THE RELATIONSHIP BETWEEN STRESS, WORK HOURS AND DEPRESSIVE SYMPTOMS AMONG MIGRANT FACTORY WORKERS IN CHINA

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ABSTRACT

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This study sought to identify the relationship between work hours, stress, and depressive symptoms among migrant factory workers in China (N = 911). Using correlational analyses, the researcher arrived at results that indicated there was a weak but significant positive correlation between working hours and stress levels; a significant moderate relationship between working hours and depression levels, and a significant association between stress levels and depressive symptoms among migrant factory workers in China. Additionally, multiple regression analysis found a significant correlation between depressive symptoms and dorm-living (environmental factor) in the participants. Data indicated social support and gender difference were found to have significant influence in stress levels and depressive symptoms among migrant factory workers in China.

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TABLE OF CONTENTS

	Page
ABSTRACT	i
Acknowledgements	iii
List of Tables	ix
CHAPTER ONE: INTRODUCTION	1
Background	1
Purpose of the Study	2
Research Questions	2
Limitations/Delimitations	3
Definitions	4
Depression	4
Stress	5
Stressful Life Events	5
Migrant Workers	6
Work hours	6
Significance of the Study	7
Theoretical/Conceptual Framework	8
Life Stress and the Onset of Depression	9
Depression	9
Stress and Work	11
Migrant Workers in China	12

Social Support	13
Stress and Prolonged Working Hours	14
Organization of Remaining Chapters	15
Summary	16
CHAPTER TWO: LITERATURE REVIEW	17
Depression	17
Causes of Depression	18
Summary	20
Stress and Depression	20
Short Term Stressful Events and Depression	23
Focused Study on a Single Stressful Event	23
Chronic Stress and Depression	24
Summary	25
Prolonged Work Hours and Depression	25
Summary	27
Depression among migrant factory workers in China	27
Western versus Chinese Concepts of Mental Health and Depression	28
Depression in China	28
Stress and Depression among Migrant Factory Workers in China	29
Prolonged Work Hours and Depression among Migrant-Factory Workers in	China
	32
Summary	34

Summary	35
CHAPTER THREE: METHODS	37
Research Design/Data Analysis	37
Research Hypotheses	39
Population	39
Measures	40
LCU-Life Change Units Scale	40
BDI-Beck Depression Inventory	42
Procedures	44
Informed Consent and Other Ethical Concerns	46
Summary	47
CHAPTER FOUR: RESULTS	48
Descriptive Statistics of Study	48
Preliminary Data Analysis	51
LCU and BDI among Different Work Shifts	51
Findings Related to Hypothesis	75
Findings Related to Research Hypothesis #1	76
Findings Related to Research Hypothesis #2	76
Findings Related to Research Hypothesis #3	77
Summary of Research Findings	77
Summary	79
CHAPTER FIVE: SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS	81

Introduction	81
Conclusions Related to Findings	82
Conclusions Related to Research Hypothesis #1	84
Conclusions Related to Research Hypothesis #2	85
Conclusions Related to Research Hypothesis #3	85
Housing Stressor	87
Social Support	88
Stress/Depression in Female Population	89
Summary	90
Implications	90
Recommendations for Practice	91
Summary	93
Limitations	93
Recommendations for Future Research	95
Summary	98
REFERENCES	100
APPENDIX A: LETTERS TO FACTORY OWNERS	149
APPENDIX B: INFORMED CONSENT FORM	151
APPENDIX C: LIFE CHANGE UNIT SCALE IN CHINESE	153
APPENDIX D: PERSONAL DATA INFORMATION	160
APPENDIX E: LCU SURVEY IN CHINESE	161
APPENDIX F. CHINESE VERSION OF THE RECK DEPRESSION	

IN VENTONT I		164
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List of Tables

	Page
Table 1	50
Table 2	50
Table 3	53
Table 4	55
Table 5	57
Table 6	57
Table 7	57
Table 8	59
Table 9	59
Table 10	61, 67
Table 11	61, 67
Table 12	63, 69
Table 13	63, 69
Table 14	65, 71
Table 15	65, 71
Table 16	73
Table 17	74

CHAPTER ONE: INTRODUCTION

Background

Research supports the premise that there is a strong association between stress and depression. Mazure (1998) provides compelling evidence for an association between adverse life experiences and subsequent major depression (Kessler, 1997; Mazure, 1998). Brain studies link trauma to the malfunction of the neurotransmitters serotonin and norepinephrine in the central nervous system (CNS) of individuals who encounter a very stressful event that may result in depression.

Other literature and empirical research confirm that life stress is often associated with an original painful episode. Not all people with depression report prior stressful events, nor do all people who experience severe stress develop depression. Yet taxing events serve as important markers, if not causes, of depression (Monroe, 1996). It is estimated that about 50% of depressed people remember some recent stressful events prior to the onset of a depressive episode (Brown & Harrris, 1989; Monroe & Simmons, 1992).

Libermann (1989) used the term diathesis to help explain stress-related depression. It is an elegant term for a predisposition that may be a causative factor in the various subtypes of depression. It also relates to vulnerability factors, e.g., cognitive vulnerability, negative social environment, genetic liability, or low socioeconomic status (Abramson, Metalsky, & Alloy, 1989; Monroe & Simmons, 1992; Zuckermann, 1999). Brown, Harris,

and Hepworth (1994) advocated the need to pursue low socioeconomic status (SES) as a specific stressor that may trigger depression. Prolonged working hours is often one of these stressors within a disadvantaged population. The current study sought to identify the relationship between work hours, stress, and depressive symptoms among migrant factory workers in China.

Purpose of the Study

This study investigated the role of prolonged work hours among low SES migrant-factory-workers in China as a factor in cases of stress and depression. It intended to show a direct relationship between work hours and depression among a group of migrant workers in GuongZhou and Shanghai, China. These women and men were subjected to all kinds of harsh and stressful working and living environments (Zhang, 1999). The stress from prolonged work hours was detrimental to their physiological and psychological well-being and in some led to clinical depression. Other researchers have found a strong association between over-work stress and depressive mood in other cases (Iacovidess, 2002; Paykel, 1994; Paykel, 2004).

Research Questions

The following questions were investigated:

- 1. Is there a statistically significant relationship between work hours and levels of stress among migrant-factory workers in China?
- 2. Is there a statistically significant relationship between work hours and depressive

- symptoms among migrant-factory workers in China?
- 3. Is there a statistically significant relationship between levels of stress and depressive symptoms among migrant-factory workers in China?

Limitations/Delimitations

This current study focused only on migrant workers in the two largest cities in China, thus compromising the generalizability of the results. In the face-saving culture of China, the willingness and transparency of Chinese migrant workers to express their depressive feelings and to disclose their stressful experiences were questionable (Kessler, 1997, pp. 193-194). In Chinese culture, private information and personal feelings are not easily disclosed to others. This raises doubts about the value of data gathered from these migrant workers.

One significant limitation of the current study arises from the cultural barriers of the participants towards the survey questions. The instruments used (LCU-Life-Change-Unit and BDI-Beck Depression Inventory) are both designed for Western society. When used in China, cultural and language barriers could arise leading to misinterpretation of questions and may result in misinformation (Dutton et al., 2004; Paniagua, 2000).

This was a cross sectional study; the conclusions could be biased since they were based on observations made only on one time period. In this study, the factors that could have mitigated the outcome of the research were not considered. These factors include any social support received by the workers from local relatives and religious groups.

Because this was retrospective, self–reporting research, information gathered relied

heavily on participants' differential recollection of past stressful-life events that was subjective and might have been biased or inaccurate (Lindeman & Verkasalo, 1995). The problem of confounding prolonged work hours and depression was one of many serious deficiencies in the self-report checklist approach.

Definitions

There are various definitions for depression; depressive symptomatology among migrant factory workers is the focus of this study. The definitions of stress and stressors are very broad; in this study, stress is regarded as a psychological threat. Among various stressors threatening the psychological health of migrant factory workers, prolonged work hours was one of them.

Depression

Depression is a label for a feeling or affective state of dysphoria as experienced by a person (McElroy, Keck, Hudson, Faedda, & Swann, 1992). This affective state may be precipitated by or may occur simultaneously with a set of maladaptive or dysfunctional somatic-motor, cognitive, and physiological responses. Since emotional responses (classical characteristics of depression) and affective responses (feelings of emptiness, hopelessness and anxiousness) are subsumed under the other three categories of responses encompassed in the definition, they were not included as a separate class of responses (Mazure, 2000). Classical behavioral characteristics of depression include withdrawal or reduction in social interaction, retardation of response speed, reduced

verbal output, and increased crying. Cognitive responses include self-reports of perceptions of behavior and emotions, guilt, self-blame, negative distortion of the environment, diurnal mood variations, helplessness, and hopelessness. Physiological responses include loss of appetite, loss of interest in sexual behavior, fatigue, insomnia, and early morning awakening.

Stress

Stress has become a term representing a complex group of concepts. Though no one definition of psychological stress exists, it is frequently discussed in terms of stressors. Antonovsky (1990) explains that stress occurs when the homeostasis of an organism is disturbed by the internal or external "environmental stressors", results in gross impairment of the normal stress response, and creates a state of internal anxiety in the person. In this study, stress is defined as a condition in which the individual perceives a discrepancy between the physical and psychological demands of a situation and his/her own biological, psychological or social systems (Lazarus & Folkman, 1984; Sarafino, 2002).

Stressful Life Events

Adverse life events such as economic or health problems could lead to depression (Brown & Harris, 1989; Monroe & McQuaid, 1994). Sometimes stressful life events could turn into severe events which have been found consistently to predict the onset of depression (Brown & Harris, 1989). Nesse (2000) suggests the possibility of a strong link

in a particular form of stress (e.g. prolonged work hours) with onset of depression in certain individuals.

In this study, long work hours constitute the variable thought to lead to stress. It would be a precipitating life event for the psycho-biological response pattern of depression (Brown, Harris, & Hepworth, 1994). Other factors including social support and gender difference were tested to see if there was significant influence in stress levels and depressive symptoms among migrant factory workers in China.

Migrant Workers

Migrants are those who have moved from another province to find work in different cities of China. There are two types of migrants: Hukou migrants (migrants with local residency rights) and non-Hukou migrants (migrants without local residency rights). Hokou guarantees residents social benefits (e.g. medical benefit, free public facilities and free social services), and free education for their children.

Work hours

China's labor laws guarantee workers an 8-hour workday, a 44-hour workweek, and at least one day off per week. If an employer cannot follow the stipulations of this law due to special circumstances, other arrangements on work and rest could be accepted with the approval by labor administrative departments. Disregarding the labor laws, majority of migrant workers average 11 to 12 hours work per day and do not have weekends off (Zhou, 1997).

Significance of the Study

In a 2002 report issued by the National Institute of Mental Health, it was estimated that 20 million Americans experience depression. It is so widespread that it is considered the common cold of psychiatric disturbances (Burns, 1991). Because depression has affected such a vast number of people, any insight that can improve treatment will be considered very beneficial. Treating depression is central to allowing an individual to gain relief from many other problems, including cognitive and physical problems (Beck, Rush, Shaw, & Emery, 1979). A recent study indicates that functional gastrointestinal (GI) disorders are associated with stress and depression (Kovacs, 1995).

Over the years, books and research articles on stress and depression among Westerners have proliferated. However, very few authors have studied stress related depression among Chinese, let alone among Chinese migrant-workers. Work-stress is one of the reasons for the increase of depression among migrant workers in China (Sparks, Fried, Cooper, & Shirom, 1997).

According to a recent survey, 41% of China's Gross National Product comes from manufactured goods. The need of quick delivery to customers demands a turn-around time of only 90 days from the order to the finished product. This situation forces migrant workers to work overtime and thus creates overwhelming stress for them (Brown & O'Rourke, 2003). In general, the Chinese work very long hours with little rest, often more than 11 hours a day, six or seven days a week, for weeks at a time. Some factories worked their employees up to 274 hours a month during the first half of 2006 (Burtynsky, 2007). The laborers live in cramped cement-block dormitories, some even up to twenty to

a room without privacy.

Throughout cities in China, many migrant workers commit or attempt suicide because of overwhelming stress (Hong & Li, 2007). Long working hours and fatigue could be the major factors that push these migrant workers psychologically off the edge. Many migrant workers experience stress and burnout in their demanding circumstances. This process leads to a further deterioration of their physical, social, and spiritual health, as well as their productivity. Yet, few studies have been conducted in this area to alert factory owners and management to take precautionary measures to prevent further tragedies among migrant workers.

Living in a foreign setting, away from their familiar environment, migrant workers need to raise their awareness of the possibility of slipping into depression. They need to have a better understanding of how long working-hours can elevate their stress and eventually lead to depression. If this study can help to establish a clear correlation between long working hours and depressive symptoms, factory owners and managers may reconsider the work-hour arrangement in their factories.

Theoretical/Conceptual Framework

The causes of depression could be the results of both genetic and environmental factors. Chronic stressors, e.g., prolonged work hours, marital conflicts and poor living condition, have the potential to substantially increase risk of depression and stress for individuals. As aliens working in different cities in China, migrant workers are subjected to chronic stress from work and relocation adjustment which may lead to depression.

Life Stress and the Onset of Depression

Research indicates that social environment, especially lower socioeconomic status (SES) might contribute to the onset of depression. Literature in the past twenty years suggested that life stress commonly appears prior to the onset of depression (Mazure, 1998). The empirical findings for the most part support clinical impressions of the relation of stressors to depression.

Literature on SES offers strong support that low SES individuals may experience more stressful life events, leading to the onset of depression (Dohrenwend, 2000).

However, other factors (coping skills, social supports, genetic predisposition, and prior episodes of depression) play important roles in the response to stress and consequent depression. Recent studies found that there is an inverse linear association between SES and depressive symptoms. Lower SES seems to correlate with higher depressive symptomatology (Kohn, Dohrenwend, & Mirotznik, 1998). This phenomenon is more prominent among women than men (Dohrenwend et al., 1992). Brown and Morgan (1994) advocate the need to pursue the specificity of severe event effects and to find the particular type of stressor that may trigger depression. "Prolonged-work-hours" is one of the stressors.

Depression

In order to understand the role that SES plays in depression, it is pivotal to have a clear understanding of the construct of depression and the dynamic nature of this disorder.

The earlier research described depression as a syndrome of sadness without reason

(Monroe & Handjiyannakis, 2002). Different terms, like excessive depression, unjustified depression and depression disproportionate to causative factors, were used to further explain this type of affective disorder (Jackson, 1986). In other words, according to these researchers, onset of depression could be largely independent of external influences or social circumstances. This is an endogenous subtype of depression (Kraepelin, 1921). One example of endogenous depression is biologically based depression. It is autonomous, and not dependent on any environmental circumstances. Numerous studies were carried out to investigate the endogenous subtype of depression. This research further refined its classification into endogenous-reactive, neurotic-psychotic, and endogenous-neurotic depression. The term endogenous is also used to describe depressive symptoms, such as psychomotor retardation and un-reactive mood (Rush & Weissenburger, 1994). Another type of depression is the non-endogenous or reactive form of depression that arises from problematic social circumstances (Jackson, 1986).

There are different degrees of depressive disorder, major depression, dysthymia - a mild but persistent type of depressive feeling, and bipolar disorder, a drastic change of mood and cognition, alternating between periods of depression and mania or hypomania. Because of the existence of various definitions for depression, clinicians could not agree on a universal procedure for treating it. There are basically two approaches in treating depression: medication or medical treatments, and non-pharmacological remedies or psychotherapies including interpersonal therapy, cognitive therapy, and behavioral activation (Nathan & Gorman, 2008). One of the problems with depressed patients is that the majority of them do not seek help, even though depression is considered to be the

most treatable mental illness. A very effective treatment for depression is a combination of medication and psychotherapy. The recovery rate for depressed patients is 80%, if they receive professional help. Depression, if untreated, will contribute to a low quality of life (Langa, Valenstein, Fendrick, Kabeto, & Vijan, 2004).

Stress and Work

Studies clearly establish an association between work-stressors and a psychological (emotional) reaction (Jackson & Schuler, 1985; Netemeyer et al., 1990; Spector, 1998). Work related stressors, including demands for too much work in too little time, irreconcilable conflicts, and unclear or unpredictable demands, are all sociopsychological stressors (Kahn, 1964; Netemeyer, Boles, & McMurrian 1996), which can lead to psychosomatic health problems and depression (Jamal, 1999). The impacts of these role stressors seem to transcend all cultures. People from different races and ethnic backgrounds can identify the effects of these stressors within their own cultural context (Peterson et al, 1995). For example, work-related stressors correlate positively with intention to quit and negatively with job satisfaction (Lu et al., 1999). There are exceptional cases in different cultural context. In developed countries, overload is negatively related to satisfaction, but it is viewed positively among workers in many under-developed countries because of over-time pay (Jamal, 1999). If over-time work yields increased income for factory-workers in China, then long work hours may not be an issue (Kurz 2002; London et al., 2002; Milkie et al. 2004).

In spite of some differences, studies generally find that relationships between

some stressors might still be true across national cultures. For example, studies across all cultures indicate that employed women are less depressed than unemployed women (Perry-Jenkins et al., 2000). Also, recent research implies that there have been major shifts in the demographic composition of the world's workforce, with an increase in older workers, women, and dual-earners in one family. Another significant trend is the growth in cultural diversity (Kandola & Fullerton, 1994).

Migrant Workers in China

Migrants, whom we call "floating population", are in danger of being marginalized in China's rush to modernize and urbanize. A recent survey found that 140 million Chinese citizens are working and living in places other than their hometowns. That is more than one-tenth of China's population. Migrants are not considered permanent residents of the city in which they work, but rather are registered (Hukou) residents with no legal or social rights or privileges. The Hukou system was created to stop labor mobilization and to foster a cheap labor market for China (State Labor Council, 2001). These migrant workers are excluded from urban political, cultural, educational, and social benefits; as a result, they are essentially isolated in factory communities or industrial complexes (Young, 2005). Without a work permit, they cannot work in a city other than their own town.

If migrant workers were to purchase a residency and hold a stable job for more than a year, they and their family members might have hope to obtain urban Hukou and become permanent residents. Until they become permanent residents, their children

cannot attend public schools, nor can they receive any social benefits from the local government. Therefore, it is the dream of many migrant-workers to save up and purchase property in order to begin the process of naturalization. For this reason, they welcome overtime work. In these cases, there might not be a positive relationship between long hours of work and depression among these migrant-workers in China. Parents who leave their children in their native place dream of re-uniting with their family, once permanent residency is established (Mozur, 2007).

Social Support

Research suggests that specific events consisting of changes in social relationships may trigger the onset of depression (Barney et al. 1991). The term "social support" means that a person is regarded as important in the eyes of others and will be the recipient of care, love, respect, empathy, affection, communication and help (Mirowsky & Ross, 1989). Throughout one's life, social support seems to fluctuate according to the stage of life and situational factors of the individual (Olsen, Iversen, & Sabroe 1991). Social support serves as a buffer against stressful events (Lin & Light, 1985; Thoit, 1984). Changes in social support, brought about by relocation can affect mental well-being (Olsen et al., 1991). Studies show that higher social support is associated with lower level of psychological distress and depression (Hagerty, Bonnie, & Williams, 1999).

