support may be indicated.

Interaction Effects

There was also no evidence of an interactive relationship between stressful events and social support in their effects on depressive symptoms. None of the interactions examined in this study despite the substantial power of the analyses approached statistical significance.

Interactive effects may be related to chronic stressors rather than to events and specific research approaching this differential may be appropriate. It was particularly with respect to occupational stress and health that both La Rococo (1980) and Pearlin et al., (1981) found evidence of interactive effects.

Thoits (1983) does not find the interactive measurement of value in understanding the effects of the variables. She pointed out that if support reduces stress or if stress reduces support, or both, then the effect of the interaction of these two variables upon distress may be a spurious one.

Race

In 1962 Prange and Vitols predicted that differential rates of depression between races would diminish as a result of social and cultural change. The results of the current study tend to reinforce that prediction.

The results reported here are counter to popular assumptions particularly as they relate to the comparative importance of the Maori extended family structure. The weight of evidence is that if there is

any advantage from belonging to an extended family the benefits appear to be cancelled by the extra stresses and pressures also involved.

Belonging to a tightly knit community, or cultural group can bring pressures to conform which deny freedom of choice and action. A "close" family can be mobilized for condemnation and ostracisation as well as for support.

Leavy (1983) has drawn attention to components of social support being affected by cultural orientation. Analyses of variance conducted for every one of the eight types of social support in the current study indicated no difference between the races. The measuring of different cultures with the same instrument may obscure cultural variations in the importance of different factors in social support.

A lack of relationship between social support and depressive symptom scores is confirmed by a comparison between the New Zealand and United States results. Although the New Zealand respondents reported the same number of social supports as the United States, they reported twice the number of stressful events and depressive symptoms.

The professionally oriented community support systems available in the United States health system may be recommended to New Zealand. In New Zealand this kind of help is scarce and is often treated with suspicion where it is available.

Sex

Thoits (1982) pointed out the importance of social integration for women. In the current study, belonging to a Church for females and to a Club for males were the only differences for the sexes. Both belonging to a Club and belonging to a Church are indications of social integration. In all the other types of support there were no

differences except that females had more tendency to depend on family for instrumental help.

In the analyses of variance conducted for each separate type of support by sex (even for the value of a confidante) the similarities were more remarkable than the differences.

Age

The only significant variation in the number of supports for any group was among the aged over 60 in the Town who reported fewer supportive relationships. The Town community consistently demonstrated less integration than Rural or City. There was a non significant tendency in all the communities for the 30-44 age group to report fewer social supports which confirms Goulds' observation that at this stage in family life parents are more isolated from the community and more dependent on each other's support (Gould, 1978; Sheehy, 1980; Vaillant, 1977; Levinson, 1978)

Some researchers see this stage of life as unstable almost resembling a second adolescence. Values are challenged and individuals wonder whether there is "time" to change. Levinson sees this as a time when parents are blamed for "unresolved personality problems" and individuals feel that it may be too late to make something of their lives. This age group is at a "crisis" period when many marriages end in divorce. Vaillant has pointed out that it often heralds a "new stage" in a person's life. The reporting of a perceived reduction in Social Support at this life stage, in this study, is consistent with these theories.

Life span studies of social support are not prominent in the literature. Most investigations are based on adults (Baltes, Reese and

Lipset, 1980; Beals and Antonucci, 1980; Leavy and Tolsdorf, 1979). A life span developmental perspective of support system changes and functions would assess the cohort effects that may explain age group differences.

Structure and substance of support systems are unlikely to be solidified at an early age remaining unchanged by life circumstances, they are rather in dynamic equilibrium with the social and developmental forces which impinge upon life. (McLanahan, Wedemeyer and Adelberg, 1981).

Socioeconomic Status

Unlike the United States study where low status was associated with low support and high status with higher support, the New Zealand data indicated that socio-economic status had no significant relationship with level of social support. This suggests confirmation of the egalitarian nature of the New Zealand society.

