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Chyi-in Wu

Iowa State University

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Theoretical perspectives on age and gender differences in mental health: An empirical test of Taiwan

Wu, Chyi-in, Ph.D.

Iowa State University, 1993

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Theoretical perspectives on age and gender differences in mental health: An empirical test of Taiwan

by

Chyi-in Wu

A Dissertation Submitted to the Graduate Faculty in Partial Fulfillment of the Requirements for the Degree of
DOCTOR OF PHILOSOPHY

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CHAPTER 1
INTRODUCTION

For a long time aging was considered to be mainly a biological process that was universal, inevitable, and irreversible. The process begins at birth and is characterized by twenty or more years of growth, followed by a plateau or decline in the size and efficiency of the organism. This decline is evident in external signs such as skin wrinkles, change in hair color, loss of hair, and, more subtly, through internal changes such as a decline in vision, hearing, energy reserves, strength, and reaction time (McPherson, 1983). Weiss (1981) posits that aging is a process somehow genetically programmed into the human animal, and that a physiological maximum of somewhere between 90 and 100 years represents the limits on human life except in quite unusual cases. In the later part of this life course, certain processes of physiological deterioration are inevitable, so that people in the final decades of the course are almost sure to experience certain kinds of physical and mental disabilities.

Recognizing that aging is not only a biological process, social scientists have sought to understand how sociocultural and environmental factors interact to influence individual and population aging (McPherson, 1983). Basically, aging is viewed as a social process characterized by health, economic, and social adjustments that occur when the individual interacts within an age structure made up of numerous age strata. Aged people must adjust to conditions that are not generally characteristic of other stages of the life course, namely, the increased probability of illness and impending death. The changes experienced by the aged often include (1) retirement from full-time employment, (2) withdrawal from active community and organizational leadership, (3) breaking up of marriage through the death of one's mate, (4) loss of an independent household, (5) loss of interest in distant goals and
plans, (6) acceptance of dependence upon others for support or advice and management of funds, (7) acceptance of a subordinate position to adult offspring, (8) taking up of membership in groups made up largely of old people, and (9) acceptance of planning in terms of immediate goals (Phillips, 1957).

As we have seen, aging involves physical, psychological, and social change and adaptation throughout the life course. These structural and behavioral changes and adaptations over the years within and between individuals and cohorts constitute the process of aging. Although the aging process is still not fully understood, there are some common agreements that it is inevitable, irreversible, and complex; that individuals and age cohorts experience different types and rates of aging; and that genetic, physical, psychological, environmental, and social factors are directly and indirectly involved.

Numerous studies have been conducted to understand systematically how social, psychological, and cultural factors influence people's health as they age. Perhaps the most established association with health has been that of chronological age (Markides, 1989). It has been commonly assumed that aging is accompanied by a fairly progressive, although variable, deterioration of physical and mental health. The relationship among aging, life events, and health is one of the more interesting and complex areas in social gerontology. Typical assumptions are that health (both physical and mental) worsens with age, and that some of the individual differences in this rate of decline are a function of ongoing life events. Much of the theory and research on aging and physical or mental health follows what has been called a "social stress" paradigm. Aging is seen as being accompanied by a number of "role transitions" that are stressful for the individual and, in some cases, for significant others. The cumulative effect of these transitions, role losses, and other life events is a negative effect on the health of people as they grow old (Markides and Cooper, 1989). In brief, a gradual
decline in physical and mental functioning, and diminished ability to cope with problems take their toll as people age. Combined with decreases in social resources and support, these stressors contribute to increases in health and mental health symptoms. These concerns have led to a growing interest in social gerontology regarding the physical and psychological well-being of the elderly.

Statement of the Problem

The assumption that aging is linked with an enhanced hazard of declines in psychological well-being is a recurring issue in the literature of mental health and gerontology (Butler and Lewis, 1982; Klerman, 1983; Newmann, 1989; Stenback, 1980). An abundance of studies have explored the intercorrelation between aging and mental health (Cutrona, Russell, and Rose, 1986; Dean and Ensel, 1983; Feinson, 1987; Gove, Ortega, and Style, 1989; Kennedy et al., 1989; Krause, 1986a; Newmann, Engel and Jensen, 1990, 1991b; Norris and Murrell, 1984; Phifer and Murrell, 1986). Although this correlation is noted by many social gerontologists, and is the base for claims and calls to action in the U. S. government reports, empirical findings do not provide consistent or strong support for the hypothesis that psychological well-being declines with increasing age (Gurland, 1976; Newmann, 1989). There is considerable disagreement concerning the positive or negative association between aging and mental health, or, more specifically, psychological well-being. Generally speaking, there are two somewhat contrasting perspectives regarding the theoretical processes that account for the correlations between these two factors.

Probably the most well-known perspective is the role theory of aging. Sociologists regard aging primarily as a process involving role acquisition and role loss. Basically, the sociological interpretation of aging may be viewed as the application of role theory to the issue
of aging among adults (Bush and Simmons, 1981; Dannefer, 1984; Dion, 1985; Gove, Ortega, and Style, 1989). From the role perspective, there are at least three reasons to predict that one's psychological well-being is more likely to be positive in early adulthood and to decline with age. In general, aging is initially affiliated with role acquisition, then with role transitions, and then with role loss. Bush and Simmons (1981) noted that role acquisition seems to be a positive experience, role transition to reflect some strain, and role loss to be normally problematic. In addition, the U. S. is usually regarded as a youth-oriented culture which places a high value on the characteristics of the young and devalues attributes of older persons. Finally, in a rapidly changing society, it would appear that older people would have trouble keeping pace with social changes and would find themselves functioning less and less effectively.

A dramatically different point of view is presented by theorists committed to an adult psychological maturation perspective (Baltes, Dittmann-Kohli, and Dixon, 1984; Clayton, 1982; Erikson, 1982; Gove, Ortega, and Style, 1989; Ryff, 1985; Ryff and Heincke, 1983; Schaie, 1983). The concept that there is a process of adult psychological maturation is derived from theories of development descended from Freud's theory of psychosexual development (Gove et al., 1989). Neugarten (1977b), Levinson (1978), Gould (1978), and others indicated that early and middle adulthood is associated with a concern with self and is characterized by a focus on activity, achievement, power, and control. In contrast, when people get older they have fewer ego concerns and are more reflective, contemplative, and accepting of others. In brief, the image of age derived from the adult maturational perspective implies that aging is a positive process. From this point of view, one does not anticipate a decline in psychological well-being with age or an increase in negative feeling about life. On the contrary, if a change does occur, it would be in the positive direction.
The analysis of this relationship is complicated by the fact that there are important psychological differences between males and females and that these gender differences interact with the aging process. Verbrugge (1988) indicated that some critical facets of females' lives increase their morbidity hazards relative to males, for example, higher levels of emotional stress and stronger feelings of vulnerability to illness. Women are more likely to be diagnosed with depression, and younger women are more vulnerable to depression than older women. However, older men are more likely than younger men or older women to commit suicide (Cleary, 1987). Overall, gender differences in mental health are more evident in earlier adult years than in later life (Feinson, 1987; Huyck, 1990). Although many researchers suggest that it is important to consider gender differences in aging, the relationships between gender and mental health and changes in later life still remain controversial.

Numerous studies have endeavored to identify the sources of psychological well-being and determine the role of social elements as either mediators or moderators in the changing process. Much of the epidemiologic research on mental health has focused on the role that age-related life experiences play in the change of mental health (Newmann, Engel, and Jensen, 1991a; Cutrona, Russell, and Rose, 1986; Dean and Ensel, 1983; Kennedy et al., 1989; Krause, 1986b, 1987). These studies attempt to clarify the types of life settings most crucially implicated in the change of psychological well-being among people, as well as the conditions that heighten vulnerability to change in response to such situations. Studies of the change process have generated varied results regarding 1) the role of discrete life-events versus ongoing sources of strain as antecedents of changing psychological well-being; 2) the manifestation of mental health either through psychological symptoms or subjective well-being; 3) the significance of nonhealth factors in interpreting psychosomatic or other health-related symptoms of mental health (Arling, 1987).
There are two competing approaches to try to model the change trajectory of mental health over time, the traditional life-events approach and the life-strain approach advocated by Pearlin et al. (1981). Although the findings of empirical research are not uniform, most of them do show there are some age and gender differences (Blazer, 1980; Chiriboga and Cutler, 1980; Folkman et al., 1987; Krause, 1986b; Lazarus and DeLongis, 1983). Two vying perspectives, the differential-exposure explanation and the differential-vulnerability explanation, are called upon as potential explanations for age and gender differences.

In addition to these concerns with the intercorrelation between life experience and mental health, there is increasing conviction that it is not the stressful life events per se, but how people cope with them, that affects psychological well-being (Folkman et al., 1987). A relation between coping and psychological well-being has been found in a number of studies (Folkman et al., 1986; Pearlin and Schooler, 1978; Vitaliano et al., 1985). Lieberman and Tobin (1983) reported that the ways the people coped with stressful life events made a huge difference in mental health. A number of studies examining the association between coping behavior and mental health have found that gender differences interact with the process since men and women have different trajectories over the life course which differentiate their coping strategies (Gutmann, 1974; Lowenthal, Thurnher, and Chiriboga, 1975).

In summary, research on age-related patterns of mental health have been quite diverse. A number of theoretical perspectives have been used to attempt to explain age-related distributions and patterns over time. There has been little effort toward an integration or coordination of these efforts. This tendency has resulted in a situation where far less attention has been paid to the interpretation and integration of these diverse findings in order to arrive at a more comprehensive and systematic understanding of the intercorrelations among life-experience, coping behavior, and mental health and their interactions with gender and age.
Objectives of the Study

Despite the fact that the knowledge about the psychological and social processes associated with growing old has greatly increased, especially in the last two decades, and despite the surge of studies in the field, research on the mental health problems of aging remains largely diffuse and uncoordinated. The present study will apply cross-culture data to investigate the issues mentioned earlier. Thus, the purposes of this study are: first, to try to disentangle these theoretical puzzles about the associations among age, gender, and mental health; second, to identify social factors which might mediate or moderate the associations through the cross-cultural perspective; and, third, to attempt to integrate these diverse perspectives of aging and mental health into a more extensive and systematic theory which can be generalized in interpreting the complexity of age, gender, and mental health cross-culturally.

Significance of the Study

Neugarten and Bengtson (1968) argued that cross-cultural studies are a necessary corrective to the cultural blindspots of theory builders, that they pay off in greater generality of findings and in greater richness of conceptions. This research provides a means for developing hypotheses and for identifying powerful variables whose effects can be rigorously tested in single cultures, or in those controlled settings where these same variables could not have been initially identified. Cross-cultural, comparative studies help to generate explanatory frameworks which illuminate previously unobserved regularities and relationships at the local level. The cross-cultural approach is particularly important in establishing a developmental perspective of aging: such studies vary, and thus control for extrinsic contributions to the aging process and any residual transcultural regularities can be logically referred to intrinsic,
or developmental forces. Thus, the developmental armatures of aging process, if these exist, can be identified through studies of aging populations across disparate cultural settings.

Since the theories, hypotheses, and findings which deal with the issues of aging and mental health are almost all based on the studies of American society, it is important to determine if these relationships generalize to other cultures. In addition, using cross-cultural or cross-national comparison enables researchers to shed light on important questions in social gerontology: persistence and change in adult development; the universality and adaptive value of disengagement; the impact of social-cultural factors on individual adaptation to becoming aged; the religiosity of later life etc.. Of course, this effort will not end controversy on these issues, but hopefully it will underline the value of the cross-cultural approach by bringing some new perspectives to these debates.

The other consideration of using cross-cultural data in this study is substantial and practical. By 1995, the population in Taiwan of sixty-five years old and over will approach two million, which is 8.5% of the total population in Taiwan. In other words, Taiwan as a newly emerging industrialized country will become an "aged country" by the end of the twentieth century. Taiwan has experienced vast and rapid technological, cultural, and social change over the last four decades. Taiwan has changed from a rural, agricultural nation to one in which industrial advance influences nearly every aspect of life. Small communities ordered by family ties and personal relationships have given away to a mass society bound by a rather highly developed economy. This trend has been correlated with increased reliance on a bureaucratic, administrative network which organizes social action and provides services in a rational, formal setting. In brief, Taiwan, once guided by traditional values and beliefs, has been transformed by the social process of modernization. Because of this transition, many age-related issues are still left unknown or unexplored. For example, did the people in
Taiwan age "successfully?" Does the aging process follow the same pattern that the American society has experienced? The primary focus of the present study is to identify which theory or theories best describe the age- and gender-related patterns of mental health in Taiwan. This study may help to address some important age- and gender-related mental health issues which are essential and need to be explored in Taiwan.

An Overview

This dissertation is divided into six chapters, each reflecting a step in the research process. Chapter 2 reviews and outlines the previous findings and theories which deal with the issues of age, gender, and mental health. It provides the theoretical background which is the base of this study. Literature from both sociological and psychological perspectives is discussed in detail. The controversial points from both sides are highlighted. Based on the discussion presented in Chapter 2, Chapter 3 blueprints three hypothesized models which represent the identified perspectives. The significance of each theoretical path argued in these models is addressed and tested in Chapter 5. Chapter 4 outlines the procedures of the study which includes the strategy and methods employed in data collection and analysis. It contains descriptions of the sampling procedure and the sample characteristics, and operational measures of concepts. The empirical data analysis is presented in Chapter 5. Hypotheses derived in Chapter 3 are tested using cross-cultural data collected in Taiwan in 1990. The primary methods of analysis are SEM (Structural Equation Model), and ANOVA (Analysis of Variance) with MCA (Multiple Classification Analysis). Model comparisons are presented, to examine the significance of any differences in patterns of coping mechanism and health behaviors across age or gender groups. The last chapter provides a discussion on the empirical findings and a summary, with discussion of implications.
CHAPTER 2
LITERATURE REVIEW

With the medical advances on most of the lethal, acute diseases of childhood during the first half of the twentieth century, increasing proportions of successive birth cohorts are surviving to old age. Modern societies have been experiencing a virtual revolution in aging (Abeles and Riley, 1987; Torrey, Kinsella, and Tauber, 1987). An appreciation of this "revolution in aging"—increasing longevity and an increasing population of older people—has stimulated increases in multidisciplinary studies of aging. Research on aging, gender, and mental health requires an understanding of some of the basic principles of aging and its related social processes. A substantial body of research has demonstrated how social and behavioral factors, interacting with biological factors, influence health and functioning in the middle and later years. Riley and her colleagues (Abeles, 1987; Abeles and Riley, 1976-1977; Ory, 1988; Ory and Bond, 1989; Riley, 1985; Riley and Bond, 1983; Riley, Foner, and Waring, 1988; Riley, Matarazzo, and Baum, 1987) have postulated several related principles as a guide for analyzing and designing research on aging. The first guiding principle for research on aging is that aging is multifaceted, consisting of social and psychological as well as biological processes. Second, aging is not entirely fixed for all time, but varies with social structure and social change. Third, as a corollary, because aging is not a constant process, it is subject to a degree of social and behavior modification and intervention (Riley, 1987).

Ory, Abeles, and Lipman (1992) argued that aging is best understood within a lifecourse perspective. Since persons do not suddenly become old at age 65; aging reflects an accumulation of a lifetime of interacting social, behavioral, and biomedical processes. A social stress paradigm has also been prominent in social, behavioral, and epidemiological
research on health in the general population. Recent literature in these fields has paid particular attention to the role of social support in moderating or "buffering" the negative influence of stressful experiences on physical and mental health. The related concepts of social support, "social networks," "social integration," or "social connectedness" are rapidly achieving prominence in psychosocial approaches to health and illness. A related literature has focused on how personality factors modify the influence of stress on health. All this literature is currently beginning to be applied to older people, and a gradual fusing of this approach with those of social gerontologists and other social scientists interested in lifecourse transitions has emerged.

Age, Gender, and Mental Health

Both sex and age are fundamentally biological, but they become densely social—as gender and aging—as a person lives. Becoming a child, a youth, and then an adult is a social process past through biological age. Whether overtly or covertly, gender and age are involved in role training and rewards, the formation and maintenance of close social ties, productive activities at home and elsewhere, and encounters with health risks and their physical and mental outcomes. They are never really separable in social life. It is a person's age-gender category, not just age and not just gender, that inspires particular social attitudes and confers certain demands. Together, these two features carry people across their life course, for better or worse in health and social standing (Verbrugge, 1989). As mentioned earlier, sociologists view aging primarily as a process involving role acquisition and role loss.

The two basic concepts associated with role theory, "status" and "role," were first introduced by the sociologist Linton (1936). Social status refers to a socially defined position within a given social structure that is separate from, but related to, other positions. Status can
be achieved by an individual through personal choice, or by competition and use of training and abilities. Associated with each status position is a social role. This represents a social definition of the behavioral patterns, rights, and responsibilities expected from those occupying a specific status position. The definition results in a set of role expectations derived from what the individual expects while occupying that status, and, more important, what others expect of the individual in a given situation.