In a study of HIV patients, Metts, Manns and Kruzic (1996) found that, with social support, they experience lower levels of depression over time. On the other hand, patients who lack or lose social support seem to suffer more emotional and psychical

deleterious effects (Kimberly & Serovich, 1996). Gradually they undergo a lower sense of social acceptance and self-esteem, leading to a decline in overall well-being. The diminution or loss of social support occurs to migrant workers when they move away from home to work in other cities.

Another category that evokes stress is social adjustment, particularly adjusting to urban life and separation from family and friends. Immigrant workers from rural areas of China are prone to stress due to the transitional nature of urban life. Because of their lower social status, the urbanites have negative attitudes towards them (Zhu & Zhang, 2006). Finally, there are financial pressures of supporting oneself and one's family back home. Many migrant workers have to send money home to support their elderly parents and/or their children whom they left behind (Wan, 1995).

Stress and Prolonged Working Hours

Research also indicates that long-hour work schedules have been particularly harmful to the relationship between married couples (Coltrane, 2000; Simon, 1990; Kingston & Nock, 1987; Staines & Pleck, 1983). Research shows the relationship between depression and work-stress; they correlate positively with anxiety, continuance commitment, and intention to leave, and negatively with affective commitment. Studies also show that employees involved with weekend work and prolonged work hours reported significantly higher emotional exhaustion, job stress, and psychosomatic health problems (Sparks, Cooper, Fried, & Shirom, 1997). Lacking sufficient sleep, long hours on the job lead to Excessive Daytime Sleepiness (EDS) in the workplace and can result in

accidents, absenteeism, reduced productivity, and impaired personal or professional life (Doi & Minowa, 2003). Employees who work long hours have been found to be more prone to poor lifestyle habits, such as heavy smoking, inadequate diet, lack of exercise (e.g. Maruyama, Kohno, & Morimoto, 1995), and behaviors that can lead to health problems. Another growing concern is the effect of prolonged exposure to the increasing number of chemicals used in industry for employees working prolonged hours.

This study focused on the role of prolonged work hours in depression within the context of low SES migrant-factory-workers in China. Prolonged work hours may not be an acute life stressor, but it is a constant and chronic stressful environment (Mazure, 1998). Prolonged work hours could be a daily stressor, an important factor in depression among economically disadvantaged women (Ross, 2000). This study focused on prolonged-work-hour-stress among low SES migrant workers in China and their depressive symptoms.

Organization of Remaining Chapters

The objective of this chapter has been to provide a general overview of the conceptual and empirical literature on the relationship of stressful events, specifically focusing on prolonged work hours, and depression in a group of migrant workers in China. This chapter has briefly reviewed findings from different research studies about the topic. The following chapters will narrow the scope of the study to argue that a stressful life event in terms of prolonged work hours is strongly associated with depressive symptoms and depression in individuals. Limitations of this study will be

acknowledged and promising directions for future research will be suggested.

Summary

Research shows that there is a definite association between stressful events and depression (Joober, Sengupta, Schmitz, Zalsman, & Mann, 2007). Studies find that a triallelic serotonin transporter gene promoter region (5-HTTLPR) polymorphism is closely associated with stressful life events and severe depression. In other words, depression is sensitive to stressful events Depression has been correlated with stress including economic difficulties, family problems, lacking of social support, adjustment issues, poor working environment, and long working-hours.

Depression carries a strong social stigma in China. To admit that one has depression or any mental illness would be quite impossible in the face-saving culture of China. The majority of migrant workers are not willing to seek treatment for depression, resulting in work-disability and loss of productivity (Kessler, Barber, Birnbaum, & Frank, 1999).

CHAPTER TWO: LITERATURE REVIEW

The current study investigated the correlation between stress/depressive symptoms and working hours among migrant factory workers in China. Additionally, this study sought to identify the relation between levels of stress and depressive symptoms in the sample population. This chapter reviews the literature on the causes of depression, particularly work-stress related depression among factory workers in China.

Depression

Depression is the leading cause of disability worldwide, despite the fact that it often goes undetected and untreated (World Health Organization, 1996). The National Institute of Health (2007) reported that 18.8 million adult Americans are affected by depression each year. Kessler (1994) reported that 17% of adults in the United States will experience at least one episode of major depression during their lives. It is estimated that by the year 2020, depression will become the second most serious disorder in the world (Murray & Lopez, 1996). Depression is also associated with attempted suicide, and 60% of suicide victims have significant depressive syndromes (Isacsson, 2000; Lonnqvist, 2000). Unrecognized and untreated depression is associated with loss of work time, poorer intimate relationships, less satisfying social interaction, disability days, physical illness, and more clinical visits (Friedman & Katz, 1988).

According to an Employee Assistance Professionals Association survey in 1996, depression ranks third among the top workplace ailments, resulting in medical costs, lost

productivity, and other serious problems. NIMH (2007) reported depression costs the United States more than \$40 billion annually due to absenteeism from work, lost productivity, and medical costs. It is estimated that by the year 2020, depression will become the second most serious disorder in the world (Murray & Lopez, 1996).

Causes of Depression

Research indicates that depression is found even at a very early age (Klerman & Weissman, 1989). Among the reported cases of depression in the United States, females are twice as likely to experience depression as does the male population (Nolen-Hoeksema, 1995; Nolen-Hoeksema & Girgus, 1994). There is increasing evidence to suggest that the prevalence of depression among adolescent females increases with age (Hamilton & Jensvold, 1995).

Regarding the reported rate of female depression, Nolen-Heksema (1995) concluded that there is no convincing evidence that a higher rate of depression among females is caused by hormonal changes as is commonly believed. However, Kendall's latest research seems to indicate that hormones, especially the amino acid neurotransmitter glutamate, may play a central role in the neurobiology of depression (Kendall, Whittington, & Pilling, 2005). Stoppard and Paisley (1987) attributed gender stereotyping and resulting life events to depressive risk among women.

Blazer (1996) found that a history of depression was highly associated with current depression. Monroe (1996) advocated that there was a strong tie between adult depression and past childhood trauma. The vast majority of depressive events in adults

are recurrences of past episodes. According to Kessler and Magee (1994), a history of depression is the most important among all risk factors. The experience of depression by individuals in their early twenties will most likely reoccur in mid-life years (Hankin et al., 1998). However, the question whether prior depression serves as a predictor for future depression is yet to be proven. Currently, most research points to a strong association between past and future depression (American Psychiatric Association, 2000), and failure to take the history of depression as a control variable may lead to serious bias in estimating the short-term effects of stress (Kessler, 1997).

People with a history of depression tend to have poor interpersonal relationships, a major stressor that may lead to deeper depression (Frank et al., 1994). One of the reasons for this problem is a personality change in depressed individuals. Gazzaniga (2002) alludes to the fact that depression may cause damage to the executive functions of the brain, leading to a personality change, e.g. inhibition, irritability, egocentricity, loss of awareness, frustration, anxiety, and anger.

The National Institute of Mental Health (1987) reported that another important factor for triggering the onset of depression is a socio-economic environmental factor.

This report indicates that less favorable economic and social opportunities are the main factors contributing to a higher depression rate in females than in males. Since then, there has been intense focus on the study of social environmental stressors and their implications for depression (Brown & Harris, 1989; Cronkite & Moos, 1995; Hammen, 2001; Monroe & Simmons, 1991). Paykel (2001) alluded to the fact that sociodemographic factors in depressed individuals including age, gender, education or marital

status, etc., can influence treatment-outcome.

Related to issues of social economic factors in depression, cognitive theorists suggest that depression is, in part, a result of feeling helpless in the face of stress. Kendall and his colleagues (2005) termed that as reactive depression, an interpretation of and reaction to environmental stressors. This may be a result of learned helplessness (Abramson, Seligman, & Teasdale, 1978). According to cognitive theorists, learned helplessness is prompted by automatic negative cognitive evaluations of the event, not the event itself (Abramson, Alloy, & Hankin, 2002; Beck, 1987; Clark, Beck, & Alford, 1999). Seligman (1984) views learned helplessness as a psychological fear of losing control of external events based on past experiences.

Summary

Depression is a serious psychological disorder that affects all ages. The causes of depression may include family history, genetic vulnerability, developmental events, psychological events, physiological stressors, and personality traits. Cognitive theorists point out that maladaptive thinking in depressed individuals is the key reason for the onset of depression. Thus, depression has much to do with a person's distorted internal appraisal of external events.

Stress and Depression

As to the onset of both acute and chronic depression, studies indicate that both acute and chronic stressors are associated with depression in adults and that their effects

are cumulative (Ensel & Lin, 1993). For acute life events, both recent (precipitating) ones and those more distant (incubating) are statistically significant in provoking depression (Bebbington & MacCarthy, 1993). Most depressive episodes are precipitated by acute or severe stressors e.g. interpersonal conflicts or stressful life events. Research suggests that stressors may be more common in adult women than in men (Bebbington, Brugha, & MacCarthy, 1988).

Even though the impact of these acute stressors tends to dissipate with the passage of time, early trauma can predispose a person to developing depression later on (Coyne & Delongis, 1986). This observation coincides with Freudian concepts of the psychodynamic theory of persons experiencing loss through adult trauma. In this case, they re-experience an earlier trauma and become depressed. Seligman and Garber (1975) proposed that people become depressed when they experience recurrent failures or stressors they believe they cannot control.

Research finds that chronic stressors, such as marital conflicts or work stress, are strongly associated with depression in adults (Phelan, Bromet, & Dew, 1991). Chronic stressors seem to have a greater and longer impact on depression than do acute events (McGonagle & Kessler, 1990). When a person feels trapped in a negative situation for a long period of time and consistently attributes problems to some personal flaws, he or she will likely experience low self-esteem. According to cognitive theory, a distorted interpretation of one's environment leads to stuck patterns of negative thought and behavior (Beck, 1967).

In the 1950s, two types of experiments addressed the possible relationship

between stress and depression. One concluded that stress appears to cause depression in animals (Suomi, 1991). Another group of researchers devoted their time to find out if there is a definite link between certain stressors and depression (Baker, 1998).

Researchers found they could only manipulate stress mediators rather than the stress itself. Thus, both groups failed to provide sufficient evidence to conclude that stress has a significant impact on depression. Because of these barriers, most of the evidence of stressful life events on depression comes from non-experimental research.

Most non-experimental research supports the notion that there seems to be strong evidence indicating that major episodes of depression are usually preceded by some severe stressful life events (Hirschfeld & Shea, 1992). This is called the dose-response relationship. Stronger depression is usually associated with more severe life events (Ormel, Neeleman, Wiersma, 2001).

In the study of stressful events, Williamson (1995) suggested that there are two types of such events: self imposed and others/nature imposed. According to Williamson, there is more evidence pointing at the relationship between self-imposed stress and depression than at others-imposed stressful incidents (Williamson et al, 1995). Aseltine and Kessler (1993) suggested that stressful life events imposed by others or by nature could have a direct effect on an individual's psychological well-being. Job loss due to economic conditions, natural disasters or involvement in a fatal traffic accident where others are at fault could be examples of others/nature imposed stressful events (Aseltine & Kessler, 1993; Umberson, 2004).

Hammen (1991) reported the bidirectional effects of stress and depression. Cohen

(1988) alluded to the fact that current depression can trigger memories of past stressful life events and thus intensifies stress for individuals. Kessler and Magee (1994) also found that persons with history of depression tend to have experienced more stressful events in their lifetime.

Short Term Stressful Events and Depression

In the past two decades, a retrospective experiment was used by most of the researchers to investigate the relationship between stress and depression (Holahan & Moos, 1990; Kendler et al, 1995; Lloyd, 1980). Because most of these studies were retrospective in nature, individuals may have problems recalling details of stressful life events and their impact from the distant past (Lewinsohn, 1988). Due to the above mentioned problems, research on stress and depression relationship focused more on the short-term stressful events, those not older than a year. Informants and archival records are also used to secure a more accurate report of past stressful life events. These studies compare scores on an aggregate stressful life-event scale between depressed and non-depressed individuals in their response to certain stressors (Dohrenwend et al., 1995).

Focused Study on a Single Stressful Event

Recent studies try to single out each stressful event, such as divorce (Aseltine & Kessler, 1993), unemployment (Turner, 1995), and widowhood (Umberson, 1992), to avoid confounding effects on outcomes. The basic approach of these studies is to compare two sample populations: those exposed to certain stressful events with a non-

exposed group to see if there are mediating effects of stress on the overall relationship between event and depression. For example, gender difference is revealed through widowhood in the above-mentioned study. Higher level of stress and greater manifestation of depressive symptoms are recorded in males than in females when their spouse passes away. In order to avoid a third factor effect, there needs to be a well designed control group to screen out possible confounding variables.

Chronic Stress and Depression

In the past decade, researchers on stress and depression have shifted the focus of their studies from single stressful life events to chronic stress in individuals. A multitude of studies pinpointed the relationship between chronic stress induced by stressful events of the depressed person and depression (Brugha, 1990; Monroe, 1992). Marital conflict is found to be one of the most salient chronic stressful events in depressed persons (Beach, 1990). These studies show strong evidence of chronic stress as a mediator of depression (McGonagle & Kessler, 1990).

Reports show that people with chronic depression are very likely to have problems in one or more core areas of their lives. For instance, when a person is in financial stress, the loss of a job becomes harder to bear and may push the individual to depression (Umberson, 1992). In these studies, stressful life events and chronic difficulties are strong predictors of slow recovery from depression (Brown & Moran, 1994). Due to failure in recollection, it is difficult to determine the causal order of chronic stressful events on depression. However, research may focus on stresses that can be

assumed to have occurred randomly with respect to other risk factors, and matched comparison can be used to make causal inferences about long term stress effects.

Summary

Different stressors affect people differently in relation to onset of depression.

Research shows acute and chronic stressors are associated with acute and chronic depression. However, the impact of chronic stressors last longer than acute stressors in depressed individuals. Studies show that self-imposed stress is associated with higher depressive symptoms compared to other/nature imposed stress.

One of the problems in the research of stressful events on depression is the accuracy of a depressed individual's accurate recollection of past events. To address this issue, researchers only focus on the short-term stressful events, not over a year earlier. Because of the above-mentioned reason, it is difficult to gauge long term chronic stress effects on depression.

Prolonged Work Hours and Depression

Occupational stress and its negative impact on workers have reached epidemic proportions in all industrial countries around the world (Baum & Posluszny, 1999; Fink, 2000). The association of depression with chronic stress of prolonged working hours has been reported in previous studies (O'Hara & Swain, 1996). In a study of adult-migrant workers, prolonged working hours, poor housing and poverty were strongly associated with depression (Husain, 2000). Prolonged working hours, a chronic stressor, could affect

physical and psychological health as well as life expectancy and the marital satisfaction of workers (Fletcher, 1996). Employees involved in weekend work reported significantly higher emotional exhaustion, job stress, and psychosomatic health problems than employees not thus involved. Insufficient sleep and extended working hours may lead to Excessive Daytime Sleepiness (EDS) in the workplace that could result in accidents, absenteeism, reduced productivity, and an impaired personal or professional life (Doi & Minowa, 2003). Similarly, employees on non-standard work shifts reported significantly higher burnout, emotional exhaustion, job-stress, and health problems than did employees on a fixed day shift.

Overall, recent research on the changes in work-time schedules shows that prolonged work hours and work shifts have detrimental effects on employee wellbeing (Lu, 1999). However, most research has focused on only certain health outcomes, in particular mental health and cardiovascular disorders (Sparks et al., 1997). The literature on compressed work-time systems suggests that prolonged work shifts (9-12 hours) should be avoided to minimize risk to safety and health for employees. Where extended work shift schedules are to be implemented, these must be carefully evaluated and appropriate precautions taken to reduce work overload and environmental exposure to chemicals and other hazards (Rosa, 1995).

Hoel and Cooper (2000) noted that after prolonged work hours, managers/supervisors maybe in danger of displaying a bullying management style with subordinates. This study reported a case study in the United Kingdom where 74.7% employees reported being victims of bullying by their superiors who worked prolonged

work hours (Hoel & Cooper, 2000). The bullying management style may create health problems for employees including psychosomatic stress symptoms, muscular-skeletal symptoms, anxiety, and depression (Hoel, Rayner, & Cooper, 1999). More studies need to be carried out to address the impact of negative management styles to subordinates' health (Yukl, 1994).

Summary

Studies show a strong association between work stress and depression. Research shows that depression is prevalent in the workplace and has a significant impact on workers' occupational functioning. Studies indicate that prolonged work hours may result in depression among workers.

Depression among migrant factory workers in China

The present paper focuses on research addressing occupational health and workers' well-being in China. According to DSM-IV, adjustment disorder with depressed mood is a diagnostic category used to describe a depression that occurs after a major psychosocial stressor. Moving away from home is a major psychosocial stressor for rural migrant workers (Xu, 2000). Leaving their familiar environments, migrant workers are faced with hostile and harsh reality in foreign cities. Long hours of work combined with relocation adjustments push them to despair.

Western versus Chinese Concepts of Mental Health and Depression

There are three criteria for measuring mental hygiene in the West: feelings of self-worth, satisfaction with roles in life, and positive relationships with others (Ridenour, 1961). According to the Global Assessment of Function Scale of the Diagnostic and Statistical Manual of Mental Disorder IV (American Psychiatric Association, 2000), to be mentally healthy is to have superior functioning in a wide range of activities. Unlike in the West, mental health concepts in China are shaped by traditional religious teachings of Taoism. Embracing adversity and focusing on harmony with the environment are keys to psychological well-being (Ying, 1995; Yip, 2002). Furthermore, the Chinese believe that the ability to endure hardship is more important than personal empowerment and achievements (Cheng, 1997; Cheung, 1997; Yang, 1993).

Instead of changing an adverse social environment, the Taoist concept advocates accepting the oppressive predicament as a law of nature. Rather than struggling with changes in life, those Chinese influenced by Taoism prefer to endure the changing process of nature (Brandon, 1976; Cheng, 1997; Chiu, 1992; Yip, 1999). By turning their cognitive interpretation of stressful events to positive thinking, these Taoist Chinese can better cope with problems and stressful events and are thus less likely to develop depression.

Depression in China

Compared to other countries, China has a lower prevalence of mental disorders (World Health Organization, 2004). Zhang and his colleagues found that in China, mental

healthcare only accounted for a very small proportion of the government healthcare budget, which was 2.3% in 2001 (Shi, Cui, Su & Zhang, 2003). Among all mental disorders, Hu (2004) points out that depression is the second largest contributor to health problems in mainland China. In the year 2000, it was estimated that 14.2 million people had major depression (Hu, 2004).