CONCLUSIONS AND SUGGESTIONS FOR FURTHER RESEARCH

1. The Model

The analysis focused on whether a direct, conditional or interactive model best explains the association between Stressful Life Events, Social Support and Depressive Symptoms.

Stressful events were found to have a direct additive effect on psychological symptoms. As the number of stressful events accrued the number of depressive symptoms increased. There was no evidence that the number of social supports had any significant effect on

this process.

The best model for explaining the results in the terms of this study is that Stressful Life Events have a direct negative effect on depressive symptoms and that Social Support has a weak positive direct effect at intermediate levels of support. There are indications of negative effects on psychological health where social support measures are at the minimum and maximum levels.

The finding that deprivation of support is conducive to impairment is common in the literature, not so often reported is the finding that maximum levels of support are associated with a rise in depressive symptoms. This tendency could be associated with the laws of control. When the power of decision making is removed a feeling of helplessness would reinforce depressive symptoms and increase psychological impairment (Rotter 1966; Seligman 1975).

This finding which has also been reported by at least one other study (Husaini et al., 1982) needs further investigation. Research to discover an optimal level of support for particular levels of stressful situations could contribute to a better understanding of the relationship between these three variables.

There was no evidence for conditional or interactive effects between social support and stressful events upon depressive symptom scores in the data of this study.

There is a danger that protracted debate about stress buffering versus independent effects of social support may distract the attention of researchers and clinicians from the importance of studying in a different way the effects of social support in its own right. As Williams et al., (1981) suggest the whole concept of

social support may need redefining in specific terms, and examining in new ways.

2. Geographic Location

No significant differences between the three communities Rural, Town and City were found in the overall measures of Stressful Events, Social Support and Depressive Symptoms but sociodemographic differences within the communities was a most important finding in the study.

Sociodemographic differences within the Town data were significantly dissimilar from Rural and City. Further research to reveal the reasons for the homogeneous distribution of Stressful Events and Depressive Symptoms in the Rural community and the differential distribution in the country Town may expose areas of concern for which ameliorative strategies could be employed. The wide discrepancy between the United States and New Zealand levels of Stressful Events and Depressive Symptoms suggests evidence for the importance of conditions of living. This is an area for investigation which may yield valuable information for town planning projects and national policies.

3. Strong Effects of Stressful Life Events

A comparison of the New Zealand data with the Bell et al., (1982) study gives further support to the evidence that number of stressful events has a greater effect on depressive symptoms than level of social support.

Both New Zealand and United States mean level of social supports were similar but the New Zealand number of stressful events reported was double, and so also, was the mean depression score. Added emphasis for the importance of stressful events can be noted in the proportion of the variance in the depression score accounted for by stressful events. In the United States data where number of stressful events were comparatively low, 3.64% of the explained variance (of 14.97%) was accounted for by Stressful Life Events. In the New Zealand data where number of stressful events were high, 13% of the explained variance (of 20.77%) was accounted for by stressful life events.

4. Weak Effect of Social Support

Bell et al., (1982) found an ameliorative relationship between social support and stressful events in its effect on depressive symptoms. In the current study no evidence was found for such a relationship in any of the three communities investigated or for racial or sex groups. It is very difficult to account for this discrepancy.

In Frydman's (1981) study, parents of chronically ill children benefited from social support but parents of terminally ill children did not.

The element of "hope" or "expectancy" may have been involved. Is it possible that there is an indication of hopelessness or lack of a perception of internal locus of control in the New Zealand society?

The face validity of social support is so widely accepted that investigators are disinclined to accept that research data does not always contain evidence for its importance and explanations for the apparent inconsistency between theory and empirical evidence continue to be sought.

Common experience seems to confirm that the support of those about us is helpful. What may have to be accepted is that however support is perceived to "help" or "comfort" it does not always have the effect of reducing psychological impairment which results from stressful events.