To role theorists, social behavior can be explained by examining the various processes that result when roles are acquired, performed, and lost. This dynamic process involves role learning, role change, and role transition. Inevitably, role changes have an impact on the individual's identity, self-image, and social behavior. Role changes pose a challenge to the individual and often require behavioral and cognitive adjustments and adaptation. Since many role changes are linked to chronological age or to researching particular stages in the life course, it is not surprising that social scientists and social gerontologists have used role theory in an attempt to understand the phenomena associated with aging, particularly the status of being old. The first use of this theory in gerontology was based on the premise that movement through the life course, especially in the later years, is characterized by a loss of or reduction in major social roles (worker, parent, spouse, etc.). It was also based on the assumption that the process of aging involves major role transitions or role withdrawals such as widowhood, retirement, the death of friends, and loss of independence (Marshall, 1980). As a result of the prevalence of these role changes, old age was seen as a time of physiological, psychological, and social loss; as a period when new social relationships and roles typical of later life are adopted; and as a period involving the acquisition of a devalued status with few meaningful roles, or, to use Burgess' (1950) concept, a "roleless" role. Role theory directed attention to the loss of meaningful institutionalized roles in later life; the
devalued status of the aged, and the occupancy of tenuous roles; the lack of an adequate
socialization process for later-life roles (widow or retiree); and the impact of these processes
on identity, self-concept, self-esteem, and social interaction. According to role theory, an
individual develops an awareness of the social position he or she occupies in society through
interaction with others. Interaction produces a "social self" that is the part of the personality
that links the individual to society. Thus, identities are developed and sustained in role
relationships. Societal roles, such as those associated with age and gender, are closely tied to
the norms and values of society (Mead, 1934; Rosenberg, 1979; Stryker and Serpe, 1982).
From this perspective, the degree to which persons have a meaningful existence over the life
course depends on their social roles. As it is presumed that age is the basis for assigning and
withholding institutional statuses (Blau, 1973), age-related changes in psychological well-
being are largely attributed to characteristics of the social system.

Social gerontologists also rely heavily on activity theory, which may be viewed as the
application of role theory to the life experience of the elderly. Activity theorists focus on the
importance of social interaction for the maintenance of psychological well-being. Pilisuk
(1982), for example, refers to social interaction as an "inoculation" that protects the elderly
from the stresses of old age. In terms of role loss, activity theorists focus consistently on the
lack of formal roles and statuses available to the elderly within the main institutional structure
of society. They emphasize the role loss associated with retirement, the loss of good health,
and the loss of one's spouse. In summary, from a role perspective, one will expect that one's
psychological well-being is likely to be more positive in early adulthood and to decline with
age.

As pointed out in Chapter 1, the concept of adult psychological maturation is derived
from theories of human development descended from Freud's theory of psychosexual
development. Freud's formulation was in turn based on an epigenetic model of development borrowed from biology. Freud proposed that psychological development occurs in a sequence of stages. According to Freud, the individual is born with a psychological "Anlage," a predisposition to certain characteristics, which will develop naturally if growth is not interrupted. Human-development theories of today continue to emphasize stages of development and developmental tasks. They offer a strong theoretical context for the examination of change over the life course, with the presumed outcomes differing substantially from those of a role perspective (Gove, Ortega, and Style, 1989). Erikson (1959) formulated a psychosocial stage model that outlined the primary crises for the expanding ego from birth through old age. The ego challenge of middle age, generativity versus stagnation, reflects a concern for establishing and guiding the next generation and emphasizes qualities such as productivity and creativity. The prediction is that one moves beyond the self-directed concerns of identity prominent in adolescence and the interpersonal concerns of intimacy prominent in young adulthood to the phase of sharing one's knowledge and skill with younger individuals and assuming leadership and decision-making roles.

Erikson (1982) describes eight "ages of man," each defined by the duality of the possible gains and losses that occur at each stage. His fifth stage, that of adolescence, is a time of experimentation and testing. Here, there is a concern with "identity versus role confusion." Erikson defines identity as "confidence that the inner senses and continuity of the self are matched by the sameness and continuity of one's meaning for others." Having resolved the issue of personal identity, the person moves into adulthood and the last three of Erikson's stages. His sixth stage is "intimacy versus isolation." This is the time of mate selection and early family formation. It is also the time for launching one's career. The next stage is that of "generativity," which occurs during middle adulthood. This is a time of high
productivity and creativity in work; there is also a concern with establishing and guiding the younger generation. The final stage, integrity versus despair, is perhaps the most elusive and enticing of Erikson's stages. Many aspects of integrity have been identified: Emotional integration, accepting one's life cycle as something that had to be, adapting oneself to the triumphs and disappointments of being, possessing a life of humankind rather than self, and achieving a spiritual sense that eliminates the fear of death.

According to the theory, one faces the challenge of ego integrity in old age (Ryff, 1985). With the development of ego integrity, there is the acceptance that one's fate has, in general, been inevitable, appropriate, and meaningful. One becomes less concerned and less focused on one's accomplishments and status and more attuned to one's inner feelings. Neugarten (1973) elaborated the personality challenges of middle age and old age. She proposed the "executive processes" of middle age that included qualities such as self-awareness, selectivity, manipulation, and control of the environment mastery, and competence. Individuals of this age viewed the environment as rewarding risk-taking and boldness. In contrast, the older person was seen as more conforming and accommodative to outer-world demands. This inward-turning was described as the process of inferiority, or as the active-to-passive mastery sequence (Gutmann, 1977). More recently, the works of Levinson (1978), Gould (1978), and Vaillant (1977) have formulated personality transitions that individuals experience in the second half of life. Jung (1958), Buhler (1935), Neugarten (1977a), Levinson (1978), Gould (1978), and others have suggested a similar progression. These authors hold that early and middle adulthood is associated with a concern with self and is characterized by a focus on activity, achievement, power, and control. In contrast, they hold that old age persons have fewer ego concerns and are more reflective, contemplative, and accepting of self and others.
Such a progression clearly implies that with age, one's sense of self evolves, moving from an absorption with self toward an acceptance of one's life and the world about one. In brief, according to this perspective, early adulthood is associated with a high level of ego involvement, which is reflected by a strong focus on self and situation. During this time, persons will be very concerned with the recognition they receive from others. As persons age, their ego concerns gradually decline, and they become more focused on the needs and concerns of others. And they become more attuned to inner needs, more accepting of life, and less controlled by external events. In sum, one senses with age a growth of "maturity" with the appearance of greater mastery of self and the environment. Over a lifetime of experience many individuals have the opportunity to integrate their experiences in such a way as to modify the various components of their self-evaluation which results in lower tension. Thus, in the mature person in the later years, the ideal self and the actual self may more closely approximate each other than they did earlier, e.g., in earlier adulthood. In this perspective a greater congruence or diminished distance between these different concepts of the self would result in greater internal stability in the self-structure. The basic proposition is that there is, for the normally developing older adult, a more stable self-structure than existed in early life. In a word, the image of aging derived from the adult maturational perspective suggests that aging is a relatively positive process.

In addition, the literature suggests that it is important to consider gender differences in aging. Baken (1966) has used two modalities to characterize men and women: a sense of agency and a sense of communion. Agency is characteristic of males and is manifest in self-assertion, self-projection, and self-expansion. Communion is characteristic of females and implies a selflessness, a concern for others, and a desire for harmony. Gilligan (1982) found that women, when compared with men, are much more attentive to others. Many researchers
assume that gender roles mediate the relationship between age and mental health. Some of them argue that the different social roles of men and women will modify their psychological well-being. Because mental disorders frequently are related to low income, widowhood, and social isolation (Butler and Lewis, 1977; Dohrenwend and Dohrenwend, 1969; Warheit, Holzer and Schwab, 1973), it is a reasonable assumption that older females would be particularly vulnerable. It is also well documented that women in Western society have significantly higher rates of psychological distress than men (Al-Issa, 1982.) However, the relationships between gender and mental health, and changes in later life, remain controversial (Cleary, 1987; Walsh, 1987). Accordingly, the present study will pay much attention to gender differences in the relationships between age and mental health.

Life Events versus Life Strain

When people think of stressful life events, they usually think of major catastrophes such as the death of a spouse, a major accident or illness, loss of job, or a divorce. These events are indeed associated with a wide range of poor psycho-social and health outcomes. Over the past 30 years, considerable research has supported the proposition that major life stressors are risk factors for psychological illness (Zautra et. al., 1988). However, the mechanisms underlying these relationships are by no means clear. Indeed, there are wide gaps in the knowledge of the process by which such events come to influence mental health. Numerous studies have attempted to identify the sources of psychological distress and determine the role of social factors either as antecedents or moderators in the distress process. An abundance of literature in the past twenty years has established the existence of a strong positive relationship between major life events and physical or psychological disorder: the more such events and individual experiences in a given period of time, the greater is the
probability that he/she will exhibit symptoms of physical or psychological disturbance (Brown and Birley, 1968; Birley and Brown, 1970; Paykel, 1974; Myers, Lindenthal, and Pepper, 1974; Coates, Moyers, and Wellman, 1969; Dohrenwend and Dohrenwend, 1974).

Kessler and Cleary (1980) argued that distress is caused by exposure to stressful life experiences. Life event research in the psychosomatic study of stress is based on the assumption of homeostasis. Any life change that requires an adjustment is a stressor, regardless of whether it is expected and independent of its desirability. Stressors, depending on their intensity, duration of exposure, and the resources of the person, can then lead to disorder (Murrel, Norris, and Grote, 1988). Thoits (1981) found that health-related events account for the well-established relationship between undesirable life events and psychophysiological distress. Studies also found a higher incidence of depressive illness among the elderly than among their younger counterparts. This can be traced to the many stressful events that occur in later life since later years are often characterized by a series of emotionally hazardous events, such as severe illness, retirement, frequent or abrupt changes in living arrangements, loss of a spouse, and death of close friends and companions. It is not unusual for these stressful events to follow in rapid succession, increasing the likelihood of a severe emotional reaction as a result of accumulated stress. Unfortunately, many older persons have limited personal, financial, and social resources available when they are forced to cope with stress and have difficulty adapting to new situations. As previously stated, most stressful events are related to loss: loss of family members, financial or social status, or mental and physical functioning. Even if the loss is only perceived as real, such as memory loss, the stress is as profound as if it were real.

The research on aging stress has been strongly influenced by the life-events approach of Holmes and Rahe (1967). Their research instrument, the Schedule of Recent Events,
which is quickly administered and easy to understand, draws on the theoretical premise that the source of stress is disruption of homeostasis and that degree of change is therefore a valid index of disruption. A unique feature of the instrument is its use of psychometrically derived standardized weights to assess degree of change for life events (Chiriboga and Cutler, 1980). The undesired life events may accelerate the aging process over a given time, lead to physical disease or psychological distress, or impair the reserve capacity of the organism and compromise one's ability to respond.

Although relatively little attention has been paid to the cumulative effects of stressors, recent findings from investigations of psychosocial factors suggest that an accumulation of life event changes occurring within a given time frame may be related to the development of illness (Holmes and Rahe, 1967). Small events may accumulate to cause psychological distress. Small stresses are also conceptualized as a final straw for those who exhibit a lower constitutional threshold for life change. There is preliminary evidence for such effects of small events on psychiatric disturbance (Zautra et. al., 1988). In addition, several studies indicated that the child and the elderly may have a more drastic reaction to stress than other age groups, because they are more dependent, have fewer social roles, and exhibit less differentiated behavior.

Neugarten (1970) has emphasized the importance of events being anticipated, expected, or "on time" during the life course. She suggests that there are two distinctions worth making: first, that it is the unanticipated life event, not the anticipated, which is likely to represent the traumatic event. According to this notion, older persons are more physically and psychologically vulnerable to the effects of illness (Kleemeier, 1958). Zarit and Kahn (1975) have studied the relationships among age, psychological distress, and the severity of cerebral dysfunction among individuals aged 38 to 84 who had suffered cerebrovascular accidents.
They found that, among the minimally impaired, older persons tended to be more depressed. In brief, from the life-event perspective, any significant negative life event may affect people's psychological distress, especially for older persons.

Psychological stress has been traditionally operationalized as the number of life events experienced by an individual. However, a broader conceptualization of life strain has been used to examine the effect of stress on health. According to Pearlin et al. (1981), life strain represents a group of continuous problems or ongoing conditions that various life events may create or intensify. Among elderly people, chronic life strain may be more important than life events in understanding the antecedents of psychological well-being. Physical disability and chronic health problems are associated with depressive symptoms in the general and elderly population (Berkman et al., 1986; Kaplan et al., 1987). Studies of mental health in the elderly have found an association between physical health problems, financial problems, and social isolation, and indicators of psychological distress (Arling, 1987; Berkman et al., 1986; Haug, Belgrave, and Gratton, 1984; Romaniuk, McAuley, and Arling, 1983).

Compared with younger individuals, the occurrence of life events among older people may not always result in psychological distress because certain life changes are expected with age. In addition, older people often have considerable experience with and have a good capacity for dealing with these changes (Blazer, 1980). Blazer (1980) found when controlling for physical, social, and economic impairment that life events accounted for only a small proportion of the variance in the mental status of the community elderly. He commented that most older people have a good adaptive capacity for change because of their lifetime of experience in dealing with such events and their abilities to accept certain changes as a normal part of growing old. Older people may have the capacity to adapt to specific changes in their lives, but they do seem to be affected by ongoing sources of strain. Studies dealing with
psychological functioning in old age have shown consistently that physical health problems, economic deprivation, and social isolation are associated with both psychological distress (Luke, Norton, and Denbigh, 1981; Romaniuk, McAuley, and Arling, 1983) and low ratings of subjective well-being (Larson, 1978). Arling (1987) developed and tested a theoretical model of the interrelationship among life strain, social resources, and psychological distress in a sample of noninstitutionalized elderly adults. He found that health status was the strongest predictor of psychosomatic and emotional symptoms of distress. Although George (1989) indicated that a relationship between the two has been found consistently, the effect appears to be stronger in the case of chronic stress than in the case of life events. In summary, from the life-strain perspective it is the chronic stress more than the stress of daily life events which causes psychological distress.

As Kessler (1979) maintained, if we are to understand sex differences in distress, then we are compelled to examine differential rates of exposure and vulnerability to stressful experiences. The differential-exposure perspective holds that women are more depressed than men because women are exposed to more stressful experiences. There is some evidence that elderly women experience more stressful life events than elderly men (Norris and Murrell, 1984). On the other hand, the differential-vulnerability perspective suggests that sex differences in distress arise because comparable stressful experiences exert a greater impact on women than on men. Kessler and McLeod (1984) indicate that gender differences in vulnerability to stressful life events account for a substantial portion of the overall relationship between sex and psychological distress in the general population. Moreover, this research suggests that greater female vulnerability is confined mostly to network crisis events (events that do not involve the respondent directly, but occur instead to members of his or her social
network). Although the two perspectives hold different points of view, they both indicate that stressful experiences have a deeper impact on women than on men.

Social Support and Social Relations

In recent years "social support" has become an increasingly important concept in social gerontology. The notion that social conditions and processes influence mental and physical well-being is an old one. At the end of the nineteen century, Durkheim (1897) emphasized the connection between social alienation and suicide, and social isolation came to be recognized as a major determinant of mental illness (Faris, 1934; Jaco, 1954). The concept of social support has emerged from these traditional areas of sociological research, and during the last decade it has assumed a prominent position in theories of mental illness. As we learn more about social support, the questions of how it is related to life stress and psychological disorder have become more complex. The social support concept reflects a greater emphasis on individual conditions and needs, and on the adequacy on social relationships and transactions in fulfilling these needs. An area of social research that has influenced the field is coping and psychotherapy research, which tends to emphasize the role of social support as crisis help and coping aid (Gottlieb, 1981). In contrast, the sociological approaches mentioned above were not specific about the mechanisms by which social factors influence mental health rather than as a moderator of stress.

Many studies of the stress process in later life are concerned with the relationship between life events, social support, and psychological distress (George, 1989). Although the empirical evidence is far from conclusive, the general consensus is that the deleterious effects of stress appear to be reduced for older adults with strong social support systems. As this literature has evolved, researchers have proposed a number of conceptual models that provide
alternative ways of specifying the interrelationships among stress, support, and well-being (Dohrenwend and Dohrenwend, 1981; Lin, Dean, and Ensel, 1986; Wheaton, 1985). One model of the stress process, the mediator model, is especially important for the purpose of this study. The basic nature of the mediator model becomes evident when the direct and indirect effects of stress on well-being are examined. This model predicts that stress exerts a negative direct effect on well-being, but that these noxious effects are offset or suppressed by the positive indirect effects of stress that operate through social support (Krause, 1991). In particular, proponents of this view maintain that stress increases support utilization, and that increased assistance from others in turn tends to bolster or relieve feelings of distress. This theoretical formulation suggests that social support is stress-responsive and that individuals actively pursue (or at least gratefully receive) increased assistance from others during difficult times.

There appears to be a good deal of empirical support for the mediator model in the literature (Krause, 1987; Norris and Murrell, 1984). Some investigators, however, present an alternative view of the interface among stress, support, and well-being that does not concur with the mediator model. These researchers suggest that, instead of leading to greater support mobilization, stress may actually tend to erode supportive ties (George, 1986; Hobfoll, 1985; Wheaton, 1985). Hobfoll (1985) maintains that individuals may decide not to approach significant others during stressful times because of the stigmatizing or embarrassing nature of the event that confronts them. Some investigators even find a negative relationship between stress and social support, signifying that elderly people who are exposed to high levels of stress tend to receive less support than older adults who are confronted by fewer stressful events (Cutrona, Russell, and Rose, 1986). In other words, instead of seeking social support
from others people dealing with undesired negative life events might choose to isolate from people.

The contribution of social support in coping with psychological stress is currently the subject of considerable research (Berkman, 1984; Broadhead et al., 1983; Cohen and Brody, 1981; Kaplan et al., 1987; Pearlin et al., 1981). It is thought that social resources may moderate or buffer the effects of negative life events or chronic life strain on psychological distress and health (Cassel, 1976). The stress-buffering model requires an interaction between stress and social support such that the effects of stress are significantly attenuated under conditions of strong social support (Wheaton, 1985). There is some evidence for the stress-buffering role of social support (Cohen and Wells, 1985; Kessler and McLeod, 1985). Other studies have documented the direct beneficial effect of social support and the negative effect of life strain on general mental health and psychological well-being (Arling, 1987; Diener, 1984; Harel and Deimling, 1984; Kaplan et al., 1987; Liang et al., 1980).