Studies show that the prevalence of anxiety and depressive disorders in patients with somatic diseases seems to be much higher than that of the general population (Parker, Gladstone, & Chee, 2001). Research indicates that psychosomatic syndromes and psychomotor retardation are positively correlated with the degree and onset of depression (Rush & Weissenburger, 1994). There is a strong association of decreased activity in the left prefrontal cortex and depression. As a result, a depressed individual is less motivated to get involved in daily activities (Sutton & Davidson, 1997). Because the majority of general hospitals in China do not have a specialized department for psychiatric and psychological disorders, they usually do not provide diagnosis and treatment to patients with mental disorders, such as anxiety and depression. Physical complaints are more socially acceptable than those related to emotional distress (Parker, Cheah, & Roy, 2001). Patients might deny their mental disorders or not seek mental health care because of the stigma of psychiatric or psychological diseases (Parker, Gladstone, & Chee, 2001).

Stress and Depression among Migrant Factory Workers in China

The present paper focuses on research addressing occupational health and workers'

well-being in China. According to DSM-IV, adjustment disorder with depressed mood is a diagnostic category used to describe a depression that occurs after a major psychosocial stressor. Moving away from home is a major psychosocial stressor for rural migrant workers (Xu, 2000). Leaving their familiar environments, migrant workers are faced with hostile and harsh reality in foreign cities. Long hours of work combined with relocation adjustments push them to despair.

Sparks, Cooper, Fried, and Shirom (1997) suggest that employers can, to some extent, compensate for high job insecurity and prolonged work hours by providing other benefits such as training and self-development opportunities, greater respect, and adequate pay. In China, the compensation comes in the form of overtime pay and free dormitory room and board. In order to alleviate feelings of uncertainty and insecurity, open communication needs to be encouraged between managers and employees (Cameron, Freeman, & Mishra, 1993).

Contrary to this practice, the management style in China is very much top-down; there is very little communication between factory owners and migrant workers. In an investigation of organizational management style, Beehr and Gupta (1987) found greater levels of perceived stressors (under-utilization of skills and job overload) for employees in a traditional organization compared to those working under a more democratic management style. Lack of communication with superiors may create stress and uncertainty for migrant workers.

In this fast growing economy, competition between China and other industrial nations is increasing (Thurow, 1993), making management of factories in China

especially challenging (Whetten & Cameron, 1995). This situation, together with the constant changes taking place in government policies regarding factory operation, could result in managers being stressed out and the negative effects passing down to migrant workers. Burke (1988) maintains that without proper training, managers and supervisors could be affected psychologically under stress.

Ganster, Schaubroeck, Sime, and Mayes (1990) found that when under pressure, supervisors with Type "A" personality may take out their frustration on their subordinates. For example, in a case study done on 157 middle managers of a UK building society, more than one-third reported serious psychological problems (Cartwright & Cooper, 1993). Stressed out managers who display an inconsiderate management style may contribute to migrant workers' reports of increased depression (Buck, 1972).

There are other stressors surrounding migrant factory workers, such as marriage and family issues. The majority of the migrant-factory workers are females, young single women who leave their rural villages to work in urban factories for a few years before returning to get married in their hometown (Zhang, 1999). The parental pressure to marry upward on the social scale creates tremendous stress among single female migrant workers (Tan, 2000).

Some migrant workers have to leave their children in their hometown to be cared for by grandparents. Because their village may be several days' travel by train and bus, workers from the hinterland usually go back home only once a year, or at the most, four times a year (Wells, 2003). Sometimes, because of their work situation, married couples have to live separately in different cities for many years. The situation is known as "the

triangle family" because members of the family are located in three different places (Yardly, 2004). For female migrant workers, the forced separation from children and spouse results in tremendous chronic stress that may lead to depression.

Another stress that migrant workers have to face is social discrimination. Rural migrants are held responsible for crowding, crime, and health problems. Women migrant laborers are often easily deceived and subject to abuse and sexual harassment (Sun, 2004; Tan, 2000). They are also blamed for engaging in prostitution (Chao, 2003; Ho, 1999; Xu, 2000), conducting extramarital affairs with local men, and destabilizing marriages (Sun, 2004; Tan, 2000). Brown (2000) points out that personal defeat and humiliation are reasons for depression. Subject to social discrimination, migrant factory workers are under tremendous stress and humiliation which may cause onset of depression for individuals.

Away from their previously learned support systems, these migrant workers lack the resources and support to survive the vigorous demands of factory work. Adding to their stress, migrant workers need to adjust themselves to individuals from differing cultures (Giovanni, 1996). Turner, Wheaton, and Lloyd (1995) point out that individuals experiencing relatively low levels of coping resource (e.g., social support) over a period of time may suffer the cumulative effects of depression, especially if accompanied by chronic exposure to negative life events or stress.

Prolonged Work Hours and Depression among Migrant-Factory Workers in China

In the past three decades, China's manufacturing industries have taken a giant

leap to become the world's workshop, turning raw materials into an ocean of consumer goods. Migrant workers are the key factor to the economic growth of China and have helped the country to become the world's top economic powerhouse (Ye, 2001). In order to meet deadlines, migrant factory workers are forced to work long hours.

In the labor-intensive assembly-line of work, women in their teens and twenties are the majority in the factories of China (Tan, 2000). Excessive overtime is widespread among migrant factory workers. By law, a factory work shift in China is typically 40 hours per work-week. However, owners and managers in China tend to ignore the laws and consistently pressure factory workers to work twelve-hour shifts for six or seven days per week (Conlin & Roberts, 2007). Some even work up to 16 hours a day (Wells, 2003).

Western social scientists have produced volumes of research on work-stress, documenting a strong association between prolonged work hours and stress (e.g., Beehr, King, & King, 1990; Kaufmann & Beehr, 1986; Netemeyer, Johnston, & Burton, 1990). Research indicates that prolonged work hours and work shifts have detrimental effects on workers' mental, physical, and social health (Sparks et al., 1997). Studies also indicate that employees on non standard work shifts (other than fixed day shift, 9 a.m. to 5 p.m.) reported significantly higher overall burnout, emotional exhaustion, job stress, and job impairments (Scott, 2004).

Research concludes that working long hours can increase stress and depressive mood in individuals (Hofferth, & McCloyd, 2000). Prolonged work hours and rotating shifts of migrant workers are associated with psychological problems, e.g. higher levels of stress (Coffey, Skipper, & Jung, 1988), lower levels of psychological well-being

(Bohle & Tilley, 1990), neurotic disorders, and increased reports of depression and anxiety (National Sleep Foundation, 2003). Uehata (1991) points out that prolonged work hours can lead to heart problems, such as acute myocardial infarction and even death.

Migrant workers who work long hours have been found to be more prone to poor lifestyle habits, such as heavy smoking, inadequate diet, and lack of exercise, all of which are behaviors that can lead to health problems (Maruyama, Kohno, & Morimoto, 1995). Some resort to addictive behavior such as commercial sex and drug-use. Working seven days a week in a polluted environment, migrant factory workers are not protected from breathing harmful emissions, posing serious threat to their health (World Bank, 1995). Rosa (1995) suggests that prolonged work shifts (9-12 hours per day) should be avoided to minimize risk to the safety of workers. Overloaded workers find it difficult to maintain a good relationship with their spouses because of lack of energy and exhaustion from prolonged work hours (Bosch, 1999). Exposure to chronically unsupportive environments, crowded dormitories and hazardous factory environments result in increasing stress and depression in migrant workers (Tan, 2000). However, due to fear of losing international capital investment, local government hesitates to enforce labor protection laws.

Summary

Chinese philosophical tenets of acceptance, detachment, tranquility, and conformity to nature help individuals battle with their problematic situations. Millions of migrant workers are faced with stressful situations when they move from rural areas to find jobs in metropolitan cities across China. Migrant workers are in danger of being

marginalized in China's endeavor for modernization and urbanization. Migrant workers in China are constantly exposed to urban stress, long working hours, and a reduction in social network. The present paper focuses on research addressing prolonged work hours and depression among these migrant factory workers in China.

Summary

The evidence to support the proposition that stressful events can and often do lead to depression seems convincing. Research shows the reciprocal relationship between the two, suggesting that depression can exacerbate certain stressful events in a person's life. However, the relationship between stressful events and depression does vary, depending on different factors and circumstances surrounding the incident and the availability of resources for the individual. Current research indicates that migrant workers without sufficient resources and social supports to cope with their harsh work environment in a foreign place may well experience depression.

The problem with these retrospective studies is the personal bias of participants in their recollection. Participants may not be able to report accurately past events associated with depression. Data may be biased because of a participant's differential disclosure and discussion of past stressful life events.

Another problem in the retrospective study of stress and depression is the use of non-experimental studies of aggregate stress. These studies try to label their findings as cause rather than simply an association between stress and depression. Thus, recent research attempts to use multivariate causal models to avoid an incorrect and biased

conclusion of a link between stressful events and depression (Holland, 1986; Sobel, 1982).

With so many studies indicating the side-effects of prolonged work hours, e.g. frequent sickness/ absenteeism, businesses may wish to consider enforcing regular hours (40-50 hours per week) to avoid the costs associated with lower productivity levels. Since the beginning of 2008, the Labor Department of China vigorously penalizes those factory-owners who pressure migrant laborers to work prolonged hours. Furthermore, these employers may find themselves facing legal costs as more employees turn to litigation to seek compensation for stress-related injury (Earnshaw & Cooper, 1996). Factory-owners must encourage their senior managers and supervisors to set standards by reducing their own work hours. Research finds that there is no evidence that reduction in work hours would result in negative effect on productivity (Richardson, 1993). Further investigation is needed to identify the consequences of a negative management style that promotes prolonged work hours for both the supervisors and the factory workers.

CHAPTER THREE: METHODS

The current study investigated the relationship between working hours and stress/depressive symptoms among migrant factory workers in China. This study sought to describe the relationship between stress levels and depressive symptoms in these migrant factory workers. This chapter describes the research participants, instruments, and procedures used in this present research study. In addition, the data analyses performed to answer the research questions are described.

Research Design/Data Analysis

Three research hypotheses were investigated in this study. Pearson correlation test, t test, ANOVA and MANOVA statistical analysis were performed to find out the interactions between variables, e.g., (Independent variables- working hours, gender, marital status, dorm living, local relatives versus both Dependent variables-LCU and CBDI scores). The Multiple Regression Analyses were used to determine the influence of all independent variables on both dependent variables (LCU and CBDI scores). The Beta weight or the standardized regression coefficient generated through this test helped to make direct comparison of the relative strengths of relationships between variables. To determine the effect of independent variables on Dependent variables, MANOVA (Multivariate Analysis of Variance) was used to test for interactions as well as main effects between variables. This test helped to determine if there were differences among dependent variables simultaneously.

Two sets of t tests were conducted to determine if there was a significant difference between two groups of migrant workers (over 55 working hours per week and less than 55 working hours per week) in reference to their stress levels and depressive symptomatology. Multivariate associations between control and demographic variables were determined through multiple regression test: (a) LCU versus working hours per week and gender, (b) LCU versus marital status and working hours per week, (c) LCU versus dorm living or not and working hours per week, (d) LCU versus local relatives or not and working hours per week, (e) CBDI versus marital status and working hours per week, (f) BDI versus working hours per week, and (h) CBDI versus local relatives or not and working hours per week, and (h) CBDI versus local relatives or not and working hours per week

The first hypothesis stated that there would be a statistically significant relationship in stress and working hours. To answer this hypothesis a Pearson correlation test was carried out to determine the result of this hypothesis. The second hypothesis stated that there would be a statistically significant relationship between work hours and depressive symptoms. To determine a correlation between work hours and depressive symptoms, Pearson correlation procedure was performed to see if there was significant relationship between the two variables.

The third hypothesis stated there would be association between the number of stress points and depressive symptoms of migrant factory workers in China. To determine a correlation between total stress points and depressive symptoms, Pearson correlation procedure was performed to see if there was significant relationship between the two

variables. All data analysis was conducted through SPSS version 15.

Research Hypotheses

This cross-sectional study was performed to determine how working hours may be a source of stress and depressive symptoms in immigrant factory workers of Guangdong and Shanghai, China. A plausible assumption would be that prolonged working hours may have contributed to, or even triggered, either depression or stress. The three research questions for this study were: Was there a significant relationship between work hours and stress among migrant factory workers in China? Was there a significant correlation between work hours and depression among migrant factory workers in China? Was there a significant relationship association between level of stress and depressive symptoms among migrant factory workers in China? Three hypotheses were investigated in this study.

Population

A sample population of 1200 migrant factory workers from the province of Guangdong (Southern city) and the city of Shanghai (Northern city) volunteered to participate in an anonymous survey. Guangdong is the largest city in southern China with 18 million factory laborers working hard to deliver more than 40 million cargo containers to ports around the world every year (Burtynsky, 2007). Shanghai, with a population of 20 million people, is home to 4 million migrant workers (Shanghai Municipal Statistics Bureau, 2007).

These migrant workers came from different rural areas of China; they spoke diverse dialects and were accustomed to different cultural behaviors and values. Some of the laborers were lured into working 12-hour shifts for six or seven days per week. Even though labor laws limit overtime for factory workers to 36 hours per month, migrant workers were not spared from prolonged work hours (Conlin & Roberts, 2007).

Measures

In 1948, Adolf Meyer began recording a patient's life events by using charts (Vourlekis, & Knee, 1988). This method was refined by Wolff and his colleagues in the 1950s and by Holmes and Rahe in the 1960s. Thus, a 43-item checklist of the Social Readjustment Rating Scale (SRRS) was developed to characterize the events that most often occur to patients before treatment (Holmes & Rahe, 1967). Since then, volumes of research were published to investigate the relationship between stressful events and symptoms of depression (Homes, 1979). Turner, Wheaton, and Lloyd (1995) published a refined stressful events checklist for screening non-specific psychological stress (e.g., change in sleeping habits, change in eating habit, and difficulty in sex).

LCU-Life Change Units Scale

According to Zimmerman (1999), stress level from life change is not positively related to depression; there are other contributing factors including personality, coping skills, and family history. Rahe, and his colleagues (1997) alluded to the fact that there are other stressors (personal and interpersonal crisis) contributing to work-stress (Hobson

et al., 1998; Miller & Rahe, 1997). Thus Life Change Units (LCU) was developed to better reflect individual stressor in different areas of the person's life (Miller & Rahe). The Life Change Units (LCU) checklist was designed to measure the frequency and impact of life events (Zimmerman, 1989). For that reason, LCU was used in this study as the instrument to rate not only work stress but also each stressful event of an individual in the past 12 months by identifying specific stressors such as changing of job, relocation, or separation from family, etc. (Miller & Rahe). LCU is a self-report 74-item inventory (Miller & Rahe) adapted from the Social Readjustment Rating Scale (SRRS) for adult-assessment of positive and negative life events (Holmes & Rahe, 1967).

The Chinese version LCU measurement (an expansion of SLER) came out in 1990 and series of studies have shown the reliability and validity of the Chinese version of LCU (Zheng & Young, 1986). More recent studies have found that negative life events and individualized scores of CSLERS (Chinese stressful life event rating scale with LCU measurement) are sensitive for measuring the changes of health (Zhen & Lin, 1991). These studies included the satisfactory Cronbach coefficient (alpha=.75) and test-retest reliability (Pearson r=.89). However, these studies used a translated version of the scale originally developed by Holmes and Rahe based on their experiences with American subjects. Chinese version of LCU (Miller & Rahe, 1997) is a more updated measurement tool compared to CSLERS (Rahe, 1969); therefore, it will be used as one of the measuring tools in this study.

BDI-Beck Depression Inventory

The Beck Depression Inventory is a 4-point Likert 21 item self report instrument. The Beck Depression Inventory was used to measure depressive symptoms in individuals over the past two weeks (Beck, 1967). According to Beck and his colleagues, depressed individuals have distorted negative perceptions of themselves, their world, and their future (Beck, Rush, Shaw, & Emery, 1979). The Beck Depression Inventory is designed to measure the frequency and intensity of depressive symptoms in individuals (Beck, Ward, Mendelson, Mock, & Erbaught, 1961).

For more clarity, Beck and his colleagues (1979) published a revised version of the original BDI, rephrasing certain symptoms and eliminating some of the double negatives (Beck et al., 1979). This gave birth to BDI-1 A, a newer version of BDI which has been widely used by clinicians and researchers for assessment of depression. In 1996, BDI-II was introduced to confront the problems of content validity in the BDI-1-A (Beck, Steer, Ball &, Ranieri, 1996). This measure is widely used among adolescents; however, BDI-1-A remains to be a more popular one compared to BDI-II, 94.5% published studies employed BDI-1 A version of the test (Steer, Ball, Ranieri, & Beck).

BDI is not reliable in cross population comparisons unless psychometric properties exist in the participating population (Beck, Steer, & Garbin, 1988). When comparing two distinct populations, there are issues of differential item functioning (DIF) derived from the lack of item parameter invariance (Azocar, Arean, Miranda, & Munoz, 2001). Due to the issue of DIF, Geisser, Roth, and Robinson (1997) cautioned about the use of BDI-1 A in comparing different populations. Thus using BDI to measure

depression in cross cultural settings is a challenge due to cultural biases, language barriers, and misinterpretation of questions by non-western respondents, and may result in poor validity.

Wang and colleagues (2005) did a study on investigating psychometric properties and cross-cultural validity of the Beck Depression Inventory (BDI) among ethnic Chinese in Brazil. Two hundred and eight community individuals from Sao Paulo Brazil participated in this research. The report concluded BDI is reliable (Cronbach's alpha of 0.818 was obtained) in assessing depressive symptoms in a Chinese population (Wang, Andrade, & Gorenstein, 2005).

The Chinese version of BDI was translated and validated for the Chinese culture through the thorough process of "Back-Translation" (Chan & Tsoi, 1984). The process involved translating BDI into Chinese and translated back into English by Chinese psychiatrists (Zheng et al., 1991). After a number of back-translations, the Chinese version corresponded closely to the original Beck Depression Inventory (Zheng & Lin, 1991). Correlation coefficient of the Chinese version (BDI) was found to be 0.85 (using Cronbach's alpha) (Zheng & Lin). It was proven to be valid and reliable (Andrade, Gorenstein, Vieira, Tung, & Artes, 2001). In another study, analyzing for its predictive validity, CBDI was found to have good sensitivity and specificity for screening major depression among Chinese in China (Cheng, 1997; Kirmayer & Young, 1998).

The CBDI was administered to 503 students in a primary care clinic of a community health center in US to screen for depression. CBDI was found to have good sensitivity (0.79), specificity (0.91), positive predictive value (0.79), and negative

predictive value (0.91). The study also points out the concurrent validity demonstrated a correlation of .77 between CBDI and psychiatric rating using university students as subjects (Yeung, Chang, Gresham, Nierenberg, & Fava, 2004).