5. Race

In spite of the popular assumption that persons of Maori ethnic origin suffer greater distress in the community than those of European origin, the data was unequivocal that there was no difference for race. This is most probably accounted for by the design to control for socioeconomic status.

6. Age

Age was the second significant variable in the study. The most consistent tendency was for the 30 to 44 age group to report fewer Social Supports. The vulnerability of this group to feelings of alienation has been recognised in the literature and is an area where research can be expected to find some answers to social and family problems. These are the child rearing years and the mental health of parents is an issue of high importance to society for the

stable development of the young. There was a tendency in the data for the young to report higher distress.

7. Socioeconomic Status

The expected negative relationship of socioeconomic status with depressive symptoms that is found consistently in the literature was supported in the combined data. The Town made the strongest contribution to this. In the Rural data the lowest socioeconomic group reported the fewest depressive symptoms but generalizations cannot be made based on this result because of the small number of respondents. Further investigations with larger numbers would be valuable. Altering the structure of Town living may be difficult but if the significant aspects of rural living were identified some suitable strategies could be developed.

8. Measuring Instruments

There is a need for a more precise typology of social support and socially supportive behaviours. Improved measuring instruments are necessary. The Stressful Life Event Inventory and Depression Scale in the study had the benefit of scrutiny for reliability and validity but the Social Support scale consisted of items which "had been considered" in the literature as supportive resources. No established measure of Social Support has been developed. The present ad hoc measures of doubtful reliability and unknown validity detract from the empirical value of the research and generalizations are not in order. Many studies, including the

present one however, have value in pointing to areas where future research may be productive.

9. Need to Measure Other Variables

The variables studied accounted for only 20% of the variance in the depression score. This percentage suggests that other factors, for example, other types of psychopathology and or organic illnesses and their interactions with social and physiologic factors must be investigated extensively in order to draw definitive conclusions.

There seems little doubt that personality characteristics may impede or facilitate the effective use of support.

As the existence of psychological problems can lead to a decrement in the quality of either actual or perceived support, studies which incorporate individual vulnerability should be included.

10. More Finely Discriminating Theory Needed

It is not sufficient to know that some living conditions have a differential effect on life stresses and supportive resources. It is necessary to understand which factors in the environment are associated with which stressors and which supportive circumstances are optimum for coping with the effects. More longitudinal studies are needed for the identification of etiological factors. Retrospective studies such as the present investigation do not approach causal issues. Life event research has been vulnerable to

the criticism that cross-sectional studies have confounded the relationship of interest, and epidemologically, the diagnostic limitations of symptom check lists has been a serious deficiency in the current study. Issues of cause and effect are difficult to resolve in any analysis of non experimental data.

Perhaps, as Pearlin suggested it would be better to desist in the search for general stressors by social support interactions and develop a more finely discriminating theory which attempts to predict which social supports counteract or ameliorate the effects of which stressors when available at which point in time.

The understanding of the function of social support requires more than conceptualization and measurement. It requires researchers to address the problems to which the mediators are in response, and the particular junctures of the stress process at which they can intervene. (Pearlin et al., 1981) Although social relationships are at the very heart of social psychology, when judged against these considerations research on social support would appear to be still in the very early stages of its development.

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APPENDIX A

APPENDIX I

Affect—Mood

1. Do you feel in good spirits?
2. How often do you have crying spells or feel like it?
3. How often do you feel you don't enjoy things anymore?
4. How often do you feel alone and helpless?
5. How often do you feel that people don't care what happens to you?
6. How often do you feel that life is hopeless?

Body Complaints—Somatic

7. Do you tend to feel tired in the mornings?
8. Do you feel that you are bothered by all sorts of ailments in different parts of your body?

Psychological Patterns

9. Have you had periods of days or weeks when you can't take care of things because you couldn't get going?
10. Do you have any trouble getting to sleep and staying asleep?
11. How often do you have trouble with sleeping?
12. Do you ever have loss of appetite?