Lin et al. (1979) define social support as support accessible to an individual through social ties to other individuals, groups, and the larger community. This elaborated to specify kin, friends, acquaintances, and co-workers (Lin et al., 1979) as well as neighbors. Lin (1986) argued that the social component should reflect the individual's linkage to the social environment. This can be represented at three distinct levels: (1) the community, (2) the social network, and (3) intimate and confiding relationships. The support component should reflect the essential instrumental and expressive activities. Social support is sometimes seen as attachments among individuals or between an individual and a group that serves to (1) promote emotional mastery, (2) offer guidance, and (3) provide feedback about one's identity and performance (Caplan, 1974).
Cobb (1976) proposed that social support includes emotional support (one is cared for and loved), esteem support (one is valued and esteemed), and network support (one belongs to a network of mutual obligations). Pearlin (1984) viewed the network, the small group, and interpersonal sources as three elements of social support. He argued that, although the network represents the relationships the individual can turn to, it is the smaller group that represents social relationships the individual is most likely to turn to for support. The significance of the interpersonal source of support lies in the quality of relationships, such as trust and intimate exchange. Persons of similar characteristics, attitudes, and lifestyles tend to congregate in similar residential, social, and work environments, which promote interactions and associations.

Similarly, frequency and intensity of interactions promote similar attitudes and lifestyles. This relationship is the fundamental ingredient in the concept of social circles or social networks. Lin (1982) has proposed that the strength of ties should be evaluated relative to the actions taken by the ego. In general, social actions are taken for either instrumental or expressive purposes. Instrumental actions are those taken to achieve specific goals that are distinguishable from their means. Expressive actions, on the other hand, are actions that have indistinguishable means and goals. Job-seeking, purchasing, looking for a stranger, and getting educated are examples of instrumental activities. Sharing emotional problems, exchanging life experiences, and going out to dinner with a friend, are examples of expressive activities, at least if these by themselves are the ultimate goals of the participants. He also argued that the degree of success for either type of action depends to a large extent on the resources provided by ego's social ties. Mental health represents the psychological and emotional status of a person, and its promotion and maintenance requires expressive action.
The social-resources theory permits certain predictions regarding the process of maintaining mental health: namely, that access to and use of strong and homophilous ties promotes mental health. It is clear that social support can be operationalized as access to and use of strong and homophilous ties. Pearlin et al. (1981) suggest that being embedded in a network is only the first step toward having access to support. The final step depends on the quality of the relations one is able to find within the networks. Cassel (1974) suggests that the strongest social support is provided by the primary groups that are of most importance to the individuals. In sum, all of these important previous efforts at conceptualizing social support focus on resources provided by strong ties, either as independent contributors to a person's well-being or as buffers against adverse events.

Some research findings have established a relationship between levels of social contact and mental well-being in general. Most research on the relationship between social support and psychological well-being has focused on the degree to which social support serves as a buffer to mitigate adverse health effects of stressful life events such as bereavement, retirement, relocation, on mental health crises. Close contact with others is a natural stimulant, and the cooperation and conflict that constitute and result from interpersonal interaction serve to exercise mental faculties and are normal parts of life that are missing from the lives of those who lack close association with others. Further, the presence of others is an aid to agenda-setting and other anchorage to the realities of everyday life. Lowenthal and Haven (1968) have found that older people who experience decreased social interaction are more likely to exhibit mental health symptoms of depression. In their study, the important role of confidant was highlighted, with a positive correlation found between having a confidant attitude and mental well-being. Eaton (1978) found evidence of a higher correlation between stress and symptoms among people living alone, providing evidence of a moderating
effect of social support in data on a relatively youthful sample. Similarly, in research across the life cycle, Lin et al. (1979) have found limited evidence of social support moderating between stressors and psychiatric symptoms. In addition, Palmore et al. (1979), in studying psychiatric and physical outcomes associated with retirement, widowhood, empty nest transition, and serious illness, found little evidence of decline among people having interpersonal and socioeconomic support resources. Fuller and Larson (1980), however, found no evidence of interpersonal support mediating between stressful life events and morale or distress among older people.

Generally speaking, social support has been viewed as a buffer between life crises (social strain) and the development of mental and physical illness. The central social support thesis is that mental illness results from a clustering of life events if the individual lacks adequate social support mechanisms to buffer the effect of this stressor. Those experiencing life events but no subsequent illness are "protected" from their impact by being embedded in a social support system. Social support is most germane when produced by a combination of sources. The greater the integration into a support system, the more effective the social support (Myers, Lindenthal, and Pepper, 1975). This argument is made also by Stryker and Serpe (1982). Several studies suggest that the most effective social support is provided by networks within which the individual plays multiple roles and thus has many potential sources (Mitchell and Trickett, 1980). For example, Evans and Northwood (1979) note that neighborhood networks, consisting primarily of family and friends, are used for everyday social activities and occasional emergencies. Notably, the elderly are unable to integrate easily into neighborhood networks. This may explain the findings of a prospective study by Ferraro (1982), who notes a decrement in mental health among the elderly who relocated.
In brief, these studies imply that social support, whether as a buffer against illness or as an ameliorative in disease recovery or care, comes from a variety of sources. While theoretically inelegant and rather straightforward, a review of support sources is a necessary first step toward understanding the nature of social support. Sources of support must be isomorphic with the individual's social roles. Thus those identities having salience for the individual will dictate the most likely and effective sources of support. The focal individual, significant others, and groups within networks each possess potentially unique functions. The individual's attachments to specific sources within a network dictate the content of the support provided. Thus source and content, and scope, are interactive components of social support. For social support to be effective, the network must be stable over time (Thoits, 1982). During periods of crises the network's stability may be altered, thus confounding its ability to serve an intervening function.

The need for socioemotional support to maintain a sense of self is well documented (Fuller and Larson, 1980; Jenkins, Mann and Belsey, 1981; Thoits, 1983). The provision of intimacy and an outlet for expressive needs (Dean and Lin, 1977) bolsters the individual's ability to mediate crises and maintain preexisting roles and behaviors. Stahl and Potts (1985) argued that the conceptual issue for the third dimension of social support is the focal person's social integration. The greater the social isolation, the more severe the impact of life events and the greater the probability of mental illness. When integrated with source and content, scope provides closure to social support theory as an explication of the relationship between life events and mental illness. In sum, social support theory has considerable potential for understanding psychological and somatic disease etiology.

"Modern" interest in social support is usually traced to Cassel (1976) and Cobb (1976), who noted the importance of supportive others in promoting "host resistance," that is,
the ability of an individual to resist infection or illness (Antonucci, 1991). Social relations have long been known to affect mental health, most notably depression (Schaefer, Coyne, and Lazarus, 1981) and negative affect (Rook, 1984), but also the ability to cope with stressful life events (Kasl and Cooper, 1987) and physical illness (Brubaker, 1987). Research in the area of depression is particularly illustrative, because it has been demonstrated that depressed individuals have generally smaller networks, often have experienced important losses in childhood, and have problematic or negative interactions with their network members (Brown and Bifulco, 1985; Dean, Kolody, and Wood, 1990; Fondacaro and Moos, 1987).

Social relations can also influence the period surrounding a health crises and the post-event recovery. A great deal of research has shown that people in crises are better able to cope with and recover from these events when they have good supportive relationships (Atkins, Kaplan, and Toshima, 1989; BanDura, 1986; Antonucci and Jackson, 1987). Social relations also affect mental health through what might be termed "instrumental practicality." Thus, the presence of supportive others is useful in a variety of ways.

In sum, there seems to be a practical basis for some of the health-enhancing effects of social relationships. These effects are best understood as effective peri-or post-acute crises events or under conditions of chronic mental health. There is considerable evidence that most older adults are enmeshed in reasonably extensive and reliable networks of significant others and are satisfied with the support available to them (Shanas, 1979a, 1979b; Ward, Sherman and LaGory, 1984; Markides, Boldt, and Ray, 1986).

Several studies have examined age differences in social support within relatively narrow age ranges. Cantor (1975) reported that both young-old and old-old typically report extensive support networks and that network size is not significantly related to age. Antonucci (1985) and Antonucci and Akiyama (1987a) indicated no age differences in network size or in
amount of received support. There were no significant age differences in the number of people in the support networks of older people as compared with younger people (Antonucci and Akiyama, 1987a). The social support literature suggest that social relations provide a positive base for people that help them function both under normal situations and under stress.

There are well-established gender differences in social relationships. Women tend to have more people in their networks, to have more family and friends, to have more different types of relationships with different types of people (i.e., more multiplex relationships), to have more frequent contact with their network members, and to receive supports from multiple sources (Antonucci and Akiyama, 1987b; Buhrke and Fuqua, 1987; Rossi, 1985; Troll, 1988; Wright, 1989). Although qualitative rather than quantitative measures are usually more predictive of well-being for men and women, the impact of both is greater for women. Kessler, McLeod, and Wethington (1985) found that women were more negatively affected by the stressful life events that occurred to people who were close to them. Haug and Folmar (1986) found that women were more likely than men to lack the support of a spouse, to live alone, and to suffer emotional losses. Antonucci and Akiyama (1988) found that, although women had larger intimate networks, this was negatively related to happiness. Additional inquiry suggests that this negative association is related to the demands placed on women by intimate network members, sometimes even in the face of widowhood (Morgan, 1989). Leffler, Krannich, and Gillespie (1986) explored contact, support, and friction among network members and found that women's networks more often included conflict.

In sum, the gender differences appear to be a mixed blessing. Findings of different patterns for men and women across various statuses may be consistent with recent evidence pointing to the role of social support as an important factor for mental health. This evidence suggests that social support may be a key element accounting for gender difference in mental
Numerous studies have addressed themselves to the relationship between social support and mental health. For females, during certain phases of their life, friendships with other females have been found to be just as supportive and intimate as relationships with husbands or male friends (McLanahan, Wedemeyer, and Adelberg, 1981). Furthermore, these relationships can be of therapeutic value (Candy, 1981; Davidson and Packard, 1981).

Another important reason for considering social support as a factor in explaining gender difference in mental health comes from its success in predicting mental-health status in general. Lin, Woelfel, and Light (1986) found that strong ties have a significant effect in reducing the potential impact of important and undesirable events on depression. A healthy mental state requires sharing and confiding with intimates who can empathize with the problems involved. Depression is a problem requiring expressive action, which is most successfully accomplished through access to and use of strong social ties.

The Case of Taiwan

Traditionally, Taiwan is a society where old people are respected, treated with politeness and deference, and well cared for. However, many of them may still feel sad and useless. This is especially true for the men, who have experienced a decline in power, if not in respect, from middle to old age. For the women, never very powerful outside the family, the transition is sometimes easier, and old age is usually more pleasant. Broadly speaking, Chinese culture places a high value on old age. Veneration of the old is bound up in the Confucian system of social ethics, which underlies most of late traditional Chinese elite social philosophy and which, in modified form, has permeated all classes of society even into modern times. In Confucian ethics, society is seen as an organically interrelated system in which people are expected to play certain roles relative to each other, the end being social
harmony to the benefit of all. The parent should act toward the child with "nurturance," and the child should return this with "filial piety." Indeed, filial piety may be called the cardinal virtue of traditional Chinese social ethics.

Moreover, the high valuation of the aged in Taiwan extends far beyond respect for one's own parents. Chinese culture traditionally has had many symbolic ways of emphasizing the high status of old people. To begin with, the very word "old" is a mark of respect. This pervasive respect for old age confers many advantages on old people. First, they are ensured as physically comfortable an existence as possible, for it would be shameful as well as a breach of filial piety to neglect their needs for food, clothing, or medical care. Second, whatever people may actually think of their own and others' parents, they never ridicule or insult old people for being old-fashioned or losing their mental acuity. Third, the family-centered nature of care for the aged means that old people are always active participants in family and community affairs, and have daily contact with younger adults and children both inside and outside the family (Harrell, 1981). In short, the obligations of filial piety, combined with the many symbolic and conventional aspects of deference to old people, ensure that the basic needs of the aged are taken care of without question, and that old people receive attention and respect from more junior members of the family and community. But the problem of old people has another aspect.

In Taiwanese society, old people had very little actual power in most families. Men who retired from active farming or other work soon lost touch with the family economy, and younger men in their middle years rose to positions of prominence in the family. In the community the younger generation, thanks to their greater vigor and activity, took over most local political offices. With modernization, the old have become increasingly marginal; not only are they making little contribution to the family economy, but they may even be totally
ignorant of the new commercial and industrial contexts in which their juniors work to bring
the community the increased prosperity of today. Growing old is quite different for
Taiwanese men and women. Women who are unquestionably treated as inferiors and even
oppressed from childhood through middle age are usually happier and less lonely in their final
years than their once-powerful husbands and brothers.

With its great success of economic development, Taiwan has experienced a rapid
industrialization and urbanization process in recent decades. As the process of modernization
gained momentum in the 1970s in particular, the structure of society in Taiwan began a
significant transformation. Extensive differences from the earlier situations are now evident in
a variety of social dimensions, including changes in population structure and social mobility.
As the pace and extent of social change continue to be rapid and pervasive as Taiwan moves
into the 1990s, how to cope with the growing needs of the elderly becomes a crucial issue
faced by the whole society. Of all the changes in Taiwan, the process of demographic
transition has been particularly noticeable in the past decades due to the rapid decline in fertility
rates and significant increase in life expectancy. The proportion of the elderly population aged
65 and over in Taiwan increased from 2.5 percent in 1950 to 4 percent in 1978, and then to 6
percent in 1989. With the decline both in birth and death rates and the prolongation of life
expectancy, it is projected that the proportion of those aged 65 and over in the total population
will reach about 10 percent in 2011 (Chan, 1992).

The rapid increase in the number of aged people in Taiwan, accompanied by changed
family structure, has indicated the increasing significance of problems related to the aged in
Taiwanese society. Problems faced by the aged in the biggest metropolitan city of Taiwan
(i.e., Taipei) have appeared more serious than those in many other areas. The increasing
population of elderly people, accompanied by a rapid growth in the number of the dependent
population, results in a challenge to traditional social values, which gave a high respect to older people and placed a high value on seniority. People are forced to realign themselves with one another in new ways and with social institutions ranging from government agencies to neighborhood or community organizations. According to a survey conducted by the DGBAS (Directorate-General of Budget, Accounting and Statistics, Executive Yuan, ROC) at the end of 1986, 98.9 percent of the 1,031,000 sampled in the survey aged 65 and over were living in ordinary homes; those living in institutions accounted for only 0.8 percent. The government plays a very important role in providing institutional care for the elderly. Eighty-seven percent of the 8,000 living in residential homes were cared for by public institutions, and the rest were cared for by private, mostly religious, institutions. Of those living in ordinary homes, the majority (about 71.1 percent) lived with their children, 14.2 percent lived with their spouses only, 1.7 percent lived alone, and 3 percent lived with relatives or friends (Chan, 1992).

As the number and proportion of elderly people has grown, care for them has attracted a great deal of attention from both welfare policy makers and the general public in societies where aged people have been facing more and more problems in their lives. Although the functional relationship between change in family structure and industrialization or modernization has not yet been theoretically fully established, there is evidence that the responsibility for providing services or care for the elderly has gradually been shifted from the family to society.

Although several empirical studies related to the issues of aged people have been undertaken in the past years, most of them have focused on the housing arrangement and the needs of aged people (Chan, 1992). Few of them deal with the issue of aging and mental health. In addition, these studies are more descriptive research in that they did not intend to
investigate the causal association between aging and outcome variables, or attempt to identify other factors that might serve as "mediators" or "moderators" of the association. Thus as an "aged country" where the number and proportion of elderly people in the total population will continue to grow, Taiwan still remain unprepared for the upcoming challenge.
CHAPTER 3
HYPOTHESES TO BE TESTED

The present study is concerned with testing models derived from the literature reviewed in Chapter 2 concerning the nature of the associations between age, gender, life event, life strain, social support, social relation, and mental health. Specifically, the following theoretical issues are addressed. In the first section, predictions from role and maturational perspectives are delineated. The second section draws on life event and life strain literature to outline the basic arguments of a influence direction on mental health. These arguments are addressed with SEM (Structural Equation Models) which are introduced in several figures. In the third section, hypotheses related to social support and social relation are illuminated in more complicated SEM models. Social support is singled out in the fourth section to investigate the hypotheses of "moderator effects" on the associations between life strain, life event and mental health. The last section provides a summary.

Role Perspective Versus Maturational Perspective

Past research indicates that people tend to experience increases in either physical or mental health problems as they become aged (Bush and Simmons, 1981). After controlling for background characteristics (i.e., gender, education, income, marital status, etc.), a positive moderate association remains between age and decline of health. Some studies have found, however, that the degree of associations may vary by gender. Al-Issa (1982), for example, found that women have significantly higher rates of psychological distress than men. Older females are particularly vulnerable, as Butler and Lewis (1977) have reported that mental disorders frequently are related to low income, widowhood, and social isolation. In contrast
to these findings, a recent empirical evaluation of adult years reported that as persons age their
self-concepts contain more positive attributes, fewer negative attributes, and become better
integrated (Gove, Ortega, and Style, 1989). In other words, as persons age they become
increasingly comfortable with themselves and their situation. This study also indicated that
there are some modest gender differences in these age relationships, but that, overall, males
and females appear to experience aging in similar ways.

The present study examines the relationship between age and two mental health
problems: psychosomatic symptom and emotional symptom. The role perspective would
suggest a significant positive association between age and mental health problems; the adult
maturational perspective would posit a weak negative association or even no association.