Procedures

The primary investigator consulted with the Association of Christian Factory

Owners and other manufacturing companies to solicit their consent to conduct surveys in
their factories (see Appendix A). Public and private meetings were carried out to present
the essence of this research. Letters of biographical data about the primary investigator
and purpose of the survey were sent to different factory owners through email and
personal delivery (see Appendix A). Approvals (written or verbal) were obtained from the
authority of factories studied in Guangdong and Shanghai. After obtaining the approval
for data collection, subjects were continuously recruited from different factories through
promotion of factory owners for this research study.

A personal data sheet and two instruments consisting of either multiple-choice items or check-lists were given to participants (see Appendix D & E). The demographic questionnaire (check list and fill in the blank) which included: age, marital status, gender, working hours per week, dorm-living or not, prior diagnosed depression/mental disorder, physical handicap, and whether they have any local relatives etc. was filled out by the participants (see Appendix C). To assess depressive symptoms, participants were requested to respond to a 21 item 4-point Likert scale (0 never, 1 sometimes, 2 often, 3 always) self report CBDI (Chinese Beck Depression Inventory) in reference to how they

felt and behaved emotionally in the past two weeks. Total scores were summed up to measure the severity of current depressive symptomatology. Higher individual total scores reflect a higher level of depressive symptomatology of individuals. Assessment of stress levels from stressful life events in the past 12 months involved 74-items of Stressful Life Events-Life Change Unit Scale (Miller & Rahe, 1997). The LCU scale measures 74 events for their occurrence and non-occurrence within the past 12 months. Many of the events included in this scale were typically classifiable as negative or undesirable. Participants marked "yes" or "no" to indicate whether any of the listed events "happened to them." If an event did occur, participants indicated the number of occurrences. The instrument yielded total scores for the impact of life events by multiplying the number of occurrences and the stress points assigned to each event. The sum of total stress points from LCU was used as the measure of current levels of stress of each participant. The interpretations and implications of total scores were summarized as following: 150-200 (35% probability of developing stress related illness within next 12 months), 200-300 (50% probability of developing stress related illness within next 12 months) and 300 and above (80% probability of developing stress related illness within next 12 months).

The surveys were printed in Chinese language. The participants completed the surveys in a large group setting. The approximate time to complete the survey was 30 minutes. The surveys were administered by human resource department from the factories with the principal investigator present to answer questions. After each meeting, the principal investigator obtained hard copies of response forms (both CBDI and

Chinese translation of LCU) from participants; data would be put into SPSS format for further analysis. Incomplete forms were discarded from the data pool. Due to high turnover of migrant workers, feedback and result of individual data analysis were given to individual participants. However, group result of data analysis was made available for participating employers upon written request. All data will be kept by the principal investigator in an electronic file and will be discarded after five years.

Informed Consent and Other Ethical Concerns

In order to protect participants from any potential legal repercussions for illegal overtime work, names of the factories and participants were neither included nor revealed in this research study. At the initial session with the participants, the investigator explained the purpose of the survey and how to complete the surveys to migrant workers. All participants were informed about guarantees of anonymity and confidentiality and the need for written informed consent. Questions from participants were answered before taking the surveys. The participants were told that they could terminate participation at any time, but they should return the instruments. The completed instruments were returned by participants to the researcher to become part of the anonymous data pool. Score results were not returned to individual participants due to high turnover rate in migrant factory workers. Pending on factory-owner's approval, some participants received a small gift (e.g. shampoo, soap, cash) as a token of appreciation for their participation.

Summary

The purpose of this study was to investigate the relationship between the level of stress/depressive symptoms and work hours among migrant factory workers in China. Furthermore, this study sought to identify the relationship between stress levels and depressive symptoms among these migrant workers. Two survey instruments were used to assess stress levels and depressive symptomatology among migrant factory workers in China. The survey included background/demographic questionnaire, Chinese Beck Depression Inventory (CBDI), and Life Change Unit (LCU). All surveys were printed in Chinese language. The survey instruments appear to have good reliability and validity.

Three research hypotheses were investigated in this study. ANOVA and MANOVA statistical analysis were conducted to determine interaction effects of variables. The first hypothesis stated that there would be a significant relationship in stress and working hours. To test this hypothesis a Pearson correlation would be conducted. The second hypothesis stated that there would be a significant relationship between work hours and depressive symptoms. To determine a correlation between work hours and depressive symptoms, Pearson correlation procedure was performed to see if there is a significant relationship between the two variables. The third hypothesis stated there would be a significant association between the number of stress points and depressive symptoms of migrant factory workers in China. To determine a correlation between total stress points and depressive symptoms, Pearson correlation procedure would be performed to see if there is a significant relationship between the two variables. Findings and discussions of all statistical data analyses are included in chapter four.

CHAPTER FOUR: RESULTS

The current study utilized a survey to investigate the relationship between working hours, stress, and depressive symptoms among Chinese migrant factory workers in Guangdong and Shanghai. The following questions were investigated:

- 1. Is there a statistically significant relationship between work hours and levels of stress among migrant-factory workers in China?
- 2. Is there a statistically significant relationship between work hours and depressive symptoms among migrant-factory workers in China?
- 3. Is there a statistically significant relationship between levels of stress and depressive symptoms among migrant-factory workers in China?

This chapter consists of response rates and results to the survey. The demographic information, descriptive statistics, results of hypotheses testing and data analyses are presented in this chapter. Respondent demographic information will be described in aggregate terms. Data will be categorized according to the hypotheses.

Descriptive Statistics of Study

A total sample of 1331 migrant-factory-workers was invited to participate in this study. Four hundred and twenty of the 1331 surveys were excluded for different reasons. Most of the discarded returned surveys had certain demographic information missing.

Among the discarded surveys, 2.4% reported having been diagnosed with depression and 0.8% reported a physical handicap. As a result, the actual sample size was 911 (n = 911)

representing a high return rate of 68%.

Out of 911 participants who returned useable surveys, 654 (71.8%) were female and 257 (28.2%) were male workers. The ages of these immigrant factory workers were between 14 to 62 and the mean age was 25. Among the participants, 548 (60.52%) were single and the remaining 363 (39.8%) were married. No divorced or widowed were among the participants. Among these migrant workers, 317 (34.8%) reported having relatives who live in the same city where they work and 594 (65.2%) did not have relatives living in the same city. 458 (50.3%) of the sample population lived in factory-dormitory and 453 (49.7%) lived off campus. 27 (2.4%) of these migrant workers indicated having prior depression diagnosis and 9 (0.8%) of them indicated having some form of physical handicap; both groups were discarded from the initial data pool (n = 1331). The mean work hours per week for these migrant workers was 55 hours per week; 537 (58.9%) worked less than 55 hours per week and 374 (41.1%) worked more than 55 hours per week (see Table 1 and Table 2).

Table 1

Demographic Characteristics of Migrant Factory Workers in China

Characteristic	N	P
Gender		
Female	654	(71.8%)
Male	257	(28.2%)
Marital Status		
Single	548	(60.52%)
Married	363	(39.48%)
Dormitory		
Residents	458	(50.3%)
Non-Residents	453	(49.7%)
Local Relatives		
With Local Relatives	317	(34.8%)
Without Local Relatives	594	(65.2%)

Table 2

Means and Standard Deviations of Age for Migrant Factory Workers

Variable	N	Minimum	Maximum	M	SD
Age	911	14	62	25.16	6.515

Preliminary Data Analysis

On the demographic questionnaire form, participants were asked to give information for the following variables: age, gender, marital status, dorm-living or not, work hours, relatives live in town or not, prior history of diagnosed depression, and any physical handicap. For demographic variables which showed significant correlation with working hours, Life-Change Units (LCU; Miller & Rahe, 1997) or Beck Depression Inventory (BDI; Beck, 1967), a further correlational analysis was carried out to determine overall effect of each variable to dependent variables (working hours, LCU and BDI). A multiple correlational analysis was conducted with stress and depression as the dependent variables, and the four demographic variables (married vs. single, dorm-living vs. off campus living, relatives live in the same city vs. no relatives living in town and male vs. female) as the independent variables. Independent sample *t*-test was used to determine if two working hours (over 55 hours per week and under 55 hours per week) means are equal. To find association between variables, Pearson Correlation test and chi-square test were used.

LCU and BDI among Different Work Shifts

As indicated in Table 3, results of a two-sample t-test indicated that those migrant factory workers who worked over 55 hours per week (n = 374) had a significantly greater amount of perceived stress than those who worked under 55 hours per week (n = 537), t = 2.230, p = 0.026 < 0.05. The results showed that the range of LUC scores for migrant workers was quite large, (SD= 205.68 for over 55 hours and 177.52 for under 55 hours).

The low stress scores of workers who worked over 55 hours and the high stress scores of workers who worked under 55 hours per week could be attributed to the fact that extra income from overtime helped them to alleviate their financial stress. The extra income factor affected mostly those who needed to support family back home. Results also indicated that those migrant factory workers who worked over 55 hours per week (n = 374) had significantly greater levels of perceived depressive symptoms than those who worked under 55 hours per week (n = 537), t = 6.092, p= 0.00 < 0.05

Table 3

LCU and BDI Differences between Prolonged Work Hours (Over 55 Hours per Week)

Workers and Those Who Work Under 55 Hours per Week

	Over 55 Hours/Week			Under 55 Hours/Week			k
Workers			Workers				
	N	M	SD -	N	M	SD	T
LCU	374	196.02	205.68	537	167.54	177.52	2.230**
BDI	374	16.20	6.706	537	13.54	6.341	6.092**

^{**}*p* < .01

The BDI was used to assess the extent of migrant factory workers' depressive symptoms over the past two weeks. They were to answer on a 0-3 scale, with 3 being an "always" symptom manifestation and 0 being a "not at all". According to the BDI interpretation, different total scores represent different symptom stages with a cut point of 19. 0 to 9 represent minimal depressive symptoms, scores of 10 to 16 indicate mild depression, scores of 17 to 29 indicate moderate depression, and scores of 30 to 63 indicate severe depression.

Four hundred and forty four subjects (48.7%) reported scores reflecting a mild depressive mood over the past two weeks. Two hundred and eighty nine (31.7) indicated having moderate symptoms of depression. One hundred and forty eight (16.2%) showed signs of severe depressive symptomatology and thirty of these migrant factory workers indicated a total scores of 29+ (3.3%) representing an extreme form of depressive

symptoms in the past two weeks. Table 4 summarizes the participants' responses regarding their depressive-symptom total scores.

Table 4

BDI Scores Summary of Migrant Factory Workers in China (n=911, cut point= 19)

Depressive Symptoms	BDI Total Scores	N	%
Mild	0-13	444	48.7
Medium	14-19	289	31.7
Severe	20-28	148	16.2
Extreme	29 and above	30	3.3

Correlational and regression analyses were conducted for mediating effects between variables. For predictor variables that were found to be significantly correlated with criterion variables, stepwise regression analysis was used for mediating effects between variables. Hierarchical multiple regression equations are necessary to establish the final condition. One predictor variable was entered in the first step of the equation to predict the given criterion variable. The second predictor variable was then entered in the next step. This procedure reveals the degree of variance in the criterion variable unique to the second predictor variable. The significance level for all tests was set at p < .05.

Correlational procedures were used to test the hypothesis that long work-hours would predict stress and depressive symptoms among migrant factory workers in China. Pearson correlational analysis revealed significant relationships between variables. Results indicated significant correlation between stress levels (measured by LCU), depressive symptoms (measured by BDI), and working hours (see Tables 5, 6 & 7).

Partial Pearson correlation analysis of interactions between variables

Table 5

Work Hours in Migrant Factory Workers and their Stress Levels

Pearson Correlation	.146
	.000
N	911
* <i>p</i> < 0.05	

Table 6

Work Hours in Migrant Factory Workers and Their Depressive Symptoms

Pearson Correlation	.267
	.000
N	911

^{*}*p* < 0.05

Table 7
Stress Levels and Depressive Symptoms in Migrant Factory Workers

Pearson Correlation	.301
	.000
N	911

^{*}*p* < 0.05

The overall effect for stress (LUC) associated with demographic variables was significant. Control variables used in the analysis included work-hours, age, marital status, dormitory living, gender, and relatives living in the same city. All of these variables were found to have a systematic impact on the stress and depressive symptoms of migrant factory workers. After controlling for variables that include relatives, dorm-living, and marital status (one predictor variable at a time was entered in equation to predict the given criterion variable), partial Pearson correlation analysis indicated that there was a significant relationship between LCU and working hours.

Table 8

Stress Levels (LCU), Depressive Symptoms (BDI) and Work Hours (W.H.) in Male Migrant Factory Workers

	LCU vs. W.H.	BDI vs. W.H	LCU vs. BDI
Pearson Correlation	.141 (*)	.249 (**)	.270 (**)
	.023	.000	.000
N	257	257	257

^{*} *p* <.05 ** *p* <.01

Table 9

Stress Levels (LCU), Depressive Symptoms (BDI) and Work Hours (W.H.) in Female Migrant Factory Workers

	LCU vs. W.H.	BDI vs. W.H.	LCU vs. BDI
Pearson Correlation	.141 (*)	.279 (**)	.324 (**)
	.000	.000	.000
N	654	654	654

^{*} *p* <.05 ** *p* <.01

After controlling for the variables of dorm-living and work-hours for those participants who were living in the dormitory, the correlation between working hours and LCU was found to be significant but weak r = .188, p = <.01. For those who were not living in the dormitory, the correlation between working hours and LCU yielded r = -.024, p = <.01. The results indicate that for factory workers who lived in the dormitory, longer working hours were related to higher stress levels. For factory workers who lived off campus, working hours had no relationship to their stress levels (see Tables 10 & 11).

Table 10

Stress Levels (LCU), Depressive Symptoms (BDI) and Work Hours (W.H.) in Migrant Factory Workers Whom Live in Factory-Dormitory

188 (**)	.263 (**)	.306 (**)
.000	.000	.000
458	458	458
	.000	.000 .000

^{*} *p* <.05 ** *p* <.01

Table 11

Stress Levels (LCU), Depressive Symptoms (BDI) and Work Hours (W.H.) in Migrant Factory Workers Living Off Factory Campus

024	.179 (**)	.244 (**)
.614	.000	.000
453	453	453
	.614	.614 .000

^{*} *p* <.05 ** *p* <.01

After controlling for the variable of relatives, those participants who had relatives living in the same city, the correlation between working hours and LCU was r = .066, p = <.01. For those participants who had no relatives living in the same city, the correlation obtained was r = .184, p = <.01. The results indicate that for only workers who did not have relatives living in the same city where they worked, prolonged working hours were found to be significantly related to higher stress (see Tables 12 & 13).

Table 12

Stress Levels (LCU), Depressive Symptoms (BDI) and Work Hours (W.H.) in Migrant Factory Workers with Relatives Living in the Same City

	LCU vs. W.H.	BDI vs. W.H.	LCU vs. BDI
Pearson Correlation	.066	.216 (**)	.340 (**)
	.000	.000	.000
N	317	317	317

^{*} *p* <.05 ** *p* <.01

Table 13

Stress Levels (LCU), Depressive Symptoms (BDI) and Work Hours (W.H.) in Migrant Factory Workers with No Relatives Living in the Same City

LCU vs. W.H.	BDI vs. W.H.	LCU vs. BDI
.184 (**)	.291 (**)	.281 (**)
.000	.000	.000
594	594	594
	.184 (**)	.184 (**) .291 (**) .000 .000

^{*} *p* <.05 ** *p* <.01

When the variables of marital status and work-hours were entered as controlled variables at the first step of the equation to predict stress scores, this block was found to be significant. For those participants who were single, the correlation between working hours and LCU was found to be r = .201, p = <.01. For those who were married, the correlation was found to be r = .054, p = <.01. The results indicate that for single workers, long working hours were significantly related to higher stress levels. For married workers, working hours show no significant relationship to levels of stress (see Tables 14 & 15).

Table 14

Stress Levels (LCU), Depressive Symptoms (BDI) and Work Hours (W.H.) in Single Migrant Factory Workers

	LCU vs. W.H.	BDI vs. W.H.	LCU vs. BDI
Pearson Correlation	.201 (**)	.275 (**)	.307 (**)
	.000	.000	.000
N	548	548	548

^{*} *p* <.05 ** *p* <.01

Table 15

Stress Levels (LCU), Depressive Symptoms (BDI) and Work Hours (W.H.) in Married Migrant Factory Workers

.271 (**	.323 (**)
	.323 ()
.000	.000
363	363

^{*} *p* <.05 ** *p* <.01

After controlling for the variable of dormitory living, for participants who were living in the dormitory, the correlation between working hours and BDI was found to be r = .263, p = <.01. However, for those who were not living in the dormitory, the correlation between working hours and BDI yielded r = .179, p = <.01. The results indicate that longer working hours were related to higher depressive symptoms whether they lived in the dormitory or off-campus (see Tables 10; & 11).

Table 10

Stress Levels (LCU), Depressive Symptoms (BDI) and Work Hours (W.H.) in Migrant Factory Workers Whom Live in Factory-Dormitory

	LCU vs. W.H.	BDI vs. W.H.	LCU vs. BDI
Pearson Correlation	.188 (**)	.263 (**)	.306 (**)
	.000	.000	.000
N	458	458	458

^{*} *p* <.05 ** *p* <.01

Table 11

Stress Levels (LCU), Depressive Symptoms (BDI) and Work Hours (W.H.) in Migrant Factory Workers Living Off Factory Campus

LCU vs. W.H.	BDI vs. W.H.	LCU vs. BDI
024	.179 (**)	.244 (**)
.614	.000	.000
453	453	453
	.614	.614 .000

^{*} *p* <.05 ** *p* <.01

When the variables of relatives and work-hours were entered as controlled variables at the first step of the equation to predict BDI scores, the result was found to be significant. For those participants who had relatives living in the same city, the correlation between working hours and BDI was r = .216, p = <.01. For those participants who had no relatives living in the same city, the correlation obtained was r = .291, p = <.01. The results indicated that prolonged working hours were found to be significantly related to higher depressive symptoms in both groups- those who had relatives living in the same city and those who did not (see Tables 12 & 13).

Table 12

Stress Levels (LCU), Depressive Symptoms (BDI) and Work Hours (W.H.) in Migrant Factory Workers with Relatives Living in the Same City

	LCU vs. W.H.	BDI vs. W.H.	LCU vs. BDI
Pearson Correlation	.066	.216 (**)	.340 (**)
	.000	.000	.000
N	317	317	317

^{*} *p* <.05 ** *p* <.01

Table 13

Stress Levels (LCU), Depressive Symptoms (BDI) and Work Hours (W.H.) in Migrant Factory Workers with No Relatives Living in the Same City

	LCU vs. W.H.	BDI vs. W.H.	LCU vs. BDI
Pearson Correlation	.184 (**)	.291 (**)	.281 (**)
	.000	.000	.000
N	594	594	594

^{*} p <.05 ** p <.01

For those participants who were single, the correlation between working hours and BDI was found to be r = .275, p = <.01. For those who were married, the correlation was found to be r = .271, p = <.01. The results indicated long working hours were significantly related to depressive symptoms regardless of their marital status (see Tables 14; & 15).