Negative Self-Evaluation (Cognition)

13. When things don't turn out, how often do you say you blame yourself?
14. How often do you think about suicide?
15. Has life changed so much in our modern world that people are powerless to control their lives?

Future Outlook

16. Do you sometimes wonder if anything is worthwhile anymore?
17. How often would you say that things don't turn out the way you want them to?
18. How does the future look to you?

APPENDIX II

STRESSFUL LIFE EVENTS INVENTORY

Rank	Event
1	Death of child
2	Death of spouse
3	Jail sentence
4	Death of close family member (parent, sibling)
5	Spouse unfaithful
6	Major financial difficulties (very heavy debts, bankruptcy)
7	Business failure
8	Fired
9	Miscarriage or stillbirth
10	Divorce
11	Marital separation due to argument
12	Court appearance for serious legal violation
13	Unwanted pregnancy
14	Hospitalization of family member (serious illness)
15	Unemployed for one month
16	Death of close friend
17	Demotion
18	Major personal physical illness (hospitalization or 1 month off work)
19	Begin extramarital affair
20	Loss of personally valuable object
21	Lawsuit
22	Academic failure (important exam or course)
23	Child married against respondent's wishes
24	Break engagement
25	Increased arguments with spouse
26	Increased arguments with resident family member
27	Increased arguments with fiance or steady date
28	Take a large loan (more than one-half of a year's earnings)
29	Son drafted
30	Arguments with boss or co-worker

SOCIAL SUPPORT MEASURE

(Bell et al, 1982)

empirically derive a scale which would be conceptually independent of SES and for which analyses could account for any variation in the depression scale independent of the SES factor. Consequently, we used the following items in the construction of a social support index:

1. Being married or if not married having a close relationship with a person of the opposite sex;
2. Having relatives nearby and feeling that relatives could be called upon for help;
3. Having relatives living far away who could be called upon for help;
4. Having friends nearby;
5. Having friends nearby who could be called upon to help with problems;
6. Having friends nearby with whom the respondent could talk about personal problems;
7. Attending church; and
8. Belonging to clubs and other organizations.

Respondents were given one point on the scale for each affirmative answer to the above questions. These items reflect both what we believe to be a condition of social support, as well as the important issue of an individual's *perceiving* that support and help is available in times of crisis.

APPENDIX B

GEOGRAPHIC LOCATIONS

RURAL TAIHAPE

Taihape rural district, situated on the southern edge of the central North Island volcanic plateau is part of the Rangitikei County.

A population sample was drawn among the 360 homes on 5 rural delivery routes within an average radius of 56 kilometres of Taihape post office. Some households are less than 1 km and others over 15 km apart.

Farmers, farm workers, shearers, contractors and their families are involved in hill country sheep and beef cattle production with deer and goat farming also prominent. Barley is grown where the terrain is suitable and wilderness sport ventures and river rafting are commercialised on enterprising high country properties.

The County population is 80.39% European, 16.30% New Zealand Maori.

APPENDIX B II

TAIHAPE BOROUGH

This central North Island hill country town, population 2,560 altitude 437m, services an extensive rural district, the main trunk railway, travellers on Highway 1 and Waiouru Military Camp.

It is the medical, commercial, transport, sporting and cultural centre of the Northern Rangitikei County.

The population New Zealand (Census 1981) is 74.01% European and 22.04% New Zealand Maori.

The town has a declining population (minus 8.4%, in the period 1976-1981).

In the 809 dwellings there is an average occupancy of 3.2 persons.

APPENDIX B III

PALMERSTON NORTH CITY

Palmerston North City (population 60,105) is the educational commercial, medical and cultural centre for eight inland low country farming counties in the north of Wellington Province. The population between 1976 and 1981 increased 3.8%.

This city on the principal transport routes between Taranaki and Hawkes Bay and Wellington has developed extensive processing and manufacturing industries. It is a University City providing professional courses which attract students from all over New Zealand.