Figure 3.1 reflects the hypotheses to be tested. Path A stands for the relationship between age
and mental health problems. The role perspective would argue that path A should be
significantly positive while adult maturational perspective would assume it should be modestly
negative or even nonsignificant after taking into account the background characteristics.

Figure 3.1. Proposed model 1 to be tested
As noted, the literature has consistently presumed that it is important to consider gender differences in aging. Based on the assumptions which were considered in the prior chapter, the role perspective would predict that path A will be stronger for female than for male groups across both psychosomatic and emotional symptoms. On the other hand, the adult maturational perspective would predict no significant difference between females and males since it is based on the premise that males and females experience aging in similar ways.

Life Event Explanation Versus Life Strain Explanation

In the past twenty years, several studies have attempted to identify the social sources of psychological distress beyond age. Some of them have successfully established the existence of a strong positive relationship between major life events and psychological disorders (Kessler and Cleary, 1980). In contrast to the life-event explanation, Pearlin et al. (1981) argued that life strain may be a more appropriate explanation in understanding psychological distress among older people, given the chronic nature of many of their problems. Romaniuk et al. (1983) found that physical problems, economic deprivation, and social isolation are correlated with both psychological disorders.

The present study investigates first, the association between life events and the two mental health problems, and, second, the association between life strain and mental health problems simultaneously, to see which influence path is stronger after taking into account age, sex, and the other control variables. Figure 3.2 lays out the hypothesized paths for each approach. For instance, in Figure 3.2, the life event approach would suggest significant positive associations between age and life event (path C) and between life event and mental health (path E). In contrast, the life strain approach would argue that the only significant and positive associations should be between age and life strain (path B) and between life strain and
mental health (path D), after controlling for the background variables. Both approaches would predict that the direct relationship between age and mental health (path F) should disappear after introducing either life event or life strain as the mediator variable.

Kessler (1979) contends that the only way to understand gender differences in psychological distress is to examine the differential rates of exposure and vulnerability to stressful life experiences between different age and gender groups. According to the differential-exposure perspective, women are more depressed than men because women are exposed to more stressful experiences than men. Norris and Murrel (1984) found that elderly women experience more stressful life events than elderly men. In other words, in terms of the paths displayed on Figure 3.3, the differential-exposure perspective would hold that the positive association between life event and mental health (path H) should be stronger for females than for males. Furthermore, the association should be strongest for elderly females

Figure 3.2. Proposed model 2 to be tested
and weakest or even statistically insignificant for younger males. In contrast to the differential-exposure perspective, Kessler and McLeod (1984) suggested that gender differences in mental health arise because comparable stressful experiences exert a greater impact on women than men.

Unfortunately, direct measures that would permit the testing of the argument of differential-vulnerability perspective are not available in the present study. However, the differential-vulnerability perspective would argue that the association between life event and mental health should find no significant differences in between age and gender groups since it is not the life event itself but the impact of stressful experience which causes the differences. If any association would be significantly different between age or gender groups, the different-vulnerability perspective would suggest, though indirectly, that it should be the

Figure 3.3. Proposed model 3 to be tested
relationship between life strain and mental health (i.e., path G on Figure 3.3) since life strain may stand for the chronic influence of stressful negative life experiences.

Social Support and Social Contact

After taking into account the background variables noted earlier, the relationship between life event (or life strain) and mental health is examined while controlling for possible affiliation with social support or social contact. There are two competing models which try to interpret this mechanism. The mediator model posits that stress will increase support utilization, and that increased assistance from others in turn tends to bolster or relieve feelings of psychological distress. Krause (1991) found that stress exerts a positive direct effect on psychological distress, but that these effects are offset by a negative indirect effect which operates through social support. In other words, in terms of the diagram shown on Figure 3.4, this theoretical formulation would maintain that relationships between life event or life strain (both are sources of stress) and social support (path L and path I in Figure 3.4) should be positive and significant. Further, the association between social support and mental health (path M) should be negative since high social support should decrease feelings of distress. The direct associations between life event (or life strain) and mental health (path P, path O respectively) should be positive but may not be significant since the effects are mediated by social support.

Contrary to this point of view, some investigators present an alternative view of the interface between stress, support, and distress that does not concur with the mediator model. George (1986), Hobfoll (1985), and Wheaton (1985) suggested that instead of leading to greater support mobilization, stress may actually tend to erode supportive ties. In other words, individuals may decide not to approach anyone else during stressful times because of
Figure 3.4. Proposed model 4 to be tested
the stigmatizing or embarrassing nature of the stress that confronts them. From this point of view, when people deal with undesired life events which cause stress they might choose to isolate themselves from people rather than seek support. In terms of the diagram in Figure 3.4, this perspective would argue that the significant paths in the diagram should be paths K, J, and N instead of paths I, L, and M. That is, the association between life event (or life strain) and social contact (path J and path K separately) should be negative and significant. Next, the association between social contact and mental health (path N) also should be negative and significant. The direct effects of life event (or life strain) on mental health (path O and P) should be positive and may still be significant since this perspective did not mention social contact as a mediator. Paths I, L, and M should be trivial and nonsignificant under this point of view because people under stress would rather isolate themselves from people than seek support from others.

Figure 3.5 is used to consider the age and gender differences of social support (and social contact). The groups comparison option of LISREL VII (Joreskog and Sorbom, 1989) is employed to determine whether these differences are significant. Most literature reports that age does not significantly correlate with social support or social contact. Cantor (1975) indicated that network size is not significantly related to age. Antonucci (1985) suggested that there are no age differences in amount of received support. Antonucci and Akiyama (1987a) reported that there are no significant age differences in the number of people in the support networks of older people as compared with younger people. In sum, this literature indicates that social relations provide a positive base for people in all age categories that help them function both under normal situations and under stress. From this point of view, paths Q, R, S, T, U, V, W, and X in the diagram, if significant, should display no significant differences across age groups after controlling for sex and the other background variables.
Figure 3.5. Proposed model 5 to be tested
Contrary to the findings regarding age, there are well-established gender differences in social relationships. Women tend to have more frequent contact with their network members, and are more likely to receive support from multiple sources (Troll, 1988; Wright, 1989). Kessler, McLeod and Wethington (1985) found that women were more negatively affected by stressful life events. Haug and Folmar (1986) indicated that women are more likely than men to lack the support of a spouse and to suffer emotional losses. Antonucci and Akiyama (1988) found that, although women had larger intimate networks, this is negatively related to happiness. Leffler, Krannich and Gillespie (1986) suggested that women's networks more often included conflict. Findings of different patterns for men and women vary across studies. This makes it difficult to predict specific gender difference in Figure 3.5. However, the present study will test for gender difference on each path (i.e., paths Q, R, S, T, U, V, W, and X) in each age group. In other words, path Q through path W on Figure 3.5 for males and females will be compared with in each age group to examine the effect of gender differences, as long as they are significant in the general model.

Finally, the present study examines the possible buffering effect of social support on the association between stress and mental health. Figure 3.6 displays the proposed model. Most of the research regarding the relationship between stress and psychological distress has found that social support serves as a buffer to mitigate adverse health effects of stressful life events on mental health crises. Lowenthal and Haven (1968) indicated that people who experience decreased social interaction are more likely to exhibit mental health symptoms of depression. Eaton (1978) found evidence of a stronger correlation between stress and symptoms among people living alone. In short, mental illness may result from a clustering of negative life events if the individual lacks an adequate social support system to buffer the effect of these stressors. Those who experience negative life events but no subsequent mental
illness may be "protected" by their social support system. Based on this literature, one would expect that the association between life event (or life strain) and mental health (i.e., path Z and path Y) should disappear in the high-social support groups because of the buffering effect of social support after taking into account age, sex, and the other control variables. However, the associations should be enhanced in low-social support groups since they lack important social support.

Figure 3.6. Proposed model 6 to be tested
Summary

The schematic diagrams in Figure 3.1 to Figure 3.6 summarize all of the hypotheses which have been derived from the competing perspectives. The diagrams are laid out under the purpose of this study to test each contending perspective sequentially. Each named association (i.e., path A through path Z) stands for a specific point of view attempting to interpret the complexity involving age, gender, stress, support, and distress.

The direct association among age, gender and mental health is presented in Figure 3.1. The analyses of these associations will be performed with an ANOVA method. Then the results will be translated into graphical representations. The final step will be to display the relationships in the diagram of Figure 3.1.

Figure 3.2 and Figure 3.3 include two more latent constructs, life event and life strain, to investigate the effects of stress on mental health. The issues of age and gender differences are also considered here. The Structural Equation Model (SEM) methods were used to perform the analyses.

In Figure 3.4 and Figure 3.5, social support and social contact are added to examine the mediator effect of social support on mental health. Age and gender differences again are considered. A stacked model comparison method will be used to detect any differences.

Finally, a special diagram in Figure 3.6 is used to represent the test of the potential moderator effect of social support on the association between stress and psychological distress. The concepts enclosed by ellipsoids are the latent constructs that will be discussed in the next chapter.
CHAPTER 4
METHODS AND PROCEDURES

This chapter contains an overview of the sampling procedures, questionnaire design, data collection, and measures. Since data used in this study are taken from a larger research project, the specifics of this project, the sample design, and data collection procedures are reviewed first. Next, the measures and specific information about the data used in the study are presented.

Context of the Research Project

In 1984-1985, there was a general social survey sponsored by the NSC (National Science Committee) conducted in Taiwan. This survey, the project of The Social Change and Social Intention Survey in Taiwan (SCSIS I), focused on political and economic issues which related to the policy and operation of the central government. Unfortunately, social issues, for example, family structure, mental health, resident environment, etc., were not included. In recent years, rapid social, political, and economic change has occurred in Taiwan. However, what and how the social structure, social values, or even people's attitudes and behaviors have changed were still puzzles for researchers since there were not enough social survey data to be analyzed. Another general social survey became necessary to help to develop understanding of the impact of social change in Taiwan. Therefore, in 1988, the NSC again committed several social scientists in Academia Sinica to establish a research and development task force to map out a longitudinal project for The Social Change and Social Intention Survey II (SCSIS II) in Taiwan.
The purposes of The SCSIS II are:

(1) to increase the overall understanding about current social, political, and cultural circumstances.

(2) to measure repeatedly, to monitor the direction of social change.

(3) to help colleagues thoroughly analyze all kinds of social, cultural, and political phenomena based on this survey.

(4) to help the government learn about the real lives and problems which people confront.

(5) to offer the government advice to map out or revise its policies (Chiu, 1991).

The basic research strategies of the SCSIS II are to unearth all possible important phenomena of long-term social development and change, and to explore the situations of short-term "social crisis." In other words, on the one hand, this project focuses on the inquiry of durable social phenomena; on the other hand, it also tries to investigate people's opinions and intentions about current social occurrences or unexpected events. Together, it becomes a complete research system which offers a series of detailed and extended social survey data sets. Nowadays, it is the most important data set available to study social change in Taiwan. In addition, under the project, the government has established a research method task force to deal with problems of survey sampling, data collection, data coding, and data analysis.

The SCSIS II project is a five-year five-wave multiple cross-sectional longitudinal study. There is a general social survey with somewhat different research themes conducted in each year. For instance, the first-year survey (wave 1), started in 1990, focused on sociology, political science, psychology, culture, education, communication, and psychiatry. The second-wave survey (1991) concentrated on family, education, and psychological trends.
The third-wave survey (1992) highlighted social stratification and political culture. The fourth-wave survey (1993) targets mass communication, social order, and political participation. The final survey (1994) for this project will focus on culture, value, and religion. In addition, there are two regular and one or two irregular short-term social intention surveys to investigate the short-term characteristics and trajectory of social change in Taiwan every year.

In the present study, the first wave data of the SCSIS II is used to examine the hypotheses presented in Chapter 3. This data set contains seven major disciplines (as described above), including information about age, gender, medical attitude and behavior, and mental health which makes the present study possible and applicable.

Sample design

Applying a stratified sampling strategy, the sample design for the SCSIS II has several stages. First, based on the data of communities in Taiwan published in 1986 (obtained from the DGBAS), researchers calculated the population size of 20 to 64 years old and the population size of those who have at least junior high school degree in each community. Second, the two indicators for each community were added separately across all of the community. Third, researchers calculated the proportion of total population with at least a junior high school degree divided by total population of 20 to 64 years old. Then, according to the proportion, all communities were sampled sequentially. Fifth, based on the economic development index obtained from economic dynamic committee of Taiwan province government, all communities also were divided into eight different development levels. Finally, forty-five communities were randomly selected from the population. For each of the forty-five selected communities, research assistants were assigned to obtain the total number
of households. Each household in each community, then, was assigned a sampling number. Based on a fixed proportion, necessary samples among the households in each community were randomly selected. Within each selected household an adult age between 20 to 64 was chosen to be interviewed based on a random selection procedure.

**Questionnaire design**

According to the plan of the SCSIS II, the first wave survey (NSC78-0301-H001-39) which was conducted on January through February in 1990 includes more general questions. It involves researchers from seven different academic fields. The themes which constructed by each task force are:

1. sociology section: background characteristic (income, education, etc.), religion, social stratification and social mobility, living environment, work experience, economic attitude, family structure, human relationship, recreation activity, and social disorder
2. psychology section: alienation, recreation attitude, psychological need, working attitude, and financial attitude
3. political science section: political participation, political attitude, political assessment, and political support
4. mass communication section: communication behavior, modernization, and communication distance
5. education section: education value and attitude, and parenting behavior and attitude
6. culture section: religious behavior and attitude, and family structure and function
7. psychiatry section: mental health, health attitude and behavior.

To improve the quality of the questionnaire, the research project coordinator of each section convened his/her colleagues respectively to draft as many as possible questions for his/her
own section. Later, the coordinators meet to reorganize the whole questionnaire. The work of reorganizing the questionnaire is divided into three stages. First, the seven coordinators meet five times to discuss each question recommended from each section which focuses on wording, description, and sequence of questions. Next, coordinators invited research method experts to review and comment on the reorganized questionnaire. Timing the questionnaire is also done in this stage. Finally, based on the results of pre-tests, the coordinators, co-investigators and interested researchers get together to make final decision about which questions should be deleted and which new questions should be included. In summary, the final formal questionnaire includes 7 sections, 25 themes and 102 questions. It takes about 25 to 30 minutes to complete the interview.

Data collection

Before the formal survey, two interviewer training sessions were held to help the interviewers prepare for the interview work. The first session was held on October, 1989 after the questionnaire for the pre-test was determined. The pre-test was finished around November. There were 246 completed pre-test interviews. Based on the experience and results obtained from the pre-test, the questionnaire was revised and the second interviewer training session was undertaken again. There were total of 35 interviewers involved in the formal survey. The survey was finished on February, 1990. This survey obtained 2531 completed interviews. The data coding and correcting work was completed on June, 1990.

Measures

Age Simply, the respondents were asked to reported their chronological age. The age range is from 20 to 64 years old. In the present study, age is recoded into three age
categories in an effort to simplify the complexity of data analysis process (i.e., SEM). The three age categories are: Group 1 (20-29), Group 2 (30-50), and Group 3 (51-64) respectively. The reason to regroup age into three age categories is, from the life course perspective, people age around 20 to 29 are typically still in school or in their early career and mate selection processes in Taiwan. By age thirty, it is very important to settle down (i.e., get married, raise children, and start to make a career). There is a Chinese proverb—thirty years of age is the time a man should stand on his own feet. After that, people spend about twenty years working as hard as they can to acquire their property, raise their children, and accomplish what they can. Fifty years old for people in Taiwan is usually the time on the peak of their life journey. From then on, it is all down hill. Age between 50 and 64 years old can be treated as the stage of empty nest and pre-retirement. A lot of adjustment and readjustment occurs in this stage. Especially, in today's Taiwan, people in this stage encounter a great challenge than prior generations to redefine themselves in the changing social structure.

**Gender and Marital Status**

Gender is a dichotomized variable. Female is coded as "0" and male is coded as "1." Marital status is also dichotomized into two categories where "0" stands for single and "1" stands for married. There is some disagreement about the salience of marital status. Kessler and Essex (1982) argued that marriage enhances well-being and mental health. The married individual may be more likely than the unmarried to be integrated into social life through other relationships that are centrally or tangentially connected to the marital role (Altergott, 1985). Involvement in these role-generated relationships (Kahn and Antonucci, 1981) may provide the causal link between marital status and mental health (Weiss, 1973; Thoits, 1983). In brief, marriage is treated as an important source of social support by these researchers. On the other hand, Masuda and Holmes (1978) contented that marriage is not necessarily always happy and, in fact, should be treated as a significant
stressful life event. The present study treats marital status as one of the control variables (background characteristics), which is placed on the left side (i.e., exogenous variable) of each structural equation model.

**Social Economic Status** Social Economic Status (SES) is a typical control variable in most sociological research. Several studies have reported an associated between SES and mental health (Kessler and Cleary, 1980). Since the present study focuses on probing the association between aging and mental health, SES is used as a control variable to eliminate the potential confounding effect of any relationship between SES and AGE. In the present study, there are three indicators of SES, income, education, and self-rated social class. Income is the total household income per month reported by the respondents. It includes 7 categories: (1) under 10,000 NT dollars, (2) 10,000 to 30,000 NT dollars, (3) 30,001 to 50,000 NT dollars, (4) 50,001 to 70,000 NT dollars, (5) 70,001 to 100,000 NT dollars, (6) 100,001 to 200,000 NT dollars, and (7) over 200,000 NT dollars†. Those who refused to answer this question were coded as missing data. Next, respondent were asked to reported the highest education level they have achieved. The result was also recoded into 7 categories where "1" stands for no formal education, "2" stands for grade school, "3" stands for junior high school, "4" stands for high school, "5" stands for two- or three-year junior college, "6" stands for four-year college, and "7" stands for graduate school. Finally, respondents were also required to self-rate themselves into the class that they think they belong to. There are five categories for the self-rated class measure: (1) upper class, (2) upper-middle class, (3) middle class, (4) blue-collar class, and (5) under class. Again, those who refuse to response were treated as missing data. To investigate whether the three indicators measure the same latent construct

† One US dollars roughly equal 26 NT dollars currently.
(i.e., SES), a CFA (Confirmatory Factor Analysis) model was estimated using LISREL VII (Joreskog and Sorbom, 1989). The CFA was conducted using covariance matrix in conjunction with maximum likelihood estimation. The standardized loadings for Income, Education, and Self-rated class (.564, .719, and .619 respectively) suggest that Income, Education, and Self-rated class can be grouped together as the measures of the latent construct SES.