Table 14

Stress Levels (LCU), Depressive Symptoms (BDI) and Work Hours (W.H.) in Single Migrant Factory Workers

	LCU vs. W.H.	BDI vs. W.H.	LCU vs. BDI
Pearson Correlation	.201 (**)	.275 (**)	.307 (**)
	.000	.000	.000
N	548	548	548

^{*} *p* <.05 ** *p* <.01

Table 15

Stress Levels (LCU), Depressive Symptoms (BDI) and Work Hours (W.H.) in Married Migrant Factory Workers

	LCU vs. W.H.	BDI vs. W.H.	LCU vs. BDI
Pearson Correlation	.054	.271 (**)	.323 (**)
	.309	.000	.000
N	363	363	363

^{*} *p* <.05 ** *p* <.01

The findings of this chapter reveal that for single factory workers who lived in the dormitory and without relatives living in the same city, longer working hours were related to higher stress levels. For married factory workers who lived off campus, working hours had no relationship to their stress levels. The results show that longer working hours were related to higher depressive symptoms for these migrant factory workers regardless of their marital status. The results indicate that longer working hours were related to higher depressive symptoms whether they lived in the dormitory or off-campus. Findings also show that prolonged working hours were found to be significantly related to higher depressive symptoms in both groups - those who had relatives living in the same city and those who did not.

Hierarchical regression analyses were conducted, and the main effects for the predictors were entered in an initial block. These analyses included a continuous predictor (work hours) with categorical independent variables (e.g., age, gender, marital status, relatives and dorm living). The results in table 16 show that the variables of working hours (β = 0.09, p <.01), marital status (β = 0.35, p <.01) and dorm-living (β = 0.17, p <.01) were significantly related to LCU (r = .231 and r ² = .053). The results shown in table 17 indicate that variables of age β = -0.12, p <.01, working hours β = 0.25, p <.01 and dorm-living β = -4.04, p <.01 had a significant relationship to BDI (r = .324, r ² = .105). Overall, the variance accounted for by individual predictors was significant but small. Multiple regression analysis indicated that the overall effect for stress associated with background variables was significant r = .60, shrunken r = .49, p < .05.

Table 16

Summary of Multiple Regression Analysis for Main Effects and Interaction of Age,
Gender, Work Hours, Marital Status, Relatives Living in Town and Dorm Living on Stress
Levels of Migrant Factory Workers (N=911)

Variable	В	SE (Error)	Beta	T
Age	- 2.277	1.345	078	-1.886
Gender	-26.69	13.856	063	-1.926
Work Hours	1.063	.383	095	2.805(**)
Marital Status	66.417	18.760	.171	3.540(**)
Relatives	22.065	13.599	.055	1.623(**)
Dorm-Living	64.520	14.290	.170	4.515

^{*} *p* <.05 ** *p* <.01

Table 17

Summary of Multiple Regression Analysis for Main Effects and Interaction of Age,
Gender, Work Hours, Marital Status, Relatives Living in Town and Dorm Living on
Depressive Symptoms of Migrant Factory Workers (N=911)

Variable	В	SE (Error)	Beta	T
Age	120	.045	119	-2.653(**)
Gender	.579	.468	.039	1.239
Work Hours	.099	.013	.254	7.669(**)
Marital Status	431	.663	.032	680
Relatives	.251	.459	.018	.547
Dorm-Living	1.497	.482	.113	3.104(**)

^{*} *p* <.05 ** *p* <.01

The following independent variables were entered in the stepwise regression equations for further analysis of variable-interactions: (working hours, marital status and dorm-living) interacted with LCU and (age, working hours and dorm-living) interacted with BDI. Demographic factors entered in stepwise regression analysis showed significant relationship between levels of stress (LCU) in those single workers who lived in the dormitory and worked long hours (r = .211, $r^2 = .025$, p < .05.). All three variables were positively associated with levels of stress among migrant factory workers. Demographic factors (age, working hours and dorm-living) entered in stepwise regression showed significant relationship between levels of depressive symptoms in younger migrant factory workers who lived in the dormitory and had to work long hours (r = .344, $r^2 = .112$, p < .05). All three variables were associated with depressive symptoms.

Pearson correlational analysis revealed significant relationships between stress levels and depressive symptoms. The correlation between levels of stress and depressive symptoms was found to be r = 301, p = <.01 which was significant and positively correlated with the level of reported depressive symptomatology. This result indicated that workers who had higher stress levels also scored higher on BDI.

Findings Related to Hypotheses

Pearson correlational analysis revealed significant relationships between stress levels and work hours. Test results indicated that there is a significant moderate correlation between working hours and depression levels. Findings indicated that there is

a significantly moderate positive correlation between stress levels and depression symptoms in migrant factory workers in China.

Findings Related to Research Hypothesis #1

The first hypothesis predicted that there would be a significant relationship between work hours and stress levels among the migrant factory workers in China. To answer this hypothesis, the levels of stress symptomatology were examined in migrant factory workers who reported different stressful events in the past twelve months. Subjective levels of distress were measured by adding and averaging their total score from the LCU self-report inventory. The correlation was found to be r = .146, p = <.01 indicating that there is a significant though small correlation between working hours and stress levels (see Table 7), providing some support for this hypothesis.

Findings Related to Research Hypothesis #2

The second hypothesis stated that there would be a significant relationship between work hours and depressive symptoms among the migrant factory workers in China. To test this hypothesis, the levels of depressive symptoms in migrant factory workers who reported depressive symptoms in the past two weeks were examined. This study measured their subjective levels of depressive symptoms by adding and averaging their total BDI scores. The correction was found to be r = .267, p = < .01; this indicated that there is a significant moderate correlation between working hours and depression levels (see Table 8), therefore, providing some support for this second hypothesis.

Findings Related to Research Hypothesis #3

The third hypothesis stated that there is a significant relationship between stress levels and depressive symptoms among the migrant factory workers in China. To assess this hypothesis, the correlation between BDI scores and LCU scores in migrant factory workers were tested. The correlation was found to be r = .301, p = <.01 indicating that there is a significantly moderate positive correlation between stress levels and depression symptoms in migrant factory workers in China (see Table 9), therefore, providing some support for this third hypothesis.

Summary of Research Findings

A total sample of 1331 Chinese migrant-factory-workers from Guangdong and Shanghai were invited to participate in this study. Four hundred and twenty of the 1331 returned surveys were discarded; some had demographic information missing and most of the discarded returned surveys had certain demographic information missing. Among the discarded surveys, 2.4% indicated participants having prior diagnosed depression and 0.8% indicated participants having some form of physical handicap. As a result, the actual sample size was 911 (N=911) representing a high return rate of 68%. Out of these 911 returned subjects, 654 were female and 257 were male workers. The ages of these immigrant factory workers were between14 to 62, and the mean age was 25. Five hundred and forty eight were single and the remaining 363 were married. No divorced or widowed were among the participants. Among these migrant workers, 317 reported they had relatives living in the same city where they worked and 594 did not have relatives

living in the same city. Four hundred and fifty eight of the sample population lived in factory-dormitory and 453 lived off campus. Twenty seven of these migrant workers indicated having prior diagnosed depression and nine of them indicated having some form of physical handicap; both groups were discarded from the data pool. The mean work hours per week for these migrant workers was 55 hours per week; 537 worked less than 55 hours per week and 374 worked more than 55 hours per week. Based upon completed surveys from migrant factory workers, data analysis suggests that there is a relationship between levels of stress, work hours and depression among migrant factory workers in China.

The first hypothesis stated that there would be a significant relationship between stress levels of migrant factory workers and work hours. The results indicated that there was a weak but significant positive correlation (r = .15, p < .01) between working hours and stress levels. This result suggested that there was a significant relationship between different work hours and subjective stress levels of migrant factory workers in China. The second hypothesis stated that there would be a significant relationship between work hours and depressive symptoms among migrant factory workers. The results indicated that there was a moderate positive and significant correlation (r = .27, p < .01) between working hour and depression level among migrant factory workers in China. This result indicated workers who worked longer hours also scored high on the BDI.

The third hypothesis predicted that there would be a significant relationship between stress levels and depressive symptoms among migrant factory workers in China. The results indicated that there was a moderate and positive significant correlation ($r = \frac{1}{2}$)

3.01, p < .01) between stress levels and depression symptoms in migrant factory workers in China. For those workers who scored high on LCU also scored high on the BDI.

Linear regression analysis revealed that gender, marital status, living arrangement (stay in factory dorm or live off campus), and support from in-town relatives were important factors affecting levels of stress and depressive symptoms in migrant factory-workers in China. Dormitory-living seemed to be the strongest factor associated with stress and depressive symptoms among migrant factory workers. Results indicated that as work hours increased, especially among the dorm-living workers, the level of stress and depressive symptomatology increased as well. As a significant main effect, it appeared that dorm living might have played a significant role in increasing stress and depressive symptomatology among migrant factory workers in China. Single female workers who lived in dormitory and had no in-town relatives scored higher on both LCU and BDI.

Summary

A total sample of 1331 Chinese migrant-factory-workers from Guangdong and Shanghai were invited to participate in this study. After discarding the incomplete returned surveys, the actual population sample was 911. After Pearson correlation analyses and multivariance analysis, the findings of this chapter revealed that for single factory workers who lived in the dormitory and without relatives living in the same city, longer working hours were related to higher stress levels. For married factory workers who lived off campus, working hours had no relationship to their stress levels. The results also showed that longer working hours were related to higher depressive symptoms for

these migrant factory workers regardless of their marital status. The results indicated that longer working hours were related to higher depressive symptoms whether they lived in the dormitory or off-campus. Findings also pointed out that prolonged working hours were found to be significantly related to higher depressive symptoms in both groups - those who had relatives living in the same city and those who did not.

Introduction

There are very few studies (e.g., Kessler et al., 2003; Mintz, 1992) that have examined migrant factory workers and the effects of prolonged work hours on their stress levels and depressive symptoms. These studies focus largely on finding relationship between work related stress and depression. Both variables (stress levels and depressive symptoms) were tested individually in the current study. In addition to investigation of the relationship between work hours, level of stress, and depressive symptoms for migrant factory workers in China, the current study also examined contributing factors to stress and depression for the same population. Living conditions and social and family support of workers were assessed in this study to determine if there was a significant relationship between these factors and development of stress and depression among migrant factory workers.

This study also examined gender differences, marital status, family support, living environment, and social interaction as factors that mitigate stress levels and depressive symptoms associated with prolonged work hours among migrant factory workers. The 74-item Life Change Units (Miller & Rahe, 1997) was used to measure stress levels of participants in the past twelve months. The 21-item Beck Depression Inventory (Beck, 1967) was used to determine the levels of depressive symptoms in the last two weeks of individual worker. The sample size included 911 migrant factory workers.

In this chapter, conclusions related to findings between stress, depression, and work hours are presented. Limitations, implications, and recommendations are also included in this chapter. A summary of the current study is included.

The following questions were investigated:

- 1. Is there a statistically significant relationship between work hours and levels of stress among migrant-factory workers in China?
- 2. Is there a statistically significant relationship between work hours and depressive symptoms among migrant-factory workers in China?
- 3. Is there a statistically significant relationship between levels of stress and depressive symptoms among migrant-factory workers in China?

The first hypothesis predicted that there would be a significant relationship between work hours and stress levels among the migrant factory workers in China. The second hypothesis stated that there would be a significant relationship between work hours and depressive symptoms among the migrant factory workers in China. The third hypothesis stated that there would be a significant relationship between stress levels and depressive symptoms among the migrant factory workers in China.

Conclusions Related to Findings

This study showed several findings of how work hours affect stress levels and depression among migrant factory workers in China. In the current study, differences in stress levels and depressive symptoms remained when controlling for work hours, gender, dormitory-living, and having relatives living in the same city. This indicated that family

and social support influenced stress levels and depressive symptoms in migrant workers with prolonged work hours. The current study also found gender differences in stress levels and depressive symptoms among migrant factory workers in China. This is consistent with other research findings that psychological distress and depression are strongly associated with work related issues (Wilhelm, Kovess, Seidel, & Finch, 2004). Wilhelm and his colleagues also found that other stressors include marital discord and chronic financial-difficulties; chronic illness and death within the family are likely to impact workers' mental health and performance.

Contrary to the findings of the current study, Wilhelm and his colleagues (2004) did not find work environment, living condition, or social support to be the primary factors related to stress among workers. The researchers pointed out that individual personality type is key to stress and depression at work. The report shows that the bidirectional relationship between personality and work (how one reacts to work related issues) affects the psychological well being of workers. Also, the same report points out that certain people are drawn to particular occupations, but the occupations then have an effect on them. Additionally, these researchers pointed out that stress prompted by low control at work or at home had an increased risk of developing depression and anxiety for workers. Since the above mentioned confounding factors were not addressed in this study, the results of current study are inconsistent with the findings of Wilhelm and his colleagues.

Conclusions Related to Research Hypothesis #1

The first hypothesis stated that there is a significant relationship between work hours and stress levels among the migrant factory workers in China. The current study found that there is a weak positive relationship between work hours and stress levels of Chinese migrant factory workers in Guangdong and Shanghai. More specifically, 374 migrant workers who worked over 55 hours have higher levels of stress compared to those who did not work overtime. This finding is consistent with other research findings showing that prolonged hours at work can be a negative stressor for some migrant factory workers (Michie, 2002). Recent research shows that work hours, work load, conflicting demands and work environments all act as barometers of psychological demands for workers in the workplace (Eaton, 2008). Consistent with the findings of the current study, Fallows (2007) pointed out that prolonged work shift is a negative stressor for many factory workers. However, French, Caplan, and Harrison (1982) pointed out circumstances such as personal problems, inter-personal relationship, coping skills, family supports, genetic factors and sense of marginalization are primary factors elevating stress for workers. Other research indicates that "effort-reward imbalance" (high effort and low reward) at work could also be one of the major factors causing stress and depression among workers (Siegrist, Peter, Junge, Cremer, & Seidel, 1990). Contrary to the results of the current study, these research findings do not indicate a direct relationship between prolonged work hours and stress levels among workers. The current study indicates that there is a significant though small correlation between working hours and stress levels, providing some support for the first hypothesis of this study.

Conclusions Related to Research Hypothesis #2

The second hypothesis stated that there is a significant relationship between work hours and depressive symptoms among the migrant factory workers in China. The finding shows that there is a moderate positive correlation between the two variables as predicted. Consistent with the findings of this study that work hours would be significantly correlated with depressive symptoms, Stansfeld and his colleagues (1999) confirmed that high job demands (conflicting tasks, role conflict, high work pace, and work overload) are predictors of future psychiatric episodes. Results of the present study are also consistent with other research findings showing perceived lack of control over work, including work load, work hours, compensation, management style and workers' laws, being linked to depression (Glass, McKnight, & Valdimarsdottir, 1993). Most of the research in this area considers risk factors to depression that are related to specific occupations, with little work comparing rates of depression between occupations. The correlational findings of the current study indicate that there is a significant moderate positive correlation between working hours and depression levels, therefore, providing some support for this second hypothesis. Workers who worked over 55 hours a week had a higher rate of depressive symptoms compared to those who worked less, suggesting a positive relationship between work hours and depressive symptoms.

Conclusions Related to Research Hypothesis #3

The third hypothesis stated that there would be a significant relationship between depressive symptoms and stress levels among the migrant factory workers in China. The

correlation was found to be r = .301, p = < .01 indicating that there is a significantly moderate positive correlation between stress levels and depression symptoms in migrant factory workers in China, therefore, providing some support for this third hypothesis. This study shows migrant workers who scored higher on the stress measurement scale also obtained a higher score on their BDI (Beck, 1967).

Consistent with these findings, Tennant (2002) advocates that prolonged work hours could become a chronic stressor for workers and is positively related to depression. Tennant (2002) reviewed recent empirical prospective studies on the relation between life event stressors and depression and suggested that there is a significant association between individual stressors and their impact on depression type and on index episode, and relapse or recurrence. Other research also found that negative chronic life stressful events (e.g., marital conflicts or work related stress) are positively associated with the onset of depressive disorders including postnatal depression, endogenous or neurotic depression, major depression or non-major depression, unipolar, and bipolar depression. Twin studies provide the strongest evidence of the relative magnitude of effect of environmental stressors (e.g., prolonged work hours) on depression (Tennant, 2002). Depressive symptoms associated with stressors include cognitive, affective, and suicidal symptoms (Monroe, Harkness, Simon, & Thase, 2001).

The results of this study demonstrated that prolonged work hours are positively related to stress levels. The work hours are also positively correlated with depressive symptoms in migrant factory workers. This study concluded that stress is positively related to the onset and development of depression in migrant factory workers.

Housing Stressor

This study found a significant correlation between depressive symptoms and dorm-living (environmental factor) in migrant factory workers. Every day the migrant factory workers are confined in factory dormitory, and the environment could become unbearable. Many girls complained that gossip, competition, and jealousy in the dormitory make personal relationships very complicated. Consistent with the study findings of the current study, Swann and his colleagues (1990) pointed out patients with "living environment sensitivity" (p. 390) had a longer initial episode of depression, indicating living environment is pivotal to the onset of depression.

Consistent with the current study's findings, research shows that housing stressor is a significant factor in Pakistani depressed women in the United Kingdom (Husain, Tomenson, & Creed, 2000). In their research study on migrant factory women, Swanson and Burnett (1995) found that 31.7% of the factory women dislike the living arrangements in the dormitory. The same report shows the association between dissatisfaction of living arrangements and high rates of depression and suicide among female migrant workers. This research finding supports the current study's finding that "dorm-living" was the dominant factor associated with subjective stress levels of migrant factory workers in China. Confined in a crowded dorm, migrant factory workers were socially isolated; a chronic stressor which could lead to depression. Other research also points out that without meaningful and sufficient social support a sense of "marginalization" could be experienced among migrant factory workers in their process of acculturation into the new environment (Berry & Kim, 1988). Marginalization,

according to Berry and Kim, is a state of permanent crisis causing hostility, uncertainty, identity confusion, and depression. This current study's finding is consistent with another research study published by Marsella and Dash-Schreuder (1988) stressing the negative impact of marginalization. Marsella and Dash-Schreuder stated marginalized people without sufficient social connections could suffer "culture loss" in the context of rapid cultural change when new and serious challenges have to be met.

Social Support

Consistent with the findings of the current study, other research shows the importance of social support to migrant workers. Studies show that there is a more rapid recovery of depression with social support (Johnson, Monroe, Simons, & Thase, 1994). Cobb (1976) describes social support as "information received by another individual under stress that leads him or her to believe that he or she is loved and cared for, esteemed and valued, and has a network of friends that can be counted on in stressful times" (p. 103). Flannery (1990) defines social support as the "comfort, assistance, and/or information one receives through formal or informal contacts with individuals or groups" (p. 593). Social support is a multidimensional construct; it can be in verbal or nonverbal form (Flannery, 1990; Cohen & Wills, 1985). It can be measured in different ways but as long as it is perceived by the recipients as "helpful", it is qualified as social support (Furukawa, Sarason, & Sarason, 1998). Sometimes the benefits of social support can be either "perceived" (believing that there is available support) or "received" e.g. advice or tangible help (Lakey & Heller, 1988; Uchino & Garvey, 1997). Social support received

by off campus living factory workers resulted in a lower depression rate compared to those who lived in the factory dormitory. By choosing not to live in crowded dormitories, migrant factory workers increased opportunities to build friendship outside of factory environments. Migrant workers could find social outlets to release their work tension. However, it is possible that participants in this study could have utilized other sources of social support not tapped by the biographical variables, or they might have utilized other methods of coping not addressed by this study. For instance, faith and religious practices could be considered as a source of social support for migrant factory workers.