There are 19,377 dwellings with occupancy rate 3.10. City policy of infill subdivision in the built up area has resulted in more than one house located on many sections and means that homes are in closer proximity in Palmerston North than in many other New Zealand cities. The population distribution New Zealand Census 1981 is approximately 82.26% European and 14.24% Maori ethnicity.

APPENDIX C

SUPPORT IN TIMES OF CRISIS

SURVEY IN THE TAIHAPE RURAL AND TOWN AREAS AND PALMERSTON NORTH CITY

Please put a tick in the box if it is true for you.

1. ☐ Do you belong to a club or other organisation?

2. ☐ Do you have relatives nearby and feel they could be called on if you felt that you needed help?

3. ☐ Do you have relatives far away who could be called upon for help?

4. ☐ Do you have friends nearby.

5. ☐ Do you have friends nearby who could be called upon to help with problems?

6. ☐ Do you have friends nearby with whom you could talk about personal problems?

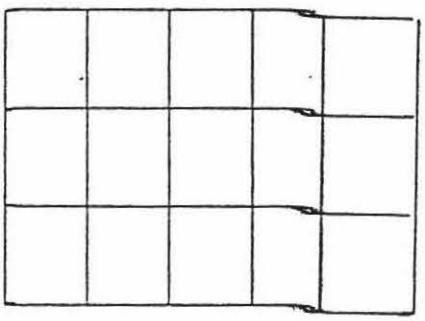
7. ☐ Do you attend church?

8. ☐ Do you have a stable relationship with a person of the other sex?

Thank you.

STRESSFUL LIFE EVENTS INVENTORY

PLEASE PLACE A TICK (✓) IN A BOX FOR EACH STRESSFUL EVENT IN THIS LIST, WHICH HAS HAPPENED TO YOU DURING THE LAST TWELVE MONTHS.



Death of a child

Death of a spouse

Death of a close family member

Spouse unfaithful

Major financial difficulties

Business failure

Loss of job

Miscarriage or stillbirth or abortion

Divorce

Marital separation due to an argument

Court appearance of family member

Unwanted pregnancy

Hospitalisation of family member (serious illness or accident)

Unemployed for one month

Death of a close friend

Major personal physical illness

Begin extramarital affair

Loss of personally valuable object (theft or fire)

Academic failure (important exam or course)

Child married against parent's wishes

A broken engagement

Taken out a large loan (more than ½ year's earnings).

Increased arguments with spouse

Increased arguments with resident family member

Moved house

Teenage son or daughter leaves home

Increased arguments with fiance or steady date

Arguments with boss or co-worker

Threat of prosecution

Other stressful event

PLEASE TICK (✓) THE BOX WHICH APPLIES TO YOU.

		Often	Some times	Occasion-ally	Rarely	Never
1.	Do you have a feeling of well-being?	☐	☐	☐	☐	☐
2.	How often do you have crying spells or feel like it?	☐	☐	☐	☐	☐
3.	How often do you feel you do not enjoy things anymore?	☐	☐	☐	☐	☐
4.	How often do you feel alone or helpless?	☐	☐	☐	☐	☐
5.	How often do you feel that people don't care what happens to you?	☐	☐	☐	☐	☐
6.	How often do you feel that life is hopeless?	☐	☐	☐	☐	☐
7.	Do you tend to feel tired in the mornings?	☐	☐	☐	☐	☐
8.	Do you feel that you are bothered by all sorts of ailments in different parts of your body?	☐	☐	☐	☐	☐
9.	Have you had periods of days or weeks when you have felt that you couldn't take care of things because you couldn't get going	☐	☐	☐	☐	☐
10.	Do you have any trouble getting to sleep or staying asleep	☐	☐	☐	☐	☐
11.	How often do you have trouble with sleeping?	☐	☐	☐	☐	☐
12.	Do you ever have loss of appetite?	☐	☐	☐	☐	☐
13.	When things don't turn out the way you hoped,how often do you blame yourself	☐	☐	☐	☐	☐
14.	How often do you think about suicide	☐	☐	☐	☐	☐
15.	Do you ever feel that life has changed so much in our modern world that people are powerless to control their lives?	☐	☐	☐	☐	☐
16.	Do you sometimes wonder if anything is worthwhile anymore?	☐	☐	☐	☐	☐
17.	How often would you say that things do not turn out the way you want them to.	☐	☐	☐	☐	☐
18.	Does your future seem uncertain to you?	☐	☐	☐	☐	☐