**Religion** The concept of religion was defined as the strength of religious commitment in the present study. Three indicators, frequency of attending church, temple or sanctuary, a check-list of religious behavior, and importance of religion for the individual, were used to measure religion. Frequency of religious attendance is measured by asking the respondents that "How often did you attend church, temple or sanctuary currently?" The response categories includes (1) everyday, (2) more than twice per week, (3) once per week, (4) once per two weeks, (5) once per month, (6) several times per year, (7) seldom, and (8) never. This variable was reverse coded in the present study. That is, the range for frequency of religion is from (1) never to (8) everyday where higher score stands for more likely attending church, temple or sanctuary frequently.

Religious behavior is measured by a ten-item (all related to religion) check list question. The respondents were asked to check all of the items which they have ever done before. The religious behaviors listed in the ten items, for example, included to ask fortunes, to draw lots, to practice geomancy, to quiet the terrified soul by a charm and so on. Each item is coded as "1" when checked or "0" when blanked. Later, the ten items were summed together to obtain a total score; therefore, the range is from 0 to 10 for religious behavior where higher score means more likely to perform the religious behaviors. The third indicator, importance of religion, is a single question which asks the respondents that "Did you agree or
disagree that religion is very important to you?" Response categories are from strongly agree to strongly disagree. To be consistent with the previous two measures, this variable is also reversed coded as "1" stands for strongly disagree while "5" stands for strongly agree with "3" stands for no opinion. Those who did not understand or refuse to answer were coded as missing data. The assumption, in this study, is higher score in all three indicators should reflect stronger commitment of religion and vice versa. A CFA is also performed to estimate the argument. The standardized loadings are .677 for frequency of religion, .351 for religious behavior, and .457 for importance of religion. Still, they reflect reasonable loadings and can be treated as the indicators for religion.

Life Event Empirically, in studying the association between life events and mental health, some researchers include both desirable and undesirable life events (Thoits, 1981). However, other researchers only consider undesirable life events (Arling, 1987; Krause, 1986a). In the present study, only the undesirable life events were included in the data analysis since one of the major purposes of this study is to assess the impact of stressful life events on mental health. There are only 5 questions which can be considered as measures of life events in the present study. All of the 5 questions are related to family issues. Therefore, the present study is forced to operationalized the concept of life event as stressful domestic life event. In other words, this measure of Life Event may be better seen as a family based measure. Indeed, an alternative labeling could be Family Strain. As such, it may not be an optimal indicator of Life Event as conceptualized in other studies. The following data analysis and discussion is presented with this qualification in mind.
Respondents were asked to report the extent to which they agreed with 5 statements regarding their family situations. The statements were:

Quarrel or fight sometimes happen on your family. (R)†
Your family always ignore you unless your problems are important to them. (R)
Sometimes you feel the mood of your family is not quite right or friendly. (R)
Your parents get along with each other very well.
You and your spouse get along with each other very well.

The response format for the items ranged from 1 (strongly agree) to 5 (strongly disagree). The five items were summed together to obtain a total score which is the measure of LIFE EVENT. Individuals get higher score of the measure reflecting he/she experienced stronger intensity of stressful life event. The Cronbach's coefficient alpha (index of internal consistency or reliability) is .54 for the latent construct.

**Life Strain**  In measuring life stress, there is a distinction between two general types of stressors—stressful life events and chronic life strain. Chronic life strains which is one of the latent construct in this study are relatively persistent problems that are continuous and ongoing (Krause, 1986b). The most used measures for life strain are economic deprivation and physical health status (Arling, 1987; Krause, 1986a). In the present study, however, the only measure available for life strain is physical health status. That is, the measure of Life Strain used in this study is restricted to health-related items. Therefore, life strain, in fact, refers to the respondents' physical health status in this study and, thus, may not directly correspond with the Life Strain measures used in other studies. Three indicators were constructed to represent LIFE STRAIN. Two self-report questions with .74 Pearson's

† R stands for reverse coded.
correlation coefficient were asked to obtain the information about respondents' chronic health problem. The questions were:

Did you have any chronic disease?

Did you have ever taken medicine, seen a doctor, or done other therapy because of the chronic disease?

The response format for the questions was 0 (No) and 1 (Yes). Later, the scores of the two question were summed to obtain a total score which is the first indicator for LIFE STRAIN ranged from 0 to 2. Health 1 is the name assigned to this indicator. The second indicator, Health 2, also included two questions which asked about respondents' recent physical health status. The first question was "How did you feel about your physical health during the past two weeks?" The response categories were: 1) very good, 2) not so bad, 3) not so good, and 4) poor. The second question was "Did your daily routine have ever been disturbed because of poor physical health or injury during the past two weeks?" Four response categories, 1 (not at all), 2 (a little), 3 (some), and 4 (a lot) were placed. Similarly, the two items with .48 Pearson's correlation coefficient were summed to obtain a total score (ranged from 2 to 8) to represent Health 2. In addition, three items were available for Health 3, the third indicator. Respondents were asked to report whether they have done the following health related behaviors. The questions were:

Did you have seen a doctor during the past two weeks?

Did you have taken any medicine during the past two weeks?

Did you have taken any tonic during the past two weeks?

The response format was 0 (No) and 1 (Yes). Again, the three items (with coefficient alpha .53) were summed together to construct the third indicator, Health 3, for LIFE STRAIN. A CFA was also conducted to estimate how good the latent construct is. The standardized
loadings for Health 1, Health 2, and Health 3 (.514, .730, and .624 respectively) strongly reflect that the three indicators are measuring the same construct. The argument here is that individuals get higher score on each indicator reflecting he/she might have severe physical health problems. The same as the constructs of SES and RELIGION, the chi-square value, degree of freedom, GFI, and p-value for LIFE STRAIN were 0, 0, 1, and 1 separately.

**Social Support** As noted earlier, Lin et al. (1979) define social support as "support accessible to an individual through social ties to others." The general catalog of the others can be elaborated to specify kins, friends, co-workers as well as neighbors. In the present study, the frequency of interacting with kins and friends and the number of acquainted neighbors were treated as the three dimension of measures of social support. Three independent questions were asked to form the indicators:

- How many acquainted neighbors did you have that you would willing to visit each other frequently? (R)
- How often did you and your relatives get together?
- How often did you and your friends get together?

The response format for the first question ranged from 1 (a lot) to 5 (none) with 3 (a little) at the middle. The second and third questions have the same response format: 1) never, 2) seldom, 3) once per 2 or 3 months, 4) twice or three times per month, 5) once per week, and 6) twice or more per week. Again, to assess the feasibility of the latent construct, a CFA with exactly the same indexes of that of LIFE STRAIN was conducted. The standardized loadings are .384, .382 and .606 for neighbors, relatives, and friends. As the measure of Life Event, the measure of Social Support is unable to parallel with those have been conceptualized in other studies. It may be better labeled as Social Connection. Although this study does not have direct measures for social support, the argument that the present study defended is that
individuals who have more acquainted neighbors who would willing to hanging around and interact with relatives and friends more frequently will possess more opportunities to obtain social support.

Social Contact Social contact is the latent construct which operationalized the concept of social relations discussed in chapter 2. In the present study, respondents were asked to check all of the groups or associations in ten check-list items which included occupational association, religious groups, recreational groups, alumni associations, political party, social associations and so on. Then, the ten items were added together to for a single measure for social contact. The scores ranged from 0 to 10 with higher score standing for stronger social contact. The similar situation of the measure of social support is encounted by the measure of social contact. The operationalization of social contact in this study may not directly correspond with the social contact measures constructed by other studies.

Mental Health To measure mental health, the SCSIS II project, originally, included 10 items which are assumed to be related to mental health. Respondents were asked to report the extent to which they feel about 10 statements regarding their "situation." The statements were:

During the past two weeks, did you feel:

headaches or tenseness in your head.
pains in heart or heart pounding or racing and worry about you might get heart attack.
pains in chest and feel very uncomfortable.
trembling or numbness in arms and legs.
trouble falling asleep.
everything is an effort for you.
loss of confidence about yourself.

hopeless about your life.

tense or keyed up and can not relax.

worrying too much about your family and others.

The response format for the items are 1) not at all, 2) a little bit, 3) a moderate amount and 4) quite a bit. A factor analysis was conducted to investigate how many factors can be determined from this scale. The result shows that two clear-cut factors were induced. The 10 items nicely and equally fit into two factors with the first five items sticking together as the factor of psychosomatic symptom and the second five items highly correlated with each other as the factor of emotional symptom. The Cronbach's coefficient alpha for the psychosomatic symptom scale is .75 while the coefficient alpha for the emotional symptom scale is .77. Both are very similar to the coefficient alpha of some empirical studies using the U.S. survey data (Arling, 1987; Krause, 1986a). A pre-data analysis which investigates the association between age and mental health found that age correlated with psychosomatic symptom and emotional symptom in different ways. To avoid confounded effect of psychosomatic and emotional symptoms, the present study decided to treat the two symptoms as independent variables instead of two indicators of MENTAL HEALTH. In other words, psychosomatic symptom and emotional symptom of mental health are investigated separately.
CHAPTER 5
RESULTS

The results of data analysis are divided into three sections. First, the basic information (mean, standard deviation, range, etc.) about each variable (both exogenous and endogenous) is described. Then, an ANOVA with MCA (Multiple Classification Analysis) and a graphic are computed to examine the associations between age and psychosomatic symptoms and between age and emotional symptoms after controlling for gender. Finally, the hypotheses derived in Chapter 3 are tested. In the third part of data analyses, all of the SEM testing procedures follow the same logic. At beginning, a null model is estimated. Next, a fully recursive model is tested. In the present study, all of the fully recursive models are significantly improved from null models in terms of chi-square change (decreased). The fully recursive models are, therefore, treated as the baseline models. Then, the statistically nonsignificant paths in the baseline models are deleted as long as the related chi-square change (increased) are statistically nonsignificant to figure out the best-fitted models. The final models presented in section three are all of the best-fitted models. In addition, the models stacked in the group comparison procedures are also the best-fitted models.

Table 5.1 provides the mean, standard deviation, and range for each of the study variables. The mean scores of psychosomatic symptom and emotional symptom for each age group are presented in Figure 5.1 and Figure 5.2 respectively. Note that Figure 5.1 showed a gradual increase in mean scores with age in both female and male groups. This pattern is consistent with the prediction of the role perspective (Bush and Simmons, 1981). However, Figure 5.2 which demonstrates the relationship between age and emotional symptom showed a roughly "U" shaped relationship for both female and male groups. That is, people in the
Table 5.1. Mean, standard deviation, and range for indicators of study constructs

<table>
<thead>
<tr>
<th>Variables</th>
<th>Mean</th>
<th>S.D.</th>
<th>Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Health 1</td>
<td>.28</td>
<td>.65</td>
<td>0-2</td>
</tr>
<tr>
<td>2. Health 2</td>
<td>3.00</td>
<td>1.04</td>
<td>2-8</td>
</tr>
<tr>
<td>3. Health 3</td>
<td>.82</td>
<td>.95</td>
<td>0-3</td>
</tr>
<tr>
<td>4. Stressful domestic life event</td>
<td>10.73</td>
<td>2.30</td>
<td>5-21</td>
</tr>
<tr>
<td>5. Social support (neighbors)</td>
<td>3.07</td>
<td>1.09</td>
<td>1-5</td>
</tr>
<tr>
<td>6. Social support (relatives)</td>
<td>3.11</td>
<td>1.24</td>
<td>1-6</td>
</tr>
<tr>
<td>7. Social support (friends)</td>
<td>3.20</td>
<td>1.47</td>
<td>1-6</td>
</tr>
<tr>
<td>8. Social contact</td>
<td>.75</td>
<td>.92</td>
<td>0-6</td>
</tr>
<tr>
<td>9. Psychosomatic symptom</td>
<td>7.01</td>
<td>2.29</td>
<td>5-18</td>
</tr>
<tr>
<td>10. Emotional symptom</td>
<td>7.09</td>
<td>2.20</td>
<td>5-17</td>
</tr>
<tr>
<td>11. Marital status †</td>
<td>--</td>
<td>--</td>
<td>0-1</td>
</tr>
<tr>
<td>12. Education</td>
<td>3.56</td>
<td>1.46</td>
<td>1-7</td>
</tr>
<tr>
<td>13. Self-rated class</td>
<td>2.68</td>
<td>.80</td>
<td>1-5</td>
</tr>
<tr>
<td>14. Income</td>
<td>2.96</td>
<td>1.24</td>
<td>1-7</td>
</tr>
<tr>
<td>15. Religion (frequency)</td>
<td>2.95</td>
<td>1.53</td>
<td>1-8</td>
</tr>
<tr>
<td>16. Religion (behavior)</td>
<td>1.78</td>
<td>1.85</td>
<td>0-10</td>
</tr>
<tr>
<td>17. Religion (importance)</td>
<td>2.98</td>
<td>1.01</td>
<td>1-5</td>
</tr>
<tr>
<td>18. Sex †</td>
<td>--</td>
<td>--</td>
<td>0-1</td>
</tr>
<tr>
<td>19. Age</td>
<td>37.72</td>
<td>11.38</td>
<td>20-64</td>
</tr>
</tbody>
</table>

†Categorical variables
Figure 5.1. Psychosomatic symptom and age
Figure 5.2. Emotional symptom and age
middle age groups have lower mean scores on emotional symptom while people in the younger and older age groups have higher mean scores. This pattern is neither consonant with the perspective of role theory nor with the adult maturational perspective since it showed a non-linear relationship between emotional symptom and age. However, this finding parallels to the recent findings of Mirowsky and Ross. Mirowsky and Ross (1992), using a national representative survey, found a significant non-linear (also "U" shaped) relationship between depression and age. The potential meaning of this finding will be discussed in next chapter. In addition, Figure 5.1 and 5.2 indicated that females in each age group had higher mean scores on both psychosomatic and emotional symptom than males. This finding is consistent with the argument of role perspective that women have significantly higher rates of psychological distress than men (Al-Issa, 1982).

To investigate the significance of differences for gender and age groups, an ANOVA that utilizes the MCA program developed by Andrews, Morgan, and Sonquist (1967) was performed. Multiple Classification Analysis is a dummy variable regression which presents mean scores of various categories, both before and after adjusting for the effects of a set of control variables (Gove et al., 1989). The results of the Multiple Classification Analysis is presented in Table 5.2. $\eta^2$ is a measure of the proportion of the total variance explained in a dependent variable at the zero-order level. In brief, it is directly analogous to $R^2$ except that the independent variable is categorical. $\beta^2$ or (adjusted $\eta^2$ indicated by adj. $\eta^2$) is a measure of the proportion of total variance explained by an independent variable after controlling for the effects of a set of control variables. Both $\eta^2$ and adj. $\eta^2$ have an identical interpretation and are directly comparable (Andrews, Morgan, and Sonquist, 1967). The difference between $\eta^2$ and adj. $\eta^2$ is only in that adj. $\eta^2$ presents the relationship
Table 5.2. The relationship between age, gender, and mental health: an analysis of psychosomatic and emotional symptoms

<table>
<thead>
<tr>
<th></th>
<th>Psychosomatic (Grand mean=7.06)</th>
<th>Emotional (Grand mean=7.11)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Unadj.(^a)</td>
<td>Adj. cont.(^b)</td>
</tr>
<tr>
<td>Age range (N)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>20-29 (534)</td>
<td>6.67</td>
<td>6.62</td>
</tr>
<tr>
<td>30-49 (1057)</td>
<td>7.09</td>
<td>7.09</td>
</tr>
<tr>
<td>50-64 (304)</td>
<td>7.65</td>
<td>7.74</td>
</tr>
<tr>
<td>Gender (N)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>female (974)</td>
<td>7.30</td>
<td>7.34</td>
</tr>
<tr>
<td>male (921)</td>
<td>6.81</td>
<td>6.76</td>
</tr>
<tr>
<td>Eta(^2) adjusted Eta(^2)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Age</td>
<td>.020*</td>
<td>.023*</td>
</tr>
<tr>
<td>Gender</td>
<td>.012*</td>
<td>.014*</td>
</tr>
<tr>
<td>Marital status</td>
<td>.005</td>
<td>.0001</td>
</tr>
<tr>
<td>Education</td>
<td>.006</td>
<td>.002</td>
</tr>
<tr>
<td>Class</td>
<td>.004</td>
<td>.003</td>
</tr>
<tr>
<td>Income</td>
<td>.003</td>
<td>.001</td>
</tr>
<tr>
<td>Religion</td>
<td>.008</td>
<td>.006</td>
</tr>
<tr>
<td>R(^2)</td>
<td></td>
<td>.042*</td>
</tr>
</tbody>
</table>

\(^a\)Unadj.: unadjusted
\(^b\)Adj. cont.: adjusted for control variables
*significant at .001 level

after adjusting for the effects of the control variables. The .001 level of significance is used because of the concerns of large sample size. The associations between age, gender, and mental health are presented in Table 5.2. The upper half of the first column displays the mean score of the psychosomatic symptom for each age group and for female and male before
introducing any control variables. In the lower half of the first column, the $\eta^2$ for age, gender, and each control variable (i.e., marital status, education, self-rated class, income, and religion) allows one to check the strength of the relationship with these variables before the controls have been introduced. Similarly, in the top half of column 2, the mean scores on the psychosomatic symptom for each age group and gender were displayed after controlling for the effects of the control variables. The adj. $\eta^2$ for age, gender, and each of the control variables were shown on the bottom half of column 2, and the total explained variance is indicated by $R^2$ (at the end of the table). This enables one to check the specific associations of age and gender for the psychosomatic symptom after the effects of control variables have been corrected for, as well as the explain power of the control variables. Column 3 and 4 repeat exactly the same functions of column 1 and 2 for the emotional symptom.