Stress/Depression in Female Population

Consistent with the current study's findings, single female migrant factory workers have higher rates of depressive symptoms compared to their male counterparts. Snell, Belk, and Hawkins (1989) concluded similar findings that feminine personality traits compounded with negative life events contribute to greater risk of depression for women. Thus, long work hours without sufficient social activities and interactions could result in high stress among migrant factory workers, particularly in female single workers, which may result in depression. Inconsistent with findings from the current study, other research indicates that the trend for higher case rates of depressive symptoms in women generally disappeared where men and women had comparable socio-economic backgrounds, suggesting that factors related to socio-economic background rather than gender contributed to these differences (Taylor, Brice, & Buck, 1995). Contrary to the current research findings, Carlton (2002) pointed out that there is a higher rate of suicide

among 'blue-collar' single or divorced male workers (e.g. manual-workers, farmers).

However, when demographic covariates are controlled, increased rates are no longer evident.

Summary

The findings of this study indicate that long work hours without sufficient social interactions may increase stress levels for migrant factory workers in China. Current study indicates that living in poor hosing conditions, workers may experience increased depressive symptomatology. Female migrant factory workers were found to be more likely to be depressed by prolonged hours of work, crowded dormitory living, and deprivation of social support.

Implications

This study examined the relationship between work hours, stress, and depressive symptoms among migrant factory workers in China. Implications of this study's findings suggest that reducing work hours may improve health for workers. A periodic check upon the mental health status of migrant factory workers may be necessary in order to maintain their psychological well being.

The first finding of the current study indicates a significant relationship between stress and prolonged work hours among migrant factory workers in China. Clinical and pastoral counselors could, therefore, point out the negative effects of prolonged work hours to human psychological heath. This may encourage over-worked patients to reduce

their work hours and to maintain a more healthy balanced work schedule as a way to lower their stress levels.

The second finding shows a significant relationship between depression and prolonged work hours among migrant factory workers in China. Clinical/pastoral counselors could note that prolonged work hours may be linked to depression. This information may encourage over-worked clients to reduce their work hours and may result in lowering their depressive symptomatology. With reduced work hours, migrant factory workers may have more time to interact with others outside of factory environment and to cultivate relationship/support from the greater community. The third finding of the current study suggests a significant relationship between stress and depression among migrant factory workers in China. In view of this finding, clinical/pastoral diagnosis of depressed clients could include a self report survey to find out the levels of stress of patients. Identifying and reducing certain stressors may help to decrease depressive symptomatolgy of individuals.

Recommendations for Practice

The hope of this present research study is that it will broaden the understanding of migrant factory workers in China. With these results, similar factory owners are encouraged to decide how they could best provide for their workers as stress and depression will potentially be a part of their experiences. Three recommendations are made based on the findings of this study.

First, factory owners should avoid prolonged work hours and weekend work shift

for migrant factory workers. The association between stress and work hours found in this study suggests that prolonged work hours are a risk factor for stress in migrant factory workers. Potential workers can be informed of the potential for increased risk of stress for prolonged work hours. Workers may then choose between overtime hours and standard work hours.

Second, factory management could establish social and community involvements for migrant factory workers in China. "Satisfaction on environmental conditions" seemed to be a common predictor for job satisfaction, and mental and physical well-being. One suggestion is to assess and provide social support networks for migrant factory workers in China. Social support decay is one of the key factors leading to depression for migrant factory workers. Also, improving factory environment, appearance, and atmosphere to be more migrant worker friendly could ease migrant workers from their sense of marginalization. Religious activities may also be therapeutic for migrant workers.

Third, factory owners should create educational seminars that offer practical strategies to help migrant factory workers cope with changes in their new environments. The main sources of stress were intrinsic to the job, and the coping strategies that were most frequently used to tackle stress were "control" methods. Encouraging workers to socialize outside of work could help to ventilate their stress and frustration from work. Cognitive and behavioral psycho-education could enhance migrant workers' ability to handle work stress. Psychological counseling services should be made available in factories with over five hundred workers. Regular tests should be carried out to monitor and ensure the psychological health of migrant factory workers in China.

Summary

Overall, the findings from the current study indicated that prolonged work hours(a chronic stressor) was strongly associated with depressive symptoms among migrant
factory workers in China. This study also identified specific buffering factors for
decreasing stress and depressive symptomatology among these workers e.g., better living
quarters, family/marital support, and provision of social activities within the factory
compound including interest classes, club activities, and religious functions (fellowship
groups, Bible studies and prayer meetings). Social support may therefore play a
mediating role between work hours and stress. The current findings show that dormitory
living was a significant factor in increasing stress and depressive symptomatology among
migrant factory workers in China. Living in a confined dormitory deprived factory
workers from the opportunities to interact socially with the outside community and
increased the likelihood for them to work longer hours.

Limitations

Limitations of the study include cultural biases, lack of generalizability due to limited selection of participants, retrospective self reporting measurement tool biases, and cross sectional research design issues. One significant limitation of the current study arises from the cultural barriers of the participants towards the survey questions. In the face-saving culture of China, the willingness and transparency of Chinese migrant workers to express their depressive feelings and to disclose their stressful experiences are questionable (Kessler, 1997, pp. 193-194). In the Chinese culture, private information

and personal feelings are not easily disclosed to others. This raises a question about the accuracy of the data gathered from these migrant workers.

Generalizability of these findings is limited due to the choice of participants.

Workers from other regions of China may have responded to prolonged work hours differently. This current study focused only on migrant workers in the two largest regions in China, Shanghai and GuangZhou. Due to the limitation of data collection, gneralizability of current research findings could be compromised.

Limitations in this study also derive from measurement issues. The instruments used (LCU-Life-Change-Unit; Miller & Rahe, 1997) and (BDI-Beck Depression Inventory; Beck, 1967) are both designed for Western society. When used in China, cultural and language barriers could arise leading to misinterpretation of questions and may result in misinformation given.

Since this is a cross sectional study, the conclusions could be biased since they are based on observations made at only one time period (Abramson, 2002). The disadvantage of a cross sectional study compared to a longitudinal study is that a cross sectional study takes place at a single point in time whereas a longitudinal study involves data collected over a period of time. Thus, a Time-1 and Time-2 study design may result in a more accurate measure of stress and depressive symptoms for workers who were engaged in prolonged work hours.

In this study, any social support received by the workers from local relatives and religious groups was not considered. Personal data information collected from these workers suggested that some of them had relatives living in the same city; the support

they received from their relatives may have influenced the outcomes of this study. For those workers who were religious, they could have sought help from their religious groups to counter work related issues. These factors that may mitigate the outcome of the research were not considered.

Because this is retrospective self—report research, information gathered relies heavily on a participant's differential recollection of past stressful-life events that is subjective and may be biased or inaccurate. One of the serious deficiencies in using a self-report checklist approach is the confounding factors created by individual subjective responses to the survey questions. Results of this study are to be interpreted with caution due to several potential confounding factors (e.g. personal issues at home, individual readjustment issues, prior stress issues, coping skills issues, or personality trait issues) Results may not be generalized to other migrant factory workers in China. If replicated, this type of study should try to control for potential confounding variables, attempt to gather baseline data of stress and depressive symptoms, and attempt to match stressors more closely with specific symptoms.

Recommendations for Future Research

A need exists for longitudinal studies and consideration of factors which the worker brings to the workplace (psychosocial issues, personality traits), as well as interpersonal issues, in future studies. Stress and personal problems are related in a bidirectional fashion; one affects the other. Personality traits could also help to determine how one handles stressful events at work. Without personal interviewing of individuals

regarding their present personal issues and personality type testing, it would be difficult to account for the impact of these factors on stress and depressive level of factory workers in this study.

More research is needed to determine if these findings can be replicated with other migrant factory workers in different regions of China. Similar studies of migrant factory workers analyzing work hours, stress and depression have been limited. Based on this study, it would seem that factory workers and owners would benefit from evaluating the stress and depression levels and work hours of each worker. Potential results of replicated studies investigating the stress and depression levels of migrant factory workers who work prolonged hours may lead to the improvement of psychological health.

More research, with other factories comparing their living quarter conditions and stress/depression level of factory workers, would be helpful in revealing the buffering effects of social support among stressed migrant factory workers. In order to substantiate findings of this study that "poor living conditions" is an important factor affecting stress level and depressive symptoms of workers, the same design study should be replicated in a better factory living environment to test if improved living conditions would help to lower stress and depressive symptoms among workers with prolonged work hours. It is clear from this study's main effects that dorm-living was positively related with stress and depressive symptoms in migrant factory workers in China. This provides the basis for future program evaluations needed for factory owners to assess living conditions for their workers.

Future research could utilize a similar research design as used in this study but

with a larger sample with a variety of different types of factories. This study only focused on two regions in China-Shanghai and GuangZhou. There is a need for additional research to determine if these findings can be replicated in other parts of China

Research could also inquire about the stress levels/depressive symptoms of management staff in factories of China to assess how stress and depression affects management style in factories of China. There are some methodological factors (e.g. self reporting biases) in life stress studies, which may contribute to at least a partially confounded relationship between life stress and depression (Monroe, Harkness, Simons, & Thase, 2001). Research with appropriate life event assessments and a prospective design could help to eliminate the problem.

Future research could apply a different research design with a time-1 and time-2 research design for stress levels and depressive symptoms. The multiple time-test design could lead to more accurate results than the current cross sectional design. More research with other factories in China, comparing and implementing social support programs in every factory of China may enhance the psychological well being of migrant factory workers.

Research could focus on examining the fit between the worker's abilities and the job demands, and between the worker's goals and aspirations. Future studies could be carried out to examine differences in depression rate among different occupations. The current research is a cross-sectional study which makes it impossible to distinguish between cause and effect over time. More longitudinal studies are needed to determine the relationship between work hours and depression among migrant factory workers in

China.

On examining individual personality and genetic factors and their effects on life stress and depression, future studies could focus on different personality and background variables that were unaccounted for in the current study which could have affected stress and depressive symptoms of migrant factory workers. Research indicates that different personality types interact differently with stressful events (Epstein & Katz, 1992). For example, some people are more likely than others to ask for help and therefore social competence and efficacy should be considered in future research. Kendler and his colleagues (1993) pointed out that both genetic factors and childhood familial environment separately contributed about 20% of the variance in life stressors experienced and both also influenced social support and risk of depression

Finally, research could also investigate the relationship between stress and coping skills of individuals. Folkman, Lazarus, Gruen, and DeLongis (1986) describe coping skills as a cognitive transactional relationship between a person and his or her threatening environment. It involves the process of initial evaluation of the threat, accounting for potential resources to reduce, minimize, master or tolerate the threat.

Summary

In addition to investigation of the relationship between work hours, level of stress, and depressive symptoms for migrant factory workers in China, this study also examined gender differences, marital status, family support, living environment, and social interaction as factors that mitigate stress levels and depressive symptoms associated with

prolonged work hours among migrant factory workers. The results of this study suggest that prolonged work hours may increase stress levels and depressive symptomatology for migrant factory workers in China. The current study also find gender differences, social supports and housing stressor to be important factors affecting the stress levels and depressive symptoms among migrant factory workers in China. Several recommendations for practice derived from the above findings are included: decrease work hours, improve dormitory living conditions, organize in-house social activities, and provide mental health services for workers. Limitations of current study and recommendations for further research are mentioned in this chapter.

REFERENCES

- Abner, A. (1996). The teen girls' survival guide. New York: Harper-Perennial.
- Abramson, L.Y., Alloy, L. B., Hankin, B. L., Haeffel, G. J., MacCoon, D. G., & Gibb, B. E. (2002). Cognitive vulnerability-stress models of depression in a self-regulatory and psychobiological context. In I.H. Gotlib, & C.L. Hammen (Eds.), *Handbook of depression*, (pp. 113-117). New York: Guilford.
- Abramson, L. Y. Metalsky, G. I., & Alloy, L. B. (1989). Hopelessness depression: A theory-based subtype of depression. *Psychological Review*, *96*, 358-372.
- Abramson, L. Y., Seligman, M. E. P., & Teasdale, J. 1978. Learned helplessness in humans: Critique and reformulation. *Journal of Abnormal Psychology*, 87, 49-74.
- Aiken, L. S., & West, S. G. (1991). *Multiple regression: Testing and interpreting interactions*. Newbury Park, CA: Sage.
- Ajdukovic, M. (1998). Displaced adolescents in Croatia: Sources of stress and posttraumatic stress reaction. *Adolescence*, *33*, 209–217.
- Aldwin, C. M. (1994). Stress, coping, and development: An integrative perspective. New York: Guilford.
- American Psychiatric Association. (2000). *Diagnostic and statistical manual of mental disorders* (4th eds.). Washington, DC: Author.
- Andrade, L., Gorenstein, C., Vieira Filho, A. H., Tung, T. C. & Artes, R. (2001). Psychometric properties of the Portuguese version of the state-trait anxiety inventory applied to college students: Factor analysis and relation to the Beck Depression Inventory. *Brazilian Journal of Medical and Biological Research*, *34*, 367-374.
- Antonovsky, T. C. (1990). Social supports and social relationships. In R. M. Binstock & L. K. George (Eds.), *Handbook of aging and the social sciences*, 3rd ed. (pp. 205-227). San Diego, CA: Academic Press.
- Arredondo, P. (1992). Promoting the empowerment of women through counseling interventions. *Counseling and Human Development*, 24, 1-12.
- Aseltine, R. H. & Kessler, R. C. (1993). Marital disruption and depression in a community sample. *Journal of Health and Social Behavior*, *34*, 237-51.

- Azocar, F., Arean, P., Miranda, J., & Munoz, R. (2001). Differential item functioning in a Spanish translation of the Beck Depression Inventory. *Journal of Clinical Psychology*, *57*, 355-365.
- Baider, L., Peretz, T., Hadani, P., Perry, S., Avramov, R., & De-Nour, K. (2000). Transmission of response to trauma: Second-generation Holocaust survivors' reaction to cancer. *American Journal of Psychiatry*, *157*, 904–910.
- Baker, J. A. (1998). Are we missing the forest for the trees? Considering the social context of school violence. *Journal of School Psychology*, *36*, 29-44.
- Bandura, A. 1988. Self-conception of anxiety. *Anxiety Research*, 1, 77-98.
- Bandura, A., & Jourden, F. J. (1991). Self-regulatory mechanisms governing the impact of social comparison on complex decision making. *Journal of Personality and Social Psychology*, 60, 941-951.
- Barnett, P., & Gotlib, I. (1990). Cognitive vulnerability to depressive symptoms among men and women. *Cognitive Therapy and Research*, *14*, 47–61.
- Barnett, P.A., & Gotlib, I. H. (1988). Psychosocial functioning and depression: Distinguishing among antecedents, concomitants, and consequences. *Psychological Bulletin*, 104, 97-126.
- Barney, J. (1991). Firm resources and sustained competitive advantage. *Journal of Management*, 17, 99-120.
- Baron, P., & Campbell, T. (1993). Gender differences in the expression of depressive symptoms in middle adolescents: An extension of earlier findings. *Adolescence*, 8, 903-911.
- Baron, P., & Joly, E. (1988). Sex differences in the expression of *depression* in adolescents. *Sex Roles*, 18, 1-7.
- Barnow, S., Linden, M., Lucht, M., & Freyberger, H. (2002). The importance of psychosocial factors, gender, and severity of depression in distinguishing between adjustment and depressive disorders, *Journal of Affective Disorders*, 72, 71–78.
- Bartelstone, J. H., & Trull, T. J. (1995). Personality, life events, and depression. *Journal of Personality Assessment*, 64, 279–294.
- Baum, A., & Posluszny, D. M. (1999). Health psychology: mapping bio-behavioral. contributions to health and illness. *Annual Review of Psychology*, *50*, 137-163.

- Beach, L. R., & Morrison, D. (1989). Expectancy theory and image theory in the description of decisions about childbearing. In D.Brinberg & J.Jaccard (Eds.), *Dyadic decision making* (pp. 63–77). New York: Springer-Verlag.
- Beach, S. R. H., Sandeen, E. E., & O'Leary, K. D. (1990). *Depression in Marriage*. New York: Guilford Press.
- Bebbington, P., Brugha, T., McCarthy, B., Potter, J., Sturt, E., Wykes, T.et al. (1988). The Camberwell Collaborative depression Study I. Depressed probands: Adversity and the form of depression *British Journal of Psychiatry*, *152*, 754–765.
- Bebbington, P. G., & MacCarthy, B. (1993). Stress incubation and the onset of affective disorder. *British Journal of Psychiatry*, 162, 358-362.
- Bebbington, P., Hurry, J., & Tennant, C. (1988). Adversity and the symptoms of depression. *International Journal of Social Psychiatry*, *34*, 163–171.
- Bebbington, P., Tennant, C., & Hurry, J. (1981). Adversity and the nature of Psychiatric disorder in the community. *Journal of Affective Diseases*, *11*, 345–366.
- Beck, A. T. (1967). *Depression: Clinical experimental and theoretical aspects*. New York: Harper & Row.
- Beck, A. T. (1983). Cognitive therapy of depression: New perspectives. In P. J. Clayton & J. E. Barrett (Eds.), *Treatment of depression: Old controversies and new approaches* (pp. 265–290). New York: Raven Press.
- Beck, A.T. (1987). Cognitive models of depression. *Journal of Cognitive Psychotherapy*, 1, 2-27.
- Beck, A. T., Rush, A. J., Shaw, B., & Emery, G. (1979). *Cognitive therapy of depression*. New York: Guilford Press.
- Beck, A. T., Steer, R. A., Ball, R., & Ranieri, W. F. (1996). Comparison of Beck Depression Inventory- I-A and II in psychiatric outpatients. *Journal of Personality Assessment*, 67, 588-597.
- Beck, A.T., Steer, R. A., & Garbin, M.G. (1988). Psychometric properties of the Beck Depression Inventory: Twenty-five years of evaluation. *Clinical Psychology Review*, 8, 77-100.
- Beck, A. T., Ward, C. H., Mendelson, M., Mock, J., & Erbaugh, J. (1961). An inventory for measuring depression. *Archives of General Psychiatry*, *4*, 561–571.