Thank you.

DEMOGRAPHIC

Sex Male ☐ Female ☐

Community Rural ☐ Town ☐ City ☐

Age in years

16-22	23-29	30-44	45-49	50-59	60+
☐	☐	☐	☐	☐	☐

Ethnicity European ☐ Maori ☐

Education

☐ Left school at 15 years

☐ School Certificate Exam

☐ University Entrance

☐ Tertiary (e.g. Tech)

☐ University Degree

Occupation

☐ Unskilled

☐ Semiskilled

☐ Skilled

☐ Technical

☐ Professional

Family income in thousands of dollars

☐ 0-9.999

☐ 10-19.999

☐ 20-29.999

☐ 30-39.999

☐ 40+

SES =

APPENDIX D

Calculation of Socioeconomic Status (SES) based on United States Bureau of Census (1960).

A Education

1 Left school at 15 years

2 School Certificate exam

3 University Entrance

4 Tertiary (e.g. Tech.)

5 University Degree

B Occupation

1 Unskilled

2 Semiskilled

3 Skilled

4 Technical

5 Professional

C Family Income in thousands of dollars

1 0- 9.999

2 10-19.999

3 20-29.999

4 30-39.999

5 40+

$$\frac{A+B+Cx\ 100}{15}$$

= percentage

Code

1: - 20

2: 21- 40

3: 41- 60

4: 61- 80

5: 81-100

= SES

Appendix E

TABLE 1

Depression Scale Scores By Sociodemographics

Sociodemographic Variables	N	Mean	S.D.	Significance
Total	2029	12.84	9.32	
Race-Sex				
White Male	745	10.68	8.15	ANOVA
White Female	1012	13.96	9.63	$F = 24.49$
Black Male	100	12.59	9.63	$df = 3,2013$
Black Female	160	15.83	10.35	$p < .001$
Age				
16–22	204	14.03	8.45	
23–29	245	12.47	8.65	ANOVA
30–44	444	12.69	9.32	$F = 3.10$
45–50	461	13.73	10.03	$df = 4,2024$
60+	671	12.09	9.25	$p < .01$
SES				
Low 0–19	320	16.77	11.77	
20–39	433	14.94	9.85	ANOVA
40–59	582	11.95	8.47	$F = 35.84$
60–79	469	10.96	7.60	$df = 4,2024$
High 80–99	225	9.40	6.55	$p < .001$

TABLE 2

Stressful Life Events By Sociodemographics (Within Last Year)

Sociodemographic Variables	N	Mean	S.D.	Significance
Total	2017	.97	1.02	
Race-Sex				
White Male	745	.99	1.03	ANOVA
White Female	1012	.90	.97	$F = 8.15$
Black Male	100	1.18	1.09	$df = 3,2013$
Black Female	160	1.28	1.12	$p < .001$
Age				
16–22	204	1.39	1.16	
23–29	245	1.18	1.12	ANOVA
30–44	444	1.04	1.06	$F = 20.80$
45–59	467	.98	.99	$df = 4,2020$
60+	671	.74	.86	$p < .001$
SES				
Low 0–19	320	1.09	1.04	
20–39	433	1.04	1.09	ANOVA
40–59	582	.94	.99	$F = 21.83$
60–79	469	.93	1.02	$df = 4,1980$
High 80–99	225	.88	.91	$p < .001$