First, looking at psychosomatic symptom, column 1 showed that the overall relationships between age and psychosomatic symptom and between gender and psychosomatic symptom are significant at the .001 level ($\eta^2=.02$ and .012 respectively). Respondents aged 20-29 have the lowest mean score (6.67) of psychosomatic symptom and respondents aged 50-64 have the highest mean score (7.65). Females (7.30) also have higher mean score than males (6.81). General speaking, there is a sharp statistically significant monatomic increase between age and psychosomatic symptom and between gender and psychosomatic symptom at the zero-order level.

As is shown in column 2, adjusting for the effects of the control variables (marital status, education, class, income, and religion) improves the age and gender relationships (both with psychosomatic symptom). For example, a stronger significant relationship between age and psychosomatic symptom emerges ($\eta^2=.023$), with persons aged 20-29 having the lowest level (6.62) of psychosomatic symptom and persons aged 50-64 have the highest level
(7.74) of psychosomatic symptom. Similarly, after controlling for the effects of control variables, females still have a higher level (7.34) of psychosomatic symptom than males (6.76) and the gap is widened. The significant association between gender and psychosomatic symptom also is strengthened a little bit (\( \text{Eta}^2 = 0.014 \)). In short, the overall relationship between age and psychosomatic symptom manifests a clear and almost perfectly monatomic increase with age. In addition, the relationship between gender and psychosomatic symptom is also significant with females tending to have higher level of psychosomatic symptom. These findings tend to support arguments of the role perspective.

Column 3 and 4 present the relationships between age, gender, and emotional symptom. Looking at column 3, one can see that the mean values of emotional symptoms by age range from 7.09, for persons aged 30-49, to 7.15 for persons aged 20-29. However, these differences in mean scores between age groups are not significant (\( \text{Eta}^2 = 0.0001 \)). On the other hand, gender still significantly associates with emotional symptom (\( \text{Eta}^2 = 0.01 \)) with females showing a higher level (7.33) of emotional symptom than males (6.87). After adjusting for the effects of control variables, column 4 indicated the control variables had very little effect on the age relationships. The association between age and emotional symptom (\( \text{Eta}^2 = 0.001 \)) is still not significant. The significant association between gender and emotional symptom remains (\( \text{Eta}^2 = 0.014 \)) with females having higher level (7.37) of emotional symptom than males (6.83). Thus, the gap was widened after controlling for the effects of control variables. In summary, the finding of a gender effect also supports the argument of role perspective. However, the findings related to age effects are contrary to the role perspective.

Figure 5.3 presents the maximum likelihood estimates obtained using LISREL VII to directly examine the relationships between age, gender, and psychosomatic symptom while controlling for the effects of control variables. The structural equation model in Figure 5.3
Figure 5.3. The effect of age on psychosomatic symptom controlling for background variables (N=1580)
showed that both age and gender have significant direct effects on psychosomatic symptom ($\gamma=0.143$ and $\gamma=-0.112$ respectively) after controlling for marital status, SES, and religion. This model reflects that people tend to increase their psychosomatic symptom with their age, and that women tend to have higher level of psychosomatic symptom than men. The results are, in general, consistent with those of the previous Multiple Classification Analysis. Both support the predictions of role perspective that people tend to increase mental health problems as they age, and that women have significantly higher rates of psychological distress than men. However, the $R^2 (.038)$ of the SEM reflects that age, gender, together with marital status, SES, and religion only explained about 4 percent variance of psychosomatic symptom. It is necessary to bring in life event and life strain to proceed next step analysis. Figure 5.4 presents the SEM used to investigate the associations between age, gender, and emotional symptom after introducing the control variables. The results match the previous MCA in that women have significantly higher level of emotional symptom than men, however age was not significantly correlated with emotional symptom. The age relationship argued by role perspective is not supported by the findings but the gender effect ($-.114$) predicted by role perspective is supported. Next, models were run in an effort to assess the gender differences of associations between age and psychosomatic and emotional symptoms. Figure 5.5 shows that after introducing the control variables, age has a stronger effect ($\gamma=.171$) on psychosomatic symptom for females, while for males, the effect of age on psychosomatic symptom is less strong ($\gamma=.112$) although it remains significant. The same pattern is also shown in Figure 5.6. For females, after taking into account the control variables, age still has a significant effect ($\gamma=.101$) on emotional symptom although it is not very strong. For males, the relationship between age and emotional symptom ($\gamma=-.037$) becomes nonsignificant after including the control variables. In short, the models in Figure 5.5 and 5.6 indicated that there
Figure 5.4. The effect of age on emotional symptom controlling for background variables (N=1587)

*Significant at .05 level

\[ \chi^2(24) = 226.59 \]

GFI = .978

AGFI = .953
Figure 5.5. Gender differences of the impact of age on psychosomatic symptoms (plain for female, N=849; bold for male, N=731)

*Significant at .05 level
Figure 5.6. Gender differences of the impact of age on emotional symptoms (plain for female, N=854; bold for male, N=733)
may be a difference by gender of respondents regarding the impact of age on psychosomatic and emotional symptoms. The path between age and psychosomatic symptom is .171 for females and .112 for males. In addition, the path between age and emotional symptom is .101 for females and -.037 for males. Using the group comparison option available in LISREL VII, the chi-square obtained when all parameters in male model were constrained to equal those in female model was compared with the chi-square obtained when all parameters in two models were constrained to be equal except for the paths linking age to psychosomatic and emotional symptoms. Table 5.3 shows that the differences in chi-square were 4.63 and 7.90 respectively, which, with 1 degree of freedom, have a significant probability of .03 and .005. In other words, the gender differences of associations between age and psychosomatic and emotional symptoms are both statistically significant. The results presented in Table 5.3 support the prediction of role perspective that the associations between age and psychological distress will be stronger for females than for males.

Structural equation modeling was used to further assess the extent to which life strain or life event are associated with psychological distresses. The life event perspective argued that distress is caused by exposure to stressful life experience. Any life change that required an adjustment was a stressor regardless of whether it was expected and independent of it's desirability. Stressors, depending on their intensity, duration of exposure, and the resources of person, could then lead to disorder. On the other hand, the life strain perspective contended that life strain is a more appropriate explanation in understanding psychological distress because of the chronic nature of many problems.

In an effort to better assess both perspectives, life strain and life event are investigated simultaneously to consider which provides the better explanation on the association between stress and distress. Figure 5.7 presents the maximum likelihood estimates obtained by fitting
Table 5.3. Comparison of the impact of age on mental health for gender

<table>
<thead>
<tr>
<th>Model</th>
<th>Description</th>
<th>$\gamma$</th>
<th>$\chi^2$</th>
<th>d.f.</th>
<th>$\Delta\chi^2(1)$</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>female</td>
<td>male</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Age-&gt;psychosomatic symptom</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Baseline</td>
<td>everything set to be equal in both female and male model</td>
<td>.140*</td>
<td>.140*</td>
<td>207.88</td>
<td>54</td>
<td>--</td>
</tr>
<tr>
<td>Alternative model</td>
<td>$\gamma$ free in both female and male model</td>
<td>.188*</td>
<td>.091*</td>
<td>203.25</td>
<td>53</td>
<td>4.63</td>
</tr>
<tr>
<td>Age-&gt;emotional symptom</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Baseline</td>
<td>everything set to be equal in both female and male model</td>
<td>.035</td>
<td>.035</td>
<td>230.30</td>
<td>54</td>
<td>--</td>
</tr>
<tr>
<td>Alternative model</td>
<td>$\gamma$ free in both female and male model</td>
<td>.097*</td>
<td>-.030</td>
<td>222.40</td>
<td>53</td>
<td>7.90</td>
</tr>
</tbody>
</table>

*p<.05  
**p<.01
Figure 5.7. The effect of life strain and life event on psychosomatic symptoms (N=1580)

*Significant at .05 level

\[ \chi^2_{(59)} = 288.28 \]

GFI = .975

AGFI = .955
a SEM to examine the impacts of life strain and life event on psychosomatic symptom while taking into account any indirect effect through each other and the effect of age, sex, and the control variables. Figure 5.7 clearly shows that life strain and life event are significantly correlated with each other. However, it is life strain rather than life event which has a stronger and significant direct effect (β=.571) on psychosomatic symptom. Life event also has a positive effect on psychosomatic symptom but it is trivial and non-significant. In other words, the results support the arguments of the life strain perspective. Figure 5.7 also displays other interesting results. First, age and gender are significantly associated with life strain but not with life event. Further, after inserting in life strain, the direct effects of age and gender on psychosomatic symptom disappeared. This means that life strain acts as a "mediator" to transmit the effect of age and gender to psychosomatic symptom. Life event can not be regarded as a mediator since it is neither significantly correlated with age or gender nor associated with psychosomatic symptom. Gender has a negative direct effect on life strain which means women have higher level of life strain that results in higher level of psychosomatic symptom. Finally, age and religion are significantly correlated with each other and both have almost identical direct effects (.152 for age; .150 for religion) on life strain which reflects a unique phenomenon in Chinese society (or oriental societies). The details regarding this phenomenon will be discussed in the final chapter. The R² (=.34) of the model indicated that life strain is a very important predictor variable in explaining psychosomatic symptoms. Life events, on the other hand, did not contribute much in predicting psychosomatic symptom. This implies that life strain perspective may be a more appropriate explanation in understanding psychological distress.

Figure 5.8 presents findings that contrast, in some respects, to the prior analysis. Again, life strain and life event are significantly correlated and both have significant direct
Figure 5.8. The effect of life strain and life event on emotional symptoms (N=1587)
effects ($\beta=.378$ for life strain; $\beta=.165$ for life event) on emotional symptoms. As with the prior model, these estimates take into account the effect of age, gender, and control variables. Neither age nor gender have any direct effect on life events, which means life event did not mediate the effects of age and gender on emotional symptom. On the other hand, life strain demonstrates multiple influences in this model. First, it serves as a "mediator" in between gender and emotional symptom. This means that the significant direct effect of gender (see Figure 5.4) on emotional symptom, although not strong, is transmitted indirectly through life strain. In brief, again, women tend to have higher level of life strain which also results in having higher level of emotional symptom. Next, life strain, which links age to emotional symptom, serves as a "connector" but not a mediator since age did not directly impact on emotional symptom (see Figure 5.4). Both life strain and life event contributed significant direct effects on the variance of emotional symptom. The life strain perspective seems to provide a more powerful explanation in interpreting emotional symptom. However, combining life strain together with life event only explains 19 percent ($R^2=.19$) variance of emotional symptom. This means that the modeling of emotional symptoms may require more sophisticated approaches than psychosomatic symptoms.

Kessler (1979) argued that the way to explore gender difference in psychological distress is to examine the differential rates of exposure and vulnerability to stressful life experiences. The differential-exposure perspective contends that women are more depressed than men because they are exposed to more stressful experiences than men. In contrast, the differential-vulnerability perspective suggests that gender difference in mental health arise because comparable stressful experiences have a greater impact on women than men. Thus, the association between life event and mental health, according to this perspective, should not
show significant differences between gender and age groups since it is not the life event itself, but the impact of stressful experience, which causes the differences. Indirectly, that the differential-vulnerability perspective would predict that the relationship between life strain and mental health would differ on age or gender groups.

Figure 5.9 presents the estimated models for females and males simultaneously to simplify the comparison. After taking into account the control variables, Figure 5.9 clearly shows that females and males have almost identical coefficients of direct effect of life strain on psychosomatic symptom. In contrast to the argument of the differential-exposure perspective, the male model has a significant direct effect ($\beta=.072$) of life event on psychosomatic symptom, although not strong, while the direct effect ($\beta=.033$) for female group is not significant. To better investigate the differences, model comparisons which are available in LISREL VII were performed to assess the significance of any potential differences in the associations between life strain, life event, and psychosomatic symptom for females versus males (presented in Table 5.4). The upper half of the table reports the test of the association between life strain and psychosomatic symptom. The baseline model which constrained all parameters in the male model to be equal those in the female model obtained a chi-square=246.29 with 110 degrees of freedom. The alternative model which constrained all parameters in the two models to be equal, except for the path linking life strain to psychosomatic symptom, generated a chi-square=246.04 with 109 degrees of freedom. The difference in chi-square is .25 with 1 degree of freedom, which has a nonsignificant probability of .62. The result simply reflects that there is no gender difference in the relationship between life strain and psychosomatic symptom. The same comparison procedures were also used to examine the relationship between life event and psychosomatic symptom. Similarly, the change in chi-square of $1.34 (\chi^2=246.29$ with 100 d.f. for baseline;
Figure 5.9. Structural equation model for females and males: the impact of life strain and life events on psychosomatic symptoms (plain for female, N=849; bold for male, N=731)

*Significant at .05 level

\[ \chi^2 (42) = 118.22 \]

GFI = .977

AGFI = .957

97.41

.978

.960
Table 5.4. Comparison of the impact of life event and life strain on psychosomatic symptom for gender

<table>
<thead>
<tr>
<th>Model</th>
<th>Description</th>
<th>β</th>
<th>χ²</th>
<th>d.f.</th>
<th>Δχ²(1)</th>
<th>p-value for Δχ²(1)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
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<td>male (N=731)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Life strain-&gt;psychosomatic</td>
<td></td>
<td>β</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>symptom</td>
<td>Baseline</td>
<td>.559*</td>
<td>.559*</td>
<td>246.29</td>
<td>110</td>
<td>--</td>
</tr>
<tr>
<td></td>
<td>Alternative model</td>
<td>.547*</td>
<td>.547*</td>
<td>246.04</td>
<td>109</td>
<td>.25</td>
</tr>
<tr>
<td>Life event-&gt;psychosomatic</td>
<td></td>
<td>β</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>symptom</td>
<td>Baseline</td>
<td>.051*</td>
<td>.051*</td>
<td>246.29</td>
<td>110</td>
<td>--</td>
</tr>
<tr>
<td></td>
<td>Alternative model</td>
<td>.028</td>
<td>.080*</td>
<td>244.95</td>
<td>109</td>
<td>1.34</td>
</tr>
</tbody>
</table>

*p<.05
\chi^2=244.95 \text{ with d.f. for alternative) with 1 degree of freedom has a nonsignificant probability of .25. This means that there is also no gender difference in the relationship between life event and psychosomatic symptom. In sum, the results do not provide support for the predictions of the differential-exposure perspective which implies that the differential-vulnerability perspective may be a more appropriate explanation. However, since the direct test of the differential-vulnerability perspective is not available in the present study, this implication should be interpreted cautiously.

Figure 5.10 presents the models for three age groups. After controlling for the effects of control variables, again, in contrast to the arguments of the differential-exposure perspective, the association between life event and psychosomatic symptom is not strongest in the elder group. The path coefficients (.073 for age 20-29; .073 for age 30-49; -.027 for age 50-64) reflect no age related pattern existed at all. Although the path coefficient (.073) for age 30-40 is statistically significant, it might be just because of large sample size (N=908). However, life strain did show a manifest effect on psychosomatic symptom in all three age groups with the strongest effect for middle age group (.440 for age 20-29; .594 for age 30-49; .577 for age 50-64). To examine the significance of age differences, model comparison were performed. The results were summarized on Table 5.5. The test of relationship between life strain and psychosomatic symptom was demonstrated first. The baseline model with all parameters being constrained to be equal in three age groups generated a chi-square=365.91 with 178 degrees of freedom. The alternative model which only allowed the path between life strain and psychosomatic symptom free to be estimated in all three age groups obtained a chi-square=359.46 with 176 degrees of freedom. Thus, with 2 degrees of freedom, the difference in chi-square was 6.45 which has a significant probability of .04. The implication
Figure 5.10. Structural equation model for age groups: the impact of life strain and life events on psychosomatic symptoms (plain for aged 20-29, N=479; bold for aged 30-49, N=908; outline for aged 50-64, N=193)
Table 5.5. Comparison of the impact of life strain and life event on psychosomatic symptom for age groups

<table>
<thead>
<tr>
<th>Model</th>
<th>Description</th>
<th>( \beta )</th>
<th>( \chi^2 )</th>
<th>d.f.</th>
<th>( \Delta \chi^2(2) ) for ( \Delta \chi^2(2) )</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Age1</td>
<td>Age2</td>
<td>Age3</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>(20-29)</td>
<td>(30-49)</td>
<td>(50-64)</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>(N=479)</td>
<td>(N=908)</td>
<td>(N=193)</td>
<td></td>
</tr>
<tr>
<td>Life strain-&gt;</td>
<td>everything set to be equal in both female and male model</td>
<td>.557*</td>
<td>.557*</td>
<td>.557*</td>
<td>365.91</td>
</tr>
<tr>
<td>psychosomatic symptom</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Baseline</td>
<td>β free in both female and male model</td>
<td>.455*</td>
<td>.606*</td>
<td>.538*</td>
<td>359.46</td>
</tr>
<tr>
<td>Alternative model</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Life event-&gt;</td>
<td>everything set to be equal in both female and male model</td>
<td>.055*</td>
<td>.055*</td>
<td>.055*</td>
<td>365.91</td>
</tr>
<tr>
<td>psychosomatic symptom</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Baseline</td>
<td>β free in both female and male model</td>
<td>.045</td>
<td>.077*</td>
<td>-.032</td>
<td>363.38</td>
</tr>
<tr>
<td>Alternative model</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*p<.05
of the finding is not clear although it seems to indirectly suggest that the differential-vulnerability perspective may be used to interpret the finding. The details of this interpretation will be discussed in the final chapter. The test of association between life event and psychosomatic symptom displayed in the bottom half of Table 5.5. The change in chi-square of 2.53 (365.91 for baseline with 178 d.f; 363.38 for alternative with 176 d.f.) with 2 degrees of freedom has a nonsignificant .28 probability value. This means that there is no age differences in the association between life event and psychosomatic symptom. Similar to the findings in Table 5.4, Table 5.5 also provides evidence against the argument of the differential-exposure perspective.