- Beehr, T. A., & Gupta, N. (1987). Organizational management style, employee supervisory status, and employee responses. *Human Relations*, 40, 45-58.
- Beehr, T. A., King, L. A., & King, D. W. (1990). Social support, and occupational stress: talking to supervisors. *Journal of Vocational Behavior*, *36*, 6–81.
- Berman, A., & Jobes, D. (1992). Suicidal behavior of adolescents. In B. Bongar (Ed.), *Suicide: Guidelines for assessment, management, and treatment* (pp. 84-105). New York: Oxford.
- Berry, J. W., & Kim, U. (1988). Acculturation and mental health. In J. W. Berry, P. Dasen, & N. Sartorius (Eds.), *Health and cross-cultural psychology* (pp. 207-233). Newbury Park: SAGE.
- Bierut, L., Heath, A., & Bucholz, K. (Eds.). (1999). Major depressive disorder in a community-based twin sample: are there different genetic and environment contributions for men and women? *Archives of General Psychiatry*, *57*, 557–563.
- Bifulco, A., Bernazzani, O., & Moran, P. (2000). Lifetime stressors and recurrent depression: preliminary findings of the adult .*Social Psychiatry and Psychiatric Epidemiology*, *35*, 264–275.
- Bifulco, A., Brown., G. W., Moran, P., Ball, C., & Campbell, C. (1998). Predicting depression in women: The role of past and present vulnerability. *Psychological Medicine*, 28, 39-50.
- Billings, A. G., Cronkite, R. C., & Moos, R. H. (1983). Social-environmental factors in unipolar depression: Comparisons of depressed patients and non-depressed controls. *Journal of. Abnormal. Psychology*, 92, 119-133.
- Blazer, D. G. (1983). Impact of late life depression on the social network. *The American Journal of Psychiatry*, 140, 162-166.
- Blazer, D. G. (1987). Stressful life events and the onset of a generalized anxiety syndrome. The *American Journal of Psychiatry*, 144, 1178.
- Blazer, D. G., Kessler, R. C., McGonagle, K. A., Swartz, M. S., & Talbott, John, A. (1996). The Prevalence and Distribution of Major Depression in a National Community Sample: The National Comorbidity Survey. *Psychiatry & Applied Mental Health.* 7, 203-204.

- Bloom, J.A., & Spiegel, D. (1984). The relationship of two dimensions of social support to the psychological well-being and social functioning of women with advanced breast cancer. *Social Science Medicine*, 19, 831–837.
- Bohle, P., & Tilley, A. J. (1990). The impact of night work on psychological well-being. *Ergonomics*, 32, 1089 1099.
- Bolger, N., & Zuckerman, A. (1995). A framework for studying personality in the stress process. *Journal of Personality and Social Psychology*, 69, 890–902.
- Bornstein, R. F. (1995). Interpersonal dependency and physical illness: The mediating roles of stress and social support. *Journal of Social and Clinical Psychology*, *14*, 225–243.
- Bosch, G. (1999). Working time: Tendencies and emerging issues. *International Labor Review*, 138, 131-150.
- Brandon, D. (1976). Zen in the art of helping. London: Routledge & Kegan Paul.
- Brockington, I., Martin, C., & Brown G. (1990). Stress and puerperal psychosis. *British Journal of Psychiatry*, 157, 331–334.
- Brown, G. D., & O'Rourke, D. (2003). Experiments in transforming the global workplace: Incentives and impediments to improving workplace conditions in China. *International Journal of Occupational Environmental Health*, *9*, 378-385.
- Brown, G., & Moran, P. (1994). Clinical and psychosocial origins of chronic depressive episode: A community survey. *British Journal of Psychiatry*, *165*, 447–45.
- Brown G. W. (1991). Aetiology of depression: Something of the future? In P. E. Bebbington (Ed.), *Social Psychiatry: Theory, methodology, and practice* (pp. 35-63). New Brunswick, NJ: Transaction.
- Brown, G. W. (1996). Genetics of depression: A social science perspective. *International Review of Psychiatry*, 8, 387-401.
- Brown, G. W. (2000). Emotion and clinical depression: An environmental view. In M. Lewis & J. M. Haviland-Jones (Eds.), *Handbook of emotions* (2nd ed., pp. 75–90). New York: Guilford Press.
- Brown, G.W., & Harris, T. (1998). Social origin of depression: A study of psychiatric disorders in woman. London: Tavistock.

- Brown, G. W., & Harris, T. (1982). Fall-off in the reporting of live events. *Social Psychiatry*, 17, 23–28.
- Brown, G. W., & Harris, T. O. (1978). Social origins of depression: A study of psychiatric disorder in women. New York: Free Press.
- Brown, G. W., & Harris, T. O. (Ed.). (1989). *Life events and illness*. New York: Guilford Press.
- Brown, G.W., Harris, T.O., & Eales, M.J. (1996). Social factors and comorbidity of depressive and anxiety disorders. *British Journal of Psychiatry Supplement*, 30, 50–57.
- Brown, G. W., Harris, T. O., & Hepworth, C. (1994). Life events and endogenous depression: A puzzle reexamined. *Archives of General Psychiatry*, *51*, 525–534.
- Brown, L. (1986). Gender-role analysis: A neglected component of psychological assessment. *Psychotherapy*, 23, 243-248.
- Brown, L. (1991). Ethical issues in feminist therapy: Selected topics. *Psychology of Women Quarterly*, 15, 323-336.
- Brown, L. (1994). Subversive dialogues: Theory in feminist therapy. New York: Basic Books.
- Brown, L., & Gilligan, C. (1992). *Meeting at the crossroads: Women's psychology and girls' development*. Cambridge, MA: Harvard University Press.
- Brugha, T., Bebbington, P., Stretch, D., MacCarthy, B., & Wykes, T. (1997). Predicting the short-term outcome of first episodes and recurrences of clinical depression: a prospective study of life events, difficulties, and social support networks. *Journal of Clinical Psychiatry*, 58, 298–306.
- Brugha, T. S., & Cragg, D. (1990). The List of Threatening Experiences: The reliability and validity of a brief life events questionnaire. *Acta Psychiatrica Scandinavica*, 82, 77–81.
- Buck, V. (1972). Working under pressure. London: Staples Press.
- Burke, R. J. (1988). Sources of managerial and professional stress in large organizations. In C. L. Cooper & R. Payne (Eds.), *Causes, coping and consequences of stress at work*. New York: Wiley.

- Burke, R. J. (1998). Correlations of job insecurity among recent business school graduates. *Employee Relations*, 20, 92-100.
- Burns, D., & Nolen-Hoeksema, S. (1991). A structural equation model. *Journal of Affective Disorders*, 10, 67-75.
- Burns, D., & Nolen-Hoeksema, S. (1992). Therpeutic empathy and recovery from depression in cognitive behavioral therapy. *Journal of Consulting and Clinical Psychology*.63, 441-449.
- Burns, J. M. (1978). Leadership. New York: Harper & Row.
- Burtynsky, E. (2007). The job in China. *Time*, 170, 24.
- Bush, B. (1999). Major life events as risk factors for post-stroke depression. *Brain Injury*; *13*, 131–137.
- Butler, M. (1985). Guidelines for feminist therapy. In L.B. Rosewater & L.E. Walker (Eds.), *Handbook of feminist therapy: Women's issues in psychotherapy* (pp. 32-38). New York: Springer.
- Buunk, B. P., & Verhoeven, K. (1991). Companionship and support at work: A microanalysis of the stress-reducing features of social interaction. *Basic and Applied Social Psychology*, 12, 243-258.
- Cameron, K., Freeman, S., & Mishra, A. 1993. Organizational downsizing. In George P. Huber & William H. Glick (eds.) *Organizational change and redesign: Ideas and insights for improving performance* (19-65). New York: Oxford University Press.
- Carlton, J. (2002). Blue collar workers and suicide rate. *American Journal of Public Health*, 92, 7.
- Carter, R., & Parks, E. (1996). Womanist identity and mental health. *Journal of Counseling and Development*, 74, 484-489.
- Cartwright, S., & Cooper, C. L. (1993). The psychological impact of merger and acquisitions on the individual: A study of building society managers. *Human Relations*, 46, 327-347.
- Cervilla, J., & Prince, M. (1997). Cognitive impairment and social distress as different pathways to depression in the elderly: A cross-sectional study. *Internal Journal of Geriatric Psychiatry*, 12, 995–1000.

- Chan, C. M., & Tsoi, M. M. (1984). The BDI and stimulus determinants of cognitive-related depression among Chinese college students. *Cognitive Therapy and Research*, *8*, 501–507.
- Chao, E. (2003). Dangerous work: Women in traffic. Modern China, 29, 711-717.
- Cheng, A., & Cooper, C. L. (1985). Psychosocial factors in breast cancer stress. *Medicine*, 1, 61–66.
- Cheng, C. (1997). Role of perceived social support on depression in Chinese adolescents: A prospective study examining the buffering model. *Journal of Applied Social Psychology*, 27, 800–820.
- Cheng, S. K., & Lam, D. J. (1997). Relationships among life stress, problem solving, self-esteem, and dysphoria in Hong Kong adolescents: Test of a model. *Journal of Social and Clinical Psychology*, *16*, 343–355.
- Cheng, S.T. (1992). Loneliness-distress and physician utilization in well-elderly females. *Journal of Community Psychology*, 20, 43-56.
- Cheung, S., Sun, S. Y. K., Mak, Y., & Fung, W. (1997). Sociotropy/autonomy and differential effects of social support on psychological well-being. *Psychologia: An International Journal of Psychology in the Orient*, 40, 112–120.
- Chiu, M. L., Feldman, S. S., & Rosenthal, D. (1992). The influence of immigration on parental behavior and adolescent distress in Chinese families residing in two Western nations. *Journal of Research on Adolescence*, 2, 205–240.
- Chou, K., & Chi, I. (2001). Stressful life events and depressive symptoms: social support and sense of control as mediators or moderators. *International Journal of Aging and Human Development*, 52, 155–171.
- Chow, R. (1991). Woman and Chinese modernity: The politics of reading between West and East. Minneapolis: University of Minnesota Press.
- Clark, D. A., Beck, A.T., & Alford, B. A. (1999). Scientific foundations of cognitive theory and therapy of depression. New York: Wiley.
- Clark, D. A., Beck, A. T., & Brown, G. K. (1992). Sociotropy, autonomy, and life event perceptions in dysphoric and nondysphoric individuals. *Cognitive Therapy and Research*, *16*, 635–652.
- Cobb, J. S., & Harlin, M. M. (1976). *Marine Ecology Selected Readings*. London:

- University Park Press.
- Coffey, L. C., Skipper, Jr., & Jung, R. N. (1988). Effects on job performance and jobrelated stress. *Journal of Advanced Nursing*, *13*, 245-254.
- Cohen, J. (1988). *Statistical power analyses for the behavioral sciences*. Hillsdale, NJ: Erlbaum.
- Cohen, J. A. (1960). A coefficient of agreement for nominal scales. *Educational and Psychological Measurement*, 20, 37–46.
- Cohen, J., & Cohen, P. (1983). *Applied multiple regression/correlation analysis for the behavioral sciences*. Hillsdale, NJ: Erlbaum.
- Cohen, J., Cohen, P., West, S. G., & Aiken, L. S. (2003). *Applied multiple regression/correlation analysis for the behavioral science* (3rd ed.). Hillside, NJ: Lawrence Erlbaum.
- Cohen, S., & Wills, T. A. (1985). Stress, social support, and the buffering hypothesis. *Psychological Bulletin*, *98*, 310–357.
- Coltrane, S. (2000). Modeling and measuring the social embeddedness of routine family work. *Journal of Marriage and Family*. 62, 1208-1233.
- Compas, B. E., Banez, G. A., Malcarne, V., & Worsham, N. (1991). Perceived control and coping with stress: A developmental perspective. *Social J. Social Issues* 47, 23-34.
- Compas, B. E., Connor-Smith, J. K., Thomsen, A. H., Saltzman, H., & Wadsworth, M. E. (2001). Coping with stress during childhood and adolescence: Progress, problems, and potential in theory and research. *Psychological Bulletin*, *127*, 87–127.
- Conlin, M., & Roberts, D. (2007). Go go going to pieces in China. *Business Week*, 403, 88.
- Connor-Smith, J. K., Compas, B. E., Wadsworth, M. E., Thomsen, A. H., & Saltzman, H. (2000). Responses to stress: Measurement of coping and involuntary stress responses. *Journal of Consulting and Clinical Psychology*, 68, 976–992.
- Conway, V. J., & Terry, D. J. (1992). Appraised controllability as a moderator of the effectiveness of different coping strategies: A test of the goodness of fit hypothesis. *Australian Journal of Psychology*, 44, 1-7.
- Cooke, D. J. (1982). Depression: demographic factors in the distribution of different

- syndromes in the general population. Social Psychiatry, 17, 29–36.
- Cooper, C. L., Dewe, P. J. & O'Driscoll, M. P. (2001). *Organizational Stress. A Review and Critique of Theory, Research, and Applications*. Sage: Thousand Oaks, CA.
- Cooper, J., Appleby, L & Amos, L. (2002). Life events preceding suicide by young people. *Social Psychiatry and Psychiatric Epidemiology*, *37*, 271–275.
- Cooper, P., & Goodyear, I. (1993). A community study of depression in adolescent girls. *Journal of Psychiatry*, 163, 369-374.
- Coryell, W., Endicott, J., Andreasen, N., &. Keller, M. (1985). Bipolar I, bipolar II and non bipolar major depression among the relatives of affectively ill probands. *American Journal of Psychiatry*, 142, 817–821.
- Costello, C.G. (1982). Social factors associated with depression. A retrospective community study. *Psychological Medicine*, *12*, 329–339.
- Coyne, J. C. (1994). Self-reported distress: Analog or ersatz depression. *Psychological Bulletin*, *116*, 29-45.
- Coyne, J. C., & DeLongis, A. (1986). Going beyond social support: The role of social relationships in adaptation. *Journal of Consulting and Clinical Psychology*, 54, 454–460.
- Coyne, J. C., & Whiffen, V. E. (1995). Issues in personality as diathesis for depression: The case of sociotropy-dependency and autonomy-self criticism. *Psychological Bulletin*, *118*, 358–378.
- Cronkite, R.C., & Moos, R. H. (1995). Life context, coping processes, and depression. In E.E. Beckham & W. R. Leber (Eds.), Handbook of depression (pp. 569-587). New York: Guilford Press.
- Crowther, J. H. (1985). The relationship between depression and marital maladjustment: a descriptive study. *Journal of Nervous Mental disorders*. *173*, 227–231.
- Culbertson, F. M. (1997). Depression and gender. American Psychologist, 52, 25-31.
- Daley, E., Hammen, C., & Rao, U. (2000). Predictors of first onset and recurrence of major depression in young women during the 5 years following high school graduation. *Journal of Abnormal Psychology*, 109, 525-533.
- Dalgard, O., Bjork, S., & Tambs, K. (1995). Social support, negative life events and

- mental health. British Journal of Psychiatry, 166, 29–34.
- Davis, D. S., Kraus, R., Naughton, B., & Perry, E. J. (Eds.). (1995). *Urban spaces in contemporary China: The potential for autonomy and community in post-Mao China*. Cambridge: Cambridge University Press.
- DeLongis, A., Coyne, J., Dakof, G., Folkman, S., & Lazarus, R. S. (1982). Relationship of daily hassles, uplifts, and major life events to health status. *Health Psychology, 1*, 119-136.
- Dent, J., & Teasdale, J, (1988). Negative cognitions and the persistence of *depression*. *Journal of Abnormal Psychology*, 97, 29-34.
- Derogatis, L. R. (1983). *SCL-90-R: Administration, scoring and procedures manual II*. Towson, MD: Clinical Psychometric Research.
- Dirlik, A. (1994). Marxism in the age of flexible production. In A. Dirlik, A. After the revolution: Waking to global capitalism (pp. 60-84). Hanover: Wesleyan University Press.
- Dohrenwend, B. P. (1998). *Adversity, stress, and psychopathology*. New York: Oxford University Press.
- Dohrenwend, B. P. (2000). The role of adversity and stress in psychopathology: Some evidence and its implications for theory and research. *Journal of Health and Social Behavior*, 41, 1-19.
- Dohrenwend, B. P., Leav, I., Shrout, P. E., Schwartz, S., Naveh, G., Link, B, G., Skodol, A. E., & Stueve, A. (1992). Socioeconomic status and psychiatric disorders: The causation-selection issue. *Science*, 255, 946-952.
- Dohrenwend, B. P., Link, B. G., Kern, R., Shrout, P. E., & Markowitz, J. (1990). Measuring life events: The problem of variability within event categories. *Stress Medicine*, 6, 179-187.
- Dohrenwend, Bruce P.; Lennon, Mary Clare; Kenny, David A. (1995). The examination of face pain and its relationship to psychological distress among women. *Health Psychology*, 14, 223-231.
- Dohrenwend, B. S., Krasnoff, L., Askenasy, A. R., & Dohrenwend, B. P. (1978). Exemplification of a method for scaling life events: The PERI life events scale. *Journal of Health and Social Behavior, 19*, 205-229.

- Doi, Y., & Minowa, M. (2003). Gender differences in excessive daytime sleepiness among Japanese workers. *Social Science & Medicine*, *5*, 883.
- Dolan, R. J., Calloway, S. P., Fonagy, P., De Souza, F. V. A., & Wajekubgm A. (1985).
 Life events, depression and hypothalamic-pituitary-adrenal axis function. *British Journal of Psychiatry*, 147, 429-433.
- Donovan, J. M., Dressler, D. M., & Geller, R. A. (1975). Psychiatric crisis. *Journal of Nervous Mental Disorders*, 161, 172.
- Dowlatshahi, D., & Paykel, E. (1990). Life event and social stress in puerperal psychoses. *Absence of Effect Psychological Medicine*, 20, 655–662.
- Droppleman, P., & Wilt, D. (1993). Women, *depression*, and anger. In S. Thomas (Eds.), *Women and anger* (pp. 209-232). New York: Springer.
- Dutton, G. R., Grothe, K. B., Jones, G. N., Whitehead, D., Kendra, K., & Brantley, P. J. (2004). Use of the Beck Depression Inventory–II with African American primary care patients. *General Hospital Psychiatry*, 26, 437–442.
- Duncan, G. J., & Hoffman, S. D. (1985). A reconsideration of the economic consequences of marital dissolution. *Demography*, 22, 485-497.
- Duval, T. S., Duval, V. H., & Mulilis, J. (1992). Effects of self-focus. discrepancy between self and standard, and outcome expectancy favorability on the tendency to match self to standard or to withdraw. *Journal of Personality and Social Psychology*, 62, 340-348.
- Earnshaw, J., & Cooper, C. L. (1996). *Stress and employer liability, law and employment series*. London: Institute of Personnel and Development.
- Eaton, R. J. (2008). The role of gender and negative affectivity in stressor appraisal and coping selection. *International Journal of Stress Management*, 15, 94-115.
- Eckenrode, J. (1984). The impact of chronic and acute Stressors on daily reports of mood. *Journal of Personality and Social Psychology, 46*, 907-918.
- Eckenrode, J., & Bolger, N. (1997). Daily and within-day event measurement, In S. Cohen, R. C. Kessler and L. U. Gordon (eds.), *Measuring Stress. A Guide for Health and Social Scientists* (pp. 80-101). New York: Oxford University Press.
- Edwards, J. R. (1992). A cybernetic theory of stress, coping, and well-being in organizations. *Academy of Management Review*, 17, 238-274.