TABLE 3

Social Support Scale Scores By Sociodemographics

Sociodemographic Variables	N	Mean	S.D.	Significance
Total	1973	5.47	1.64	
Race-Sex				
White Male	734	5.44	1.61	ANOVA
White Female	987	5.44	1.67	$F = 1.88$
Black Male	98	5.68	1.39	$df = 3,1969$
Black Female	154	5.71	1.69	N.S.
Age				
16–22	201	5.46	1.66	
23–29	241	5.41	1.62	ANOVA
30–44	437	5.53	1.71	$F = 2.01$
45–59	451	5.61	1.58	$df = 4,1976$
60+	651	5.47	1.63	N.S.
SES				
Low 0–19	314	4.84	1.58	
20–39	424	5.34	1.59	ANOVA
40–59	572	5.51	1.72	$F = 21.83$
60–79	454	5.69	1.59	$df = 4,1980$
High 80–99	221	6.03	1.41	$p < .001$

TABLE 4

Life Events and Mean Depression Scale Scores

Number of Life Events	N	Mean	S.D.	Significance
Total	2029	12.84	9.32	
0–Events	846	11.14	8.51	
1–Event	621	12.11	8.52	ANOVA
2–Events	326	14.85	9.71	$F = 36.19$
3–Events	148	16.32	10.93	$df = 4,2024$
4 or More Events	88	20.99	10.68	$p < .001$

TABLE 5

Social Support and Mean Depression Scale Scores

Social Support Groups	N	Mean	S.D.	Significance
Total	1985	12.81	9.31	
Group				
Low 1	123	19.46	11.80	
2	131	14.38	10.66	ANOVA
3	225	14.95	9.61	$F = 20.25$
4	416	12.95	9.06	$df = 6,1978$
5	517	12.08	8.83	$p < .001$
6	412	11.28	8.44	
High 7	161	9.37	6.11	

TABLE 6

Mean Depression Scale Scores for Social Support Groups By Numbers of Life Events

Social Support Group	Numbers of Life Events 0	1	2	3	4+	*F* (*df*)
1	16.63	16.18	25.33	22.60	26.85	4.29** (4,118)
2	11.82	12.03	20.33	15.50	25.00	5.56*** (4,126)
3	13.88	14.54	14.88	16.66	19.88	1.60 (4,220)
4	10.68	14.13	14.16	15.55	21.84	7.89*** (4,411)
5	10.41	11.54	14.26	17.29	17.15	8.27*** (4,512)
6	10.76	9.78	12.53	14.76	18.00	5.64*** (4,407)
7	8.33	8.91	11.36	11.66	17.75	3.58** (4,156)
F	6.60***	6.94***	5.70***	1.28	1.51	
(*df*)	(6,818)	(6,604)	(6,311)	(6,138)	(6,79)	

Note.—**p <.01; ***p <.001.

TABLE 7

Three-Way ANOVA with Depression By Stressful Life Events (SLE), Social Support (SS) and Socioeconomic Status (SES)

Variation	Sum of Squares	*df*	Mean Square	*F*	Significance
Main Effects	17770.12	9	1974.46	24.76	p <.001
SLE	5458.04	3	1819.35	22.81	p <.001
SES	6072.53	4	1518.13	19.04	p <.001
SS	2391.48	2	1195.74	14.99	p <.001
Interactions (2)	1916.23	26	73.70	0.92	N.S.
SLE × SES	981.53	12	81.79	1.03	N.S.
SLE × SS	396.34	6	66.06	0.83	N.S.
SES × SS	559.88	8	69.99	0.88	N.S.
Interaction (3)	1496.43	24	62.35	0.78	N.S.
SLE × SES × SS	1496.43	24	62.35	0.78	N.S.
Explained	21182.81	59	359.03	4.50	p <.001
Residual	87728.75	1100	79.75		
Total	108911.56	1159	93.97		