Figure 5.11 provides the same type of test for gender difference as that of Figure 5.9. The only difference between these two figures is, instead of psychosomatic symptom, Figure 5.11 estimates the associations between life strain, life event and emotional symptom. After controlling for marital status, SES, and religion, Figure 5.11 demonstrates that the direct effect of life event on emotional symptom is higher for females (β=.174) than for males (β=.149). Both are significant but not substantively differed. This finding is consonant with the prediction of the differential-exposure perspective. In addition, females also show a larger impact of life strain on emotional symptom (β=.408) than males (β=.328). To investigate the gender differences on these associations, model comparisons were computed. Table 5.6 presents the results of the model comparison. The path between life strain and emotional symptom in the baseline model has β=.373 when it is constrained to be the same for both females and males. When the path is free to differ between the two groups β is .406 for females but .328 for males. The difference is rather small. The change in chi-square value of 1.92 (254.61 with 110 d.f. for baseline; 252.69 with 109 d.f. for alternative) with 1 degree of freedom has a nonsignificant p-value .17. This suggests that there is no gender difference on
Figure 5.11. Structural equation model for females and males: the impact of life strain and life events on emotional symptoms (plain for female, N=854; bold for male, N=733)
Table 5.6. Comparison of the impact of life strain and life event on emotional symptom for gender

<table>
<thead>
<tr>
<th>Model</th>
<th>Description</th>
<th>( \beta )</th>
<th>( \chi^2 )</th>
<th>d.f.</th>
<th>( \Delta \chi^2(1) )</th>
<th>p-value for ( \Delta \chi^2(1) )</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>female (N=854)</td>
<td>male (N=733)</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Life strain-&gt; emotional symptom</td>
<td>Baseline</td>
<td>everything set to be equal in both female and male model</td>
<td>.373*</td>
<td>.373*</td>
<td>254.61</td>
<td>110</td>
</tr>
<tr>
<td></td>
<td>Alternative model</td>
<td>( \beta ) free in both female and male model</td>
<td>.406*</td>
<td>.328*</td>
<td>252.69</td>
<td>109</td>
</tr>
<tr>
<td>Life event-&gt; emotional symptom</td>
<td>Baseline</td>
<td>everything set to be equal in both female and male model</td>
<td>.162*</td>
<td>.162*</td>
<td>254.61</td>
<td>110</td>
</tr>
<tr>
<td></td>
<td>Alternative model</td>
<td>( \beta ) free in both female and male model</td>
<td>.177*</td>
<td>.143*</td>
<td>254.11</td>
<td>109</td>
</tr>
</tbody>
</table>

*p<.05
the association between life strain and emotional symptom. Next, the relationship between life event and emotional symptom was tested. With the model parameters set to be equal, the baseline model generated a chi-square=254.61 with 110 degrees of freedom. The common value of $\beta=.162$ is obtained for females and males. When allowing $\beta$ to differ between groups, the chi-square is improved from 254.61 to 254.11 with 109 degrees of freedom. With 1 degree of freedom the difference in chi-square is only .50 which is statistically nonsignificant since $p$-value=.48. Thus, the hypothesis of the differential-exposure perspective that a positive relationship between life event and psychological distress should be stronger for females is rejected. The results do not support gender difference on these associations.

Together with Table 5.7, Figure 5.12 presents the test of age differences on the relationships between life strain, life event, and emotional symptom. Figure 5.12 shows that the direct effect of life event on emotional symptom is significant on all three groups (.183 for age 20-29; .156 for age 30-49; .154 for age 50-64). This finding is in contrast to the prediction of differential-exposure perspective. Similarly, the path between life strain and emotional symptom is also highly significant on all age groups (.371 for age 20-29; .386 for age 30-49; .408 for age 50-64). Parallel to the model comparison procedures performed in Table 5.5, Table 5.7 presents the results of model comparisons on age groups. First, looking at the path between life strain and emotional symptom, the baseline model which constrained all parameters to be equal in three age groups obtained a $\beta=.386$ for each group and a chi-square=357.42 with 178 degrees of freedom. The alternative model which allows the path to differ across the three groups generated $\beta=.387$ for persons aged 20-29, $\beta=.390$ for those 30-49, and $\beta=.367$ for age 50-64, with a chi-square=357.35 with 176 degrees of freedom. The differences are rather trivial with 2 degrees of freedom, the chi-square only improved .07 with
Figure 5.12. Structural equation model for age groups: the impact of life strain and life events on emotional symptoms (plain for aged 20-29, N=482; bold for aged 30-49, N=911; outline for aged 50-64, N=194)
Table 5.7. Comparison of the impact of life strain and life event on emotional symptom for age groups

<table>
<thead>
<tr>
<th>Model</th>
<th>Description</th>
<th>β</th>
<th>Age1</th>
<th>Age2</th>
<th>Age3</th>
<th>χ²</th>
<th>d.f.</th>
<th>Δχ²(2)</th>
<th>p-value for Δχ²(2)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Life strain-&gt; emotional</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>symptom</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Baseline</td>
<td>everything set to be equal in both female and male model</td>
<td>.386*</td>
<td>.386*</td>
<td>.386*</td>
<td></td>
<td>357.42</td>
<td>178</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td>Alternative model</td>
<td>β free in both female and male model</td>
<td>.387*</td>
<td>.390*</td>
<td>.367*</td>
<td></td>
<td>357.35</td>
<td>176</td>
<td>.07</td>
<td>.97</td>
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<td>Life event-&gt; emotional</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>symptom</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Baseline</td>
<td>everything set to be equal in both female and male model</td>
<td>.160*</td>
<td>.160*</td>
<td>.160*</td>
<td></td>
<td>357.42</td>
<td>178</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td>Alternative model</td>
<td>β free in both female and male model</td>
<td>.176*</td>
<td>.154*</td>
<td>.146*</td>
<td></td>
<td>357.20</td>
<td>176</td>
<td>.22</td>
<td>.90</td>
</tr>
</tbody>
</table>

*p<.05
a p-value=.98. The bottom half of Table 5.7 presents the results for path between life event and emotional symptom. Baseline, with everything set to be equal in three groups, has a β=.160 for each group and a chi-square=357.42 with 178 degrees of freedom. The alternative model which allowed β free to be estimated independently in each group obtained a chi-square=357.20 with 176 degrees of freedom (.176 for age 20-29; .154 for age 30-49; .146 for age 50-64). With 2 degrees of freedom, the chi-square only improved .22 (p-value=.90) which means that the alternative model did not significantly improve the fit over the baseline model. In other the baseline model can be regarded as the best fitting approach. This implies that there is no support for age differences for the effect of life event on emotional symptom.

Figure 5.13 and Figure 5.14 consider the potential mediator effect of social support (or social contact) on the associations between life event, life strain, and mental health. Two competing models provide explanations for this mechanism. The mediator model argues that stress will increase support utilization and that increased assistance in turn tends to relieve psychological distress. In contrast, the withdraw model contended that stress may actually tend to erode supportive ties. Because of the stigmatizing or embarrassing nature of stress, individuals may decide not to approach anyone else during stressful times.

After controlling for age, sex and the control variables, the results presented in Figure 5.13 indicate that the arguments of the mediator model are not supported. Both life strain and life event have significant but negative direct effect on social support. The findings run contrary to the prediction of the mediator model which indicates that these two paths should be positive and significant. However, the data also fail to support withdraw model since the paths between life strain, life event and social contact are not significant. In addition, social contact has no significant impact on psychosomatic symptom (β=.01). Generally speaking,
Figure 5.13. The mediator effects of social support and social contact on psychosomatic symptoms (N=1578)
Figure 5.14. The mediator effects of social support and social contact on emotional symptoms (N=1585)

*Significant at .05 level

χ²(108) = 556.29
GFI = .962
AGFI = .940
social contact did not play an important role (mediator or connector) in the model. Social support also failed to contribute any mediator effect on the relationship between life strain and psychosomatic symptom. Although life strain has a direct effect on social support ($\beta = -.096$) and social support has a direct effect on psychosomatic symptom ($\beta = -.065$), both are minimal. The relationship between life strain and psychosomatic symptom remains strong. Thus, social support did not mediate the association. In short, both the mediator and the withdraw models are rejected by these findings.

Figure 5.14 tells the same story as Figure 5.13. First, both life strain and life event have significant negative direct effects ($\beta = -.098$ and $\beta = -.102$ respectively) on social support. This is contrary to the predictions of the mediator model. Neither have significant effect ($\beta = .011$ and $\beta = .006$) on social contact which contradicts the prediction of the withdraw model. Further, both social support and social contact have no significant effect ($\beta = -.052$, $\beta = .027$) on emotional symptom. The direct effects of life strain and life event on emotional symptom are still strong and significant ($\beta = .373$ for life strain; $\beta = .162$ for life event). In other words, neither social support nor social contact play a key role in mediating the associations between stresses and psychological distresses.

As noted earlier, in terms of social support, most literature indicated that gender provides significant differences in social relationships (Troll, 1988; Wright, 1989). Women seem to have more frequent contact with their network members and receive support from multiple sources. There is almost no significant age effect on social support. Most of the studies showed that social relations provide a positive base for people of all ages that help them function under stress (Cantor, 1975; Antonucci, 1985). In an effort to test these arguments, Figure 5.15 to Figure 5.18 examine the gender and age effects on social support. The models tested in Figure 5.15 to Figure 5.18 include marital status, SES, and religion. All
of the direct effects (i.e., all $\gamma$s) of these three exogenous variables on the endogenous variables were estimated although not always presented. Figure 5.15 to Figure 5.18 only present the endogenous part of the whole tested models to simplify interpretation. Since the present study is focused on the impacts of gender and age on the associations among stress, social support, and psychological distress, limiting the presentations to the right side of the whole model will document the significant segment of the examined models.

Figure 5.15 presents the results for females and males simultaneously to show the differences between them. Interesting enough, the results showed that life strain has a significant but negative effect ($\beta=-.119$) on social support for males but not for females ($\beta=-.092$). It means that when under stress, instead of seeking support from others, men tend to withdraw from their social support network. For women, the level of stress did not affect their connection with support system. The results also indicated that life event did not have any direct impact on social support or social contact for both gender groups. Social contact still did not show any influence in the models even after controlling for sex. Social support and social contact did not affect psychosomatic symptom in either the females or the males models. Life strain still has strong direct effect ($\beta=.549$ for females; $\beta=.559$ for males) on psychosomatic symptom after introducing social support. In short, for both gender groups, social support did not function as a mediator on the association between stress and distress.

The other finding in Figure 5.15 which is of some theoretical interests is the correlation between social support and social contact. For males, the correlation coefficient between social support and social contact is .108 which is significant although not too strong. For females, the correlation is insignificant (.042) which means that having more frequent contact with network members does not necessary mean they also have better social support. The finding seems to support the argument of Antonucci and Akiyama (1988) and Leffler,
*Significant at .05 level

Figure 5.15. Structure equation model for females and males: the mediator effects of social support and social contact on psychosomatic symptoms (plain for female, N=848; bold for male, N=730)
Krannich, and Gillespie (1986) that although women had larger intimate networks, these networks more often included conflict. In contrast to women, the larger the social contact network, the higher the social support for men.

Figure 5.16 investigated the differences among age categories. First, the results reflected that social contact, again, is not an important variable in the study of associations between stress, social relations, and psychological distress. Similar to the results from Figure 5.15, social support did not function as a mediator in each age category. Social support did not have significant effect on psychosomatic symptom in each age category although life strain and life event do show some differential impacts on social support across age groups. For persons aged 20-29, long term life strain or short term life event decreases their support systems. Instead of the life event, the long term life strain increases the isolation of those aged 30-49 from their support systems. For persons over age 50, life event exerts a significant negative effect on social support. There is no particular theory can be used to explain the findings. More empirical studies dealing with these issues is necessary before any systematic interpretation can be developed. However, these findings seem to contradict the existing literature.

Figure 5.17 examines the gender difference of the mediator effects of social support and social contact on the relationships between life strain, life event, and emotional symptom. General speaking, Figure 5.17 shows exactly the same pattern as found in Figure 5.15. First, the impact of social contact is trivial in the models. Social support almost does not mediate any direct effect of life strain on emotional symptom. Men, but not women, tend to withdraw from their support system when under stress. Social support is correlated with social contact for males but not for females. To further investigated the gender differences on the association between life strain and social support and between life event and social support,
Figure 5.16. Structural equation model for age groups: the mediator effects of social support and social contact on psychosomatic symptoms (plain for aged 20-29, N=479; bold for aged 30-49, N=960; outline for aged 50-64, N=193)
*Significant at .05 level

Figure 5.17. Structure equation model for females and males: the mediator effects of social support and social contact on emotional symptoms (plain for female, N=853; bold for male, N=732)
model comparison procedures were employed. The upper half of Table 5.8 presents the results of the association between life strain and social support. The baseline model, which stands for the null hypothesis that there is no gender difference, constrained all parameters in both the female and male models to be equal and obtained a chi-square of 500.71 with 203 degrees of freedom. The $\beta (=,.112)$ for each gender group is significant. The alternative model, which assumed a significant gender difference, allowed $\beta$'s to be estimated in each model and generated a chi-square of 500.20 with 202 degrees of freedom. Although the $\beta$'s appear to differ between females and males ($\beta=-.087$ for female; $\beta=-.148$ for male) the change in chi-square with 1 degree of freedom is .51 which is a nonsignificant ($p=.48$). This indicates that the gender difference is not statistically significant. The coefficient for the path between life event and social support leads to the same conclusion. The change in chi-square is .34 with 1 degree of freedom ($p=.56$) indicating that the alternative model does not fit better than the baseline model. In other words, the baseline is the best fitting model and it reflects that there is no significant gender difference for the effect of life event on social support. In sum, the findings are contrary to most of the existing literature which reported significant gender differences in social relationships.

Figure 5.18 presents the most interesting findings in the series of investigation on the mediator effects of social support and social contact. In general, social support and social contact still did not operate as a "mediator" between life strain, life event and emotional symptom since the direct effects of life strain and life event on emotional symptom are still strongly significant for all three age categories. However, for persons aged 20-29, social support seems to work as a "connector" to link life strain to emotional symptom. Figure 5.18 shows that in the model for persons aged 20-29, life strain has a significant direct effect ($\beta=-.206$) on social support and social support has a significant direct effect ($\beta=-.242$) on
<table>
<thead>
<tr>
<th>Model</th>
<th>Description</th>
<th>β</th>
<th>χ²</th>
<th>d.f.</th>
<th>Δχ²(1)</th>
<th>p-value for Δχ²(1)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>female</td>
<td>male</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Life strain -&gt; social</td>
<td>everything equal in female and male</td>
<td>-.112*</td>
<td>-.112*</td>
<td>500.71</td>
<td>203</td>
<td>--</td>
</tr>
<tr>
<td>support Baseline</td>
<td>group</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>β free in both female and male groups</td>
<td>-.087</td>
<td>-.148*</td>
<td>500.70</td>
<td>202</td>
<td>.51</td>
</tr>
<tr>
<td>Life event -&gt; social</td>
<td>everything equal in female and male</td>
<td>-.101</td>
<td>-.101</td>
<td>500.71</td>
<td>203</td>
<td>--</td>
</tr>
<tr>
<td>support Baseline</td>
<td>group</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>β free in both female and male groups</td>
<td>-.103</td>
<td>-.095</td>
<td>500.37</td>
<td>202</td>
<td>.34</td>
</tr>
</tbody>
</table>

*p<.05"
Figure 5.18. Structural equation model for age groups: the mediator effects of social support and social contact on emotional symptoms (plain for aged 20-29, N=482; bold for aged 30-49, N=909; outline for aged 50-64, N=194)

*Significant at .05 level
emotional symptom. In other words, persons aged 20-29 tend to "shrink" their network support system when under stress and these "reduced" support system then provide help to relieve their emotional symptoms. This mechanism, however, did not work for persons aged 30-64. In addition, social contact has a significant positive direct effect on emotional symptom for the 20-29 age group ($\beta=.110$) although not very strong. The theoretical implication for these findings is not yet clear. More studies will be required before any conclusion can be reached. In a word, in contradiction to most of the literature, the results presented in Figure 5.15 to Figure 5.18 show that there is no gender difference in social support but there might be some age differences. The implication of these findings will be discussed in detail in next chapter.

The results presented earlier have shown that social support did not behave as a mediator. But, what about the moderator effect of social support? In other words, did social support have a buffering effect on the association between stress and mental health? In structural equation modeling, moderator effects can not be tested through the use of multiplicative interaction terms to evaluate models containing explanatory variables constructed with multiple indicators. Therefore, the sample must be divided into groups high and low on the moderator variables, and the paths between latent constructs compared for the two groups (Joreskog and Sorbom, 1989; Bollen, 1989). In order to test for the buffering effect of social support, respondents were separated into the two groups depending on whether they were above or below the median on social support. Then, the path coefficients between life strain, life event and mental health were compared for respondents high versus low on social support using the multiple groups comparison option of LISREL VII.