- Ellis, P., & Murphy, B. C. (1994). The impact of misogyny and homophobia on therapy with women. In M. Mirkin (Ed.), *Women in context: Toward a feminist reconstruction of psychotherapy* (pp. 48-73). New York: Guilford.
- Employee Assistance Professionals Association, Employee benefits, 1996 Report.
- Enns, C. Z. (1993). Twenty years of feminist counseling and therapy: From naming biases to implementing multifaceted practice. *Counseling Psychologist*, 21, 3-87.
- Ensel, W., & Lin, N. (1993). Distal stressors and the life stress process. *Journal of Community Psychology*, 24, 66–82.
- Ensel, W. M., & Lin, N. (1991). The life stress paradigm and psychological distress. *Journal of Health and Social Behavior*, 32, 321-341.
- Epstein, S., & Katz, L. (1992). Coping ability, stress, productive load, and symptoms. *Journal of personality and social psychology*, 62, 826-836.
- Espin, O. (1994). Feminist approaches. In L. Comas-Diaz & B. Greene (Eds.), *Women of color: Integrating ethnic and gender identities in psychotherapy* (pp. 265-286). New York: Guilford.
- Fallows, J. (2007). Stress and work environment. Archives, 9, 25.
- Farmer, K., Redman, T., Harris, A., Mahmood, S., & McGuffin, P. (2001). Sensation-seeking, life events and depression. The Cardiff Depression Study. *British Journal of Psychiatry*, *178*, 549–552.
- Fei, X. T. (1989). Rural development in China: Prospects and retrospect. Chicago: Chicago University Press.
- Feske, U., Shear, M. K., Anderson, B., Cyranowski, J., Strassburger, M., Matty, M., et al. (2001). Comparison of severe life stress in depressed mothers and non-mothers: do children matter. *Depressive Anxiety*, *13*, 109–117.
- Finch, A., Casat, C., & Carey, M. (1990). Depression in children and adolescents. In S. Morgan & T. Okwumabua (Eds.), *Child and adolescent disorders: Developmental and health psychology perspectives* (pp. 135-133). Hillsdale, NJ: Lawrence Earlbaum Associates.
- Fink, G. (ed.) 2000. Encyclopedia of Stress. New York: Academic Press.
- Flannery, R. B., & Perry, J. C. (1990). Self-rated defense style, life stress, and health

- status. Journal of Clinical Psychology, 46, 415-20.
- Fletcher, G. F. (1992). Statement on Exercise. American Heart Association, 86, 340-344.
- Folkman, S., Lazarus, R. S., Dunkel-Schetter, C., DeLongis, A., & Gruen, R. (1986). Dynamics of a stressful encounter: Cognitive appraisal, coping, and encounter outcomes. *Journal of Social Psychology*, *50*, 992-1003.
- Frank, E., Anderson, B., Reynolds, C. F., Ritenour, A., & Kupfer, D. J. (1994). Life events and the research diagnostic criteria endogenous subtype: A confirmation of the distinction using the Bedford College methods. *Archives of General Psychiatry*, 48, 851-855.
- Frank, T., Prien, R. F., Jarrett, R. B., Keller, M. B., Kupfer, D. J., Lavorie, P. W., et al. (1991). Conceptualization and rationale for consensus definitions of terms in major depressive disorder. *Archives of General Psychiatry*, 48, 851-855.
- Frateschi, L. J., & Fumer, S. E. (1993). Cost of health care and sources of payment. In J.F. Van Nostrand, S.E. Furner, & R. Suzman (Eds.), *Health data on older Americans*, (pp. 209-226). Washington, DC: U.S. Government Printing Office.
- French, J. R. P., Jr., Caplan, R. D., & Harrison, R. V. (1982). *The mechanisms of job stress and strain*. New York: Wiley.
- Friedman, R. J., & Katz, M. M. (1988). The psychology of depression: Contemporary theory and research. *Journal of Early Adolescence*, 8, 109-117.
- Friis, R., Wittchen, H., Pfister, H., & Lieb, R. (2002). Life events and changes in the course of depression in young adults. *European Psychiatry*, 17, 241–253.
- Fritze, J., Schneider, B., & Maurer, K. (1996). Additive effects, but no synergistic interaction of stressful life-events and genetic loading in affective disorders. *Journal of Neural Transmission*, 103, 1221–1229.
- Furakawa, T., Sarason, I. G., & Sarason, B. R. (1998). Social support and adjustment to a novel social environment. *International Journal of Social Psychiatry*, 44, 56-70.
- Ganster, D. C., Schaubroeck, J., Sime, W. E., & Mayes, B. T. (1990). Unhealthy leader dispositions, work group strain and performance. *Academy of Management*, *1*, 191-195.
- Garnefski, N., Van Egmond, J., & Straatman, M. (1990). The influence of early and recent life stress on severity of depression. *Acta Psychiatrica Scandinavica*, 81,

- 295-301.
- Gatz, M., Pederson, N., Plomin, R., & Nesselroade, JR. (1992). Importance of shared genes and shared environments for symptoms of depression in older adults. *Journal of Abnormal Psychology*, 101, 710–708.
- Gazzaniga, M. S. (2002). Extensive individual differences in brain activations associated with episodic retrieval are reliable over time. *Journal of Neurosurgery* 23, 394-399.
- Ge, X., Lorenz, F., & Conger, R. (1994). Trajectories of stressful life events and depressive symptoms during adolescence. *Developmental Psychology*, *30*, 467–483.
- Geisser, M.E., Roth, R. S., & Robinson, M. E. (1997). Assessing depression among persons with chronic pain using the center for epidemiological studies depression scale ad the Beck Depression Inventory. *Clinical Journal of Pain*, 13, 163-167.
- Gilligan, C. (1982). In a different voice: Women's conceptions of self and of morality. *Harvard Educational Review*, 47, 481-517.
- Giovanni, C. (1996). The impact of shift and night work on health. *Applied Ergonomic*, 27, 1.
- Glass, D. C. McKnight, J. D. & Valdimarsdottir, H. (1993). Depression, burnout, and perceptions of control in hospital nurses. *Journal of Consulting and Clinical Psychology*, 61, 147-155.
- Gore, S., & Colten, M.E. (1991). Gender, stress, and distress: Social relationship influences. In J. Eckenrode (Ed.), *The social context of coping* (pp. 139-163). New York: Plenum.
- Gotlib, I. H., Lewinsohn, P. M., & Selley, J. R. (1995). Symptoms versus a diagnosis of depression: Differences in psychosocial functioning. *Journal Consulting and Clinical Psychology*, 63, 90-100.
- Grebner, S., Semme, N. K. & Elfering, A. (2003). Working Conditions and Well-Being Among Young Workers: A Longitudinal Study with Self-Report and Rating Data. Manuscript submitted for publication. Switzerland.:University of Berne,
- Greene, B. (1994). Diversity and difference: Race and feminist psychotherapy. In M. Mirkin (Ed.), *Women in context: Toward a feminist reconstruction of psychotherapy* (pp. 333-351). New York: Guilford.
- Haaga, D., Fine, A. F., Terrill, J. A., Stewart, D., & Beck, A. T. (1995). Social problem-

- solving deficits, dependency, and depressive symptoms. *Cognitive Therapy and Research*, 19, 147–158.
- Haggerty, B. M., & Williams, A. R. (1999). The effects of sense of belonging, social support, conflict, and loneliness on depression. *Nursing Research*, 48, 215-219.
- Hamilton, J., & Jensvold, M. F. (1995). Sex and gender as critical variables in feminist psychopharmacology research and pharmacotherapy. *Women and Therapy*, 16(1), 9-30.
- Hamilton, M. (1960). A rating scale for depression. *Journal of Neurology, Neurosurgery*, and Psychiatry, 23, 56-62.
- Hammen, C. (1991). Generation of stress in the course of unipolar depression. *Journal of Abnormal Psychology*, 100, 555–561.
- Hammen, C. (1995). The social context of risk of depression. In K. D. Craig & K. S. Dobson (Eds), *Anxiety and depression in adults and children* (pp. 82-96). Thousand Oaks, CA: Sage.
- Hammen, C. (2001). Vulnerability to depression in adulthood. In R. E. Ingram & J. M. Price (Eds.), *Vulnerability to psychopathology: Risk across the lifespan* (pp. 226-257). New York: Guilford Press.
- Hammen, C., Ellicott, A., & Gitlin, M. (1989). Vulnerability to specific life events and prediction of course of disorder in unipolar depressed patients. *Canadian Journal of Behavioral Science*, 21, 377–388.
- Hammen, C., Henry, R., & Daley, S. (2000). Depression and sensitization to stressors among young women as a function of childhood adversity. *Journal of Consulting and Clinical Psychology*, 68, 782–787.
- Hammen, C., Mayol, A., deMayo, R., & Marks, T. (1986). Initial symptom levels and the life-event-depression relationship. *Journal of Abnormal Psychology*, 95, 114–122.
- Hammond, W., & Romney, D. (1995). Cognitive factors contributing to adolescent *depression. Journal of Youth and Adolescence*, 24, 667-683.
- Hankin, B. L., Abramson, L.Y., Moffitt, T. E., Silva, P., McGee, R., & Angell, K. E.
 (1998). Development of depression from preadolescence to young adulthood:
 Emerging gender differences in a 10-year longitudinal study. *Journal of Abnormal Psychology*, 107, 128-140.

- Harkness, K., & Luther, J. (2001). Clinical risk factors for the generation of life events in major depression. *Journal of Abnormal Psychology*, 110, 564–572.
- Hays, J. C., Krishnan, K. R., George, L. K., Pieper, C. F., Flint, E. P., & Blazer, D. G. (1997). Psychosocial and physical correlates of chronic depression. *Psychiatry Research*, 72, 149–159.
- Hays, J. C., Landerman, L. R., George, L. K., Flint, E. P., Koenig, H. G., Land, K. C., et al. (1998). Social correlates of the dimensions of depression in the elderly. *Journal of Psychological Science*, *53*, 31–39.
- Heim, C., Newport, D., Wagner, D., Wilcox, M., Miller, A., & Nemeroff, C. B. (2002). The role of early adverse experience and adulthood stress in the prediction of neuroendocrine stress reactivity in women: a multiple regression analysis, *Depression and Anxiety*, 15, 117–125.
- Helmchen, H. (1985). The AMDP. In: Pinocht, P., Berner, P., Wolf, R., Thau, K. (Eds.), Psychiatry: The State of the Art, Vol. 1: *Clinical Psychopathology, Nomenclature and Classification* (pp. 141–146). New York: Plenum.
- Hirschfield, R. M., & Shea, T. (1992). Time to recovery, chronicity and levels of psychopathology in major depression. *General Psychiatry*, 49, 10.
- Hirschfeld, R. M. A., & Cross, C. K. (1982). Epidemiology of affective disorders. Psychosocial risk factors. *Archive of General Psychiatry*, *39*, 39–46.
- Ho, C. (1999). Toward a redefinition of the Content of Chinese women. *Imperial China*, *1*, 145-59
- Hobfoll, S. E. (2001). The influence of culture, community, and the nested-self in the stress process: Advancing conservation of resources theory. *Applied Psychology: An International Review*, *50*, 337-421.
- Hobson, C. J., Kamen, J., Szostek, J., Nethercut, C. M., Tidemann, J. W., and Wojnarowicz, S. (1998). "Stressful Life Events: A Revision and Update of the Social Readjustment Rating Scale." *International Journal of Stress Management* 5, 1-23.
- Hoel, H., & Cooper, C. L. (2000). Destructive conflict and bullying at work. *Manchester School of Management*, Unpublished report.
- Hoel, H., Rayner, C., & Cooper, C. L. (1999). Workplace bullying. In C. L. Cooper & 1. T. Robertson (Eds.), *International review of industrial and organizational*

- psychology. Chichester, UK: Wiley.
- Hofferth, S. L., Smith, J., McCloyd, V. C., & Finkelstein, D. J. (2000). Achievement and behavior among children of welfare recipients, welfare leavers, and low-income single mothers. *Journal of Social Issues*, *56*, 747-74.
- Holahan, C. J., & Moos, R. H. (1990). Life Stressors, resistance factors, and improved psychological functioning: An extension of the stress resistance paradigm. *Journal of Personality and Social Psychology*, 58, 909-917.
- Holland, J. L. (1996). Exploring careers with a typology: what we have learned and some new directions. *American Psychologist*, *51*, 397-406.
- Holmes, J. A., & Stevenson, C. A. (1990). Differential effects of avoidant and attentional coping strategies on adaptation to chronic and recent-onset pain. *Health Psychology*, 9, 577–584.
- Holmes, T. H. (1979). Development and application of a quantitative measure of life change magnitude. In J. E. Barrett, R. M., Rose, & G. L. Klerman (Ed.), *Stress and mental disorder* (pp. 37-53). New York: Raven Press.
- Holmes, T. H., & Rahe, R. H. (1967). The social Readjustment Rating Scale. *Journal of Psychosomatic Research*, 11, 213-218.
- Hong, M., & Li, L. (2007). The mental health status of Chinese rural-urban migrant workers; comparison with permanent urban and rural dwellers. *Social Psychiatry and Psychiatric Epidemiology*, 42, 716-717.
- House, J. S., Landis, K. R., & Umberson, D. (1987). Social relationships and health. *Science*, 241, 540–545.
- House, R. J., Hanges, P. J., Javidan, M., Dorfman, P. W., & Gupta, V. (2004). *Culture, Leadership, and Organizations: The GLOBE Study of 62 Societies*. Thousand Oaks, CA: Sage.
- House, R. J., & Rizzo, J. R. (1972). Toward the measurement of organizational practices: scale development and validation. *Journal of Applied Psychology*, *56*, 388–396.
- Hu, T. W. (2004). The economic burden of depression and reimbursement policy in the Asia Pacific region. *Australas Psychiatry*, *8*, 11-15.
- Hu, Y. (1997). Re-Configuring Nei/Wai: Writing the woman traveler in the late Qing. *Late Imperial China*, *18*, 72-99.

- Husain, N., Tomenson, B., & Creed, F. (2000). Depression and social stress in Pakistan. *Psychology Medicine*, *30*, 395–402.
- Iacovides, A., Fountoulakis, K., Fotiou, F., & Kaprinis, G. (2002). Relationship of personality disorders to DSM-IV subtypes of major depression. *Canadian Journal of Psychiatry*, 47, 196–197.
- Isacsson, G. (2000). Suicide prevention-a medical breakthrough. *Acta Psychiatrica Scandinavica*, 102, 113–117.
- Jack, D. (1991). Silencing the self: Women and depression. New York: Harper Perennial.
- Jack, D., & Dill, D. (1992). The silencing the self scale: Schemas of intimacy associated with depression in women. *Psychology of Women Quarterly*, *16*, 22.
- Jackson, D. N. (1978). *The Personality Research Form manual*. Goshen, NY: Research Psychologists' Press.
- Jackson, S., & Schuler, R. (1985). A meta-analysis and conceptual critique of research on role ambiguity and role conflict in work settings. *Organizational Behavior and Human Decision Processes*, *36*, 16–78.
- Jackson, S.E., Schwab, R.L., & Schuler, R.S. (1986). Toward an understanding of the burnout phenomenon. *Journal of Applied Psychology*, 71, 630-640.
- Jackson-Triche, M. E., Sullivan, J. G., Wells, K. B., Rogers, W., Camp, P., & Mazel, R. (2000). Depression and health-related quality of life in ethnic minorities seeking care in general medical settings. *Journal of Affective Disorders*, 58, 89–97.
- Jackson, Y., & Frick, P. J. (1998). Negative life events and the adjustment of school-age children: Testing protective models. *Journal of Clinical Child Psychology*, 27, 370–380.
- Jamal, M. (1999). Job stress and employee well-being: a cross-cultural empirical study. *Stress Medicine*, *15*, 153–158.
- Johnson, J. G., Cohen, P., Dohrenwend, B. P., Link, B. G., & Brook, J. S. (1999). A longitudinal investigation of social causation and social selection processes involved in the association between socioeconomic status and psychiatric disorders. *Journal of Abnormal Psychology*, *108*, 490-499.
- Johnson, L., Andersson-Lundman, G., Aberg-Wistedt, A., & Mathe, A. A. (2000). Age of onset in affective disorder: its correlation with hereditary. *Journal of Affective*

- Disorders, 59, 139–148.
- Johnson, S., Monroe, S., Simons, A., & Thase, M. (1994). Clinical characteristics associated with interpersonal depression: symptoms, course and treatment response. *Journal of Affective Disorders*, *31*, 97–109.
- Joober, R., Sengupta, S., Schmitz, N., Zalsman, G., Mann, J. (2007). Serotonin transporter, stressful life events, and depression. *American Journal of Psychiatry*, 164, 829-830.
- Jolly, J. B., Dyck, M. J., Kramer, T. A., & Wherry, J. N. (1996). The relations between sociotropy and autonomy, positive and negative affect and two proposed depression subtypes. *British Journal of Clinical Psychology*, 25, 91–101.
- Kaczmarek, M., & Backlund, B. (1991). Disenfranchised grief: The loss of an adolescent romantic relationship. *Adolescence*, 26, 253-259.
- Kahn, R. L., Wolfe, D. M., Quinn, R. P., Snoek, J. D., & Rosenthal, R. A. (1964). Organizational stress: Studies in role conflict and ambiguity. New York: Wiley.
- Kandola, R., & Fullerton, J. (1994). Diversity: more than just an empty slogan. *Personnel Management*, 26, 16-19.
- Kanner, A. D., Coyne, J. C., Schaefer, C., & Lazarus, R. S. (1981). Comparison of two modes of stress measurement: Daily hassles and uplifts versus major life events. *Journal of Behavioral Medicine*, *4*, 1-39.
- Karasek, R. A., Baker, D., Marxer, F., Ahlbom, A., & Theorell, T. (1981). Job decision latitude, job demands and cardiovascular disease: A prospective study among Swedish men. *American Journal of Public Health*, 71, 694-705.
- Karasek, R. A., & Theorell, T. (1990). *Healthy Work: Stress, Productivity and the Reconstruction of Working Life*. New York, NY: Basic Books.
- Karney, B. R., & Bradbury, T. N. (1995). Assessing longitudinal change in marriage: An introduction to the analysis of growth curves. *Journal of Marriage and the Family*, 57, 1091-1108.
- Kashani, J. H., Vaidya, A. F., Soltys, S. M., & Dandoy, A. C. (1990). Life events and major depression in a sample of inpatient children. *Comprehensive Psychiatry*, 31, 266–274.
- Kasl, S. V. (1992). Surveillance of psychological disorders in