Figure 5.19 presents the test of the buffering effect of social support on the associations between life strain, life event and psychosomatic symptom. After controlling for
Figure 5.19. The moderating effect of social support on psychosomatic symptoms (plain for high support group, N=781; bold for low support group, N=797)

*Significant at .05 level
age, gender and the control variables, the path coefficient between life strain and psychosomatic symptom seems to have little difference between high and low social support groups (β=.575 for high group; β=.565 for low group). The path coefficient between life event and psychosomatic symptom fail to show any substantial difference (β=.028 for high group; β=.048 for low group; both are not significant). Table 5.9 provides the results of the group comparison. The path coefficient between life strain and psychosomatic symptom, β, equals .571 when it is constrained to be the same for both the high and low social support groups. When the path is free to differ between the two groups, β is .564 for high group and .577 for low group. Although the pattern matches the prediction that the association between life strain and psychosomatic symptom should be stronger in low social support groups this difference is rather minimal. Table 5.9 shows that allowing the path to differ between groups only improved the chi-square from 353.81 to 353.75. This reduction in chi-square has a probability of .81 which is nonsignificant. The test of the path coefficient between life event and psychosomatic symptom told exactly the same story. Alternative model which allowed β's to be estimated in both group only improved the chi-square value for .10 with 1 degree of freedom which has a probability of .75. The results indicate that social support did not buffer the relationships between stresses and psychosomatic symptom.

Figure 5.20 shows that the path coefficient between life strain and emotional symptom did differ between high (β=.341) and low (β=.407) social support groups. The pattern also matches the prediction mentioned earlier. In addition, the path coefficient between life event and emotional symptom shows little difference (β=.147 for high group; β=.179 for low group) between groups. The relationship is in the right direction of prediction for buffering effect. However, the results of model comparison summarized in Table 5.10 shows that these differences are statistically nonsignificant. In other words, the buffering effect of social
Table 5.9. Comparison of the paths between life strain, life event and psychosomatic symptom high and low on social support

<table>
<thead>
<tr>
<th>Model</th>
<th>Description</th>
<th>(\beta)</th>
<th>(\chi^2)</th>
<th>d.f.</th>
<th>(\Delta\chi^2(1)) for (\Delta\chi^2(1))</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Life strain-&gt;psychosomatic symptom</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Baseline</td>
<td>everything equal in both high and low social support groups</td>
<td>.571*</td>
<td>.571*</td>
<td>353.81</td>
<td>145</td>
</tr>
<tr>
<td>Alternative model</td>
<td>(\beta) free in both high and low groups</td>
<td>.546*</td>
<td>.577*</td>
<td>353.75</td>
<td>144</td>
</tr>
<tr>
<td><strong>Life event-&gt;psychosomatic symptom</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Baseline</td>
<td>everything equal in both high and low social support groups</td>
<td>.038</td>
<td>.038</td>
<td>353.81</td>
<td>145</td>
</tr>
<tr>
<td>Alternative model</td>
<td>(\beta) free in both high and low groups</td>
<td>.031</td>
<td>.045</td>
<td>353.71</td>
<td>144</td>
</tr>
</tbody>
</table>

*p<.05
Figure 5.20. The moderating effect of social support on emotional symptoms (plain for high support group, N=784; bold for low support group, N=801)
Table 5.10. Comparison of the paths between life strain, life event and emotional symptom high and low on social support

<table>
<thead>
<tr>
<th>Model</th>
<th>Description</th>
<th>β</th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>high</td>
<td>low</td>
<td>χ²</td>
<td>d.f.</td>
<td>Δχ²(1)</td>
<td>p-value</td>
</tr>
<tr>
<td>Life strain→ emotional symptom</td>
<td>everything equal in both high and low social support groups</td>
<td>.377*</td>
<td>.377*</td>
<td>359.71</td>
<td>145</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td>Baseline</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Alternative model</td>
<td>β free in both high and low groups</td>
<td>.344*</td>
<td>.404*</td>
<td>358.53</td>
<td>144</td>
<td>1.18</td>
<td>.28</td>
</tr>
<tr>
<td>Life event→ emotional symptom</td>
<td>everything equal in both high and low social support groups</td>
<td>.160*</td>
<td>.160*</td>
<td>359.71</td>
<td>145</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td>Baseline</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Alternative model</td>
<td>β free in both high and low groups</td>
<td>.141*</td>
<td>.178*</td>
<td>359.10</td>
<td>144</td>
<td>.10</td>
<td>.75</td>
</tr>
</tbody>
</table>

*p<.05
support is not strong enough to reach significant level. For the path between life strain and emotional symptom, baseline which has $\beta=.377$ for both high and low groups generated a chi-square 359.71 with 145 degrees of freedom. The alternative model allowing $\beta$ free to be estimated in two groups obtained a chi-square 358.53 with 144 degrees of freedom. Thus, with 1 degree of freedom, the chi-square value improved 1.18 for the alternative model which assumed a significant buffering effect with a probability of .28. This is not significant. The path between life event and emotional symptom produces an even smaller difference. The alternative model, which allowing $\beta$'s free to differ between groups, only improved the chi-square from 359.71 to 359.10. That is .61 for change in chi-square with 1 degree of freedom which has a nonsignificant probability of .44.

In summary, the results of the investigation on the buffering effect of social support are contrary to most of the literature which reports social support as a buffer to mitigate the negative effects of stressful life events on mental health.
CHAPTER 6
DISCUSSION

The purpose of this chapter is to summarize the results and to consider the implications and limitations of the study. In the first part of this chapter, limitations of the present study are discussed. The next part highlights the basic findings from this study. Finally, specific research questions raised by this study are delineated and their implications are discussed.

Limitations of the Present Study

Prior to discussing the results of the study, several limitations need to be acknowledged. First of all, although causal assumptions were employed in performing the analyses, the findings, in general, only represent covariation among variables. Since cross-sectional data was utilized, the information is more useful in establishing the temporal ordering than the causal processes at work among variables. Second, the present study tried to use a cross-cultural data to examine the theories and hypotheses which are almost totally developed under systematic studies of American society. Unfortunately, the measurements constructed in the present study are not able to exactly match the measures that have been standardized and used in the studies of American society given the data limitation of the SCSIS II. Thus, the findings of the present study, whether consistent with those findings for the American society, might include some measurement bias or measurement error which need to be considered when examining the significance of these generalizations. Third, although the findings show that age did correlate with mental health, there is a question as to whether the relationships observed should be attributed to something other than an aging effect. The literature on aging and the life course has pointed out that it is very difficult to distinguish among aging effects,
cohort effects, period effects, and compositional effects. Particularly, when using cross-sectional data, one cannot rule out the possibility that the age relationships are due to some interaction between period effect, age effect, and cohort effect.

The fourth limitation of the study related to the sample. The sample consisted largely of respondents aged 30 to 49. Although respondents aged 20 to 29 and aged 50 to 64 also included in the data they only represent 42.5 percent of the sample. Those who were younger than twenty years old and those older than sixty-five years old were not included in the SCSIS II. Thus, the findings of the present study are not able to establish a whole life course view of the relationship between age and mental health. This is particularly important given the observed increases in mental health symptoms among the very old. Therefore, there is a need to replicate the findings from this study using samples which include respondents in all age categories. The following discussion is presented with these qualifications in mind.

Summary of Results and Theory

Is being older depressing? The role perspective and adult maturational perspective provide contrasting views regarding the significance and direction of the relationship between age and mental health problems. Marshall (1980) and Pilisuk (1982) in their statement of the role perspective, assert that the process of aging involves major role transitions or role withdrawals. As a result of these role changes, old age was seen as a time of physiological, psychological, and social loss. Thus, one will predict, from the role perspective, that one's psychological well-being is likely to be more positive in early adulthood and to decline with age. The adult maturational perspective (Gove et al., 1989; Erikson, 1982; Ryff, 1985; Levinson, 1978; Gould, 1977; Neugarten, 1977b), on the other hand, contends that as persons age, their ego concerns gradually decline, and they become more focused on the
needs and concerns of others. They become more accepting of life, and less controlled by external events. In a word, one senses with age a growth of maturity with the appearance of greater mastery of self and the outside world. The image of aging derived from the adult maturational perspective suggested that instead of negative, aging is a rather positive process. The results presented in Figure 5.1 showed an increasing tendency of psychosomatic symptom with age. The structural equation model shown on Figure 5.3 also indicated that age has a direct effect ($\gamma=0.143$) on psychosomatic symptom. The findings are consistent with the prediction of role perspective. However, this pattern did not appear on Figure 5.2 and Figure 5.4. Figure 5.2, which investigated the association between age and emotional symptom, showed that there is a roughly U-shaped relationship between age and emotional symptom. This U-shaped pattern is predicted neither by the role perspective nor by the adult maturational perspective. The inconsistent findings in Figure 5.1 and Figure 5.2 imply that it might be necessary to be more specific, at least in the case of Taiwan, when dealing with issues related mental health. Mental health, or psychological well-being, is a very broad concept which has been represented by a number of indicators in many studies. Thus, the inconsistent findings across studies might simply reflect variations in measurement. To clarify these unsettled cases, a more specific and rigid delineation of mental health measures seems necessary. Although the present study found that age has a linear relationship with psychosomatic symptom and holds a curvilinear relationship with emotional symptom of mental health, the relation patterns are rather "flat" compared to those reported on the literature. In other words, the relationships between age and mental health found in the case of Taiwan are not as strong as those found in the studies of American society. One of the speculations that considered by the author is that the situation might reflect differences of ongoing social change patterns. For instance, the social change pace of American society is rather stable, consistent, and
predictable. People in American society are expected to grow old step by step following the aging stages. The effect of social change, therefore, did not provide significant impact on the relationship between age and mental health. In short, this relationship in the American society did not disturb by social change. On the contrary, current Taiwan society is under a rapid social change process. The whole social, political and economic structures of Taiwan are under intensive reform. The impact of the rapid social change process on people in Taiwan must have spread all over the whole Taiwan society. The relationship between age and mental health found in the study of Taiwan which is not as strong as those reported in the studies of American society might because the rapid social change in Taiwan provides some common influence on people in each age stage which cancels out the real relationship between age and mental health. However, the speculation can not be investigated without involving more information about the social change process. It only can be obtained from more studies on the changing Taiwan society.

The other important findings are the significant gender differences in both psychosomatic and emotional symptoms. Table 5.2 and Figure 5.1 to Figure 5.6 all clearly pointed out that women have significantly higher rates of psychosomatic and emotional symptoms than men. The direct group comparison analyses presented in Figure 5.5 and 5.6 provided the evidence that gender differences in psychological distress are statistically significant. Overall this pattern of findings indicated that the role perspective turns out to be the better explanation for the case of Taiwan. This might be because elderly in contemporary Taiwan society face critical challenges which their previous generation have never encountered before due to rapid social change. The elderly in Taiwan are losing their priority, their power, and their guaranteed social status and they are forced to redefine and to readjust their role in a fast modernizing and changing society. These experiences, mostly painful, might increase
their degree of anxiety or feeling of frustration which in turn deepen their psychological
distresses. With regard to the higher rates of distress among women, it might be because
women in today's Taiwan face contrasting demands. On the one hand, they are still supposed
to take care of their children and families. On the other hand, they also have to work to help
economically support their families, especially in urban areas. The pressures from both sides
might result in their higher rates of psychological distresses. However, the explanation for the
finding of U-shaped relationship between age and emotional symptom still remain unknown.
More research focused on this question should be conducted before any definitive conclusions
can be drawn.

In their statement of life event perspective, Kessler and Cleary (1980) contended that
distress is caused by exposure to stressful life experiences. Zautra et al. (1988) also reported
that major negative life events are risk factors for psychological illness. However, according
to the life-strain perspective, it is the chronic stress but not the stress of daily life event which
caused the psychological distress. Pearlin et al. (1981) argued that the life-strain perspective
is a more appropriate explanation in understanding psychological distresses because of the
chronic nature of many life problems. Berkman et al. (1986) and Kaplan et al. (1987) have
found that physical disability and chronic health problems are significantly associated with
depressive symptoms in the general and elderly population. Several interesting findings
contained in Figure 5.7 are worthy of discussion. First, the life-strain perspective turns out to
be the better explanation for the case of Taiwan. It is life strain rather than life event which
has a positive direct effect on psychosomatic symptom. Second, both age and gender have
direct effects on life strain but not on life event. This provides evidence that life strain served
as a mediator for the effects of age and gender on psychosomatic symptom since the direct
effects of age and gender on psychosomatic symptom disappeared after introducing life strain.
Together, the findings can be interpreted that female elderly have higher risk of getting health problems which, in turn, result in higher level of psychosomatic symptom. The associations among age, religion, and life strain might reflect a unique social phenomenon in Chinese society (or maybe the entirely oriental society). The elderly tend to have higher commitment on religion and going to church or temple more frequently. Especially, when the elderly are under bad fortune or bad health these kinds of religious behaviors become more intensive and frequent. This explains why the association between religion and life strain is positive. Figure 5.8 basically tells the same story except that life event also shows a significant direct effect on emotional symptom. This suggests that life event still has some influence on psychological distress, but it might be stronger for specific symptoms. Obviously, more research should be devoted on this issue.

In terms of gender difference in psychological distress, Table 5.4 and 5.6 both showed that there is no gender differences in any association between stress and psychological distress. The impacts of life strain and life event on psychosomatic and emotional symptoms reflect the same pattern for females and males. Thus, the findings run contrary to the differential-exposure perspective which argued that women are more depressed because they are exposed to more stressful experiences. However, the differential-vulnerability perspective was also not supported since a direct test is not available in the present study. This implies that it might be necessary to develop a new perspective which can be used to explain the situation in Taiwan. The results shown in Table 5.5 and 5.7, again, reject the differential-exposure perspective because there is also no age difference in the relationship between life event and psychological distress. Table 5.5 did show significant age differences in the association between life strain and psychosomatic symptom. Persons aged 30-49 have the strongest effect followed by persons aged 50-64. The exact basis for this pattern is still not
clear, even the differential-vulnerability perspective can not be used to interpret this finding. In summary, neither perspective is very good in interpreting the case of Taiwan. Once more, the development a new perspective may be necessary.

Many studies of the stress process are concerned with the relationship between life event, social support and psychological distress. A general consensus is that the deleterious effects of stress appear to be reduced for persons with strong social support systems. There are two competing perspectives which try to interpret the mechanism. Both perspectives argue that social support or social contact play a very important "mediator" role to reduce the impact of stress on psychological distress. Surprisingly, the findings of the present study did not support either the mediator model or the withdraw model. The results presented in Figure 5.13 and Figure 5.14 showed that both social support and social contact did not transmit effects of life strain and life event on mental health. Since the results were obtained from analyzing cross-culture data, one possible explanation is that social support or social contact might function in different way in different cultures. Nevertheless, before drawing this conclusion, the concerns about measurement should be considered first. As mentioned earlier, the measures of social support and social contact constructed in the present study did not exactly parallel to those have been used and reported in literature here in the United States. Did these different findings mean that there are cultural differences of social support or is this pattern attributable to method variation? Before this question can be answered, further research will be needed to clarify this question.

Next, contradictory to much of the literature, the present study found that although women tend to have stronger effect of social support, the differences between females and males are trivial and not significant. While most of literature reported no age difference in social support, this study showed that there may exist age difference in the case of Taiwan.
Again, before drawing any theoretical conclusion, the potential methodological problems should be clarified first.

At last, the present study examined the well-established buffering effect of social support. In contrast to most empirical studies, the results presented in the last two figures and two tables showed no buffering effect for social support. If the methodological problems can be proved as not a major reason for these inconsistent findings, the results of the present study imply that social support may function differently in Taiwan culture. A revised theory dealing with social support issues which addresses the diversity of cultures may need to be developed. Unfortunately, the results obtained by the present study are not able to answer this very important question since the measures of most latent constructs in this study are not necessary corresponding with those have been well-established. The inconsistent findings may only simply reflect the situation of same concepts but different measures. To answer this question, a replication research of this study with exactly the same, or at least comparable, measures of well-established is necessary.

Because the cross-sectional design is the least costly in terms of time and money it has been widely used by social scientists. As noted earlier, the literature on aging and on the life course indicates that it is very difficult to distinguish aging effects, cohort effects, period effects, and compositional effects clearly. The present study used a cross-sectional data to test some causal assumptions which may be confounded with possible period, age, and cohort effects. Longitudinal designs can give a more accurate and complete explanation of the aging process, because they follow the same individuals or groups for a number of years (a panel study). With this design it is possible to observe direct evidence of changes in individuals and groups as they age, either in prospective studies or in retrospective studies.
Contemporary Taiwan society is under an intensive social change process. To assess the effects of social change on people in Taiwan only based on cross-sectional data will, without a doubt, make it difficult to clarify the causal mechanisms. A panel design longitudinal study will be able to solve some of these methodological problems. Currently, sponsored by the NSC (National Science Committee), a multiple-wave cross-sectional social change survey is proceeding in Taiwan. If some component of the survey can be turned into a panel design it would contribute a lot in providing quality data for further empirical studies.

Causal modeling approaches to the understanding of the relationships among multiple independent and dependent variables have become popular in recent years. With the progress of statistical techniques, the computer program LISREL has expanded our ability to consider issues about individual change trajectory over time. As mentioned before, Taiwan is a fast changing society. Individuals in Taiwan experience rapidly changing circumstances which require adjustments. A panel data set which collects information about individuals experiencing this social change process, and is coordinated with advanced causal modeling methods, will help the researchers develop more comprehensive models of changing trajectories of individuals' well-being.
REFERENCES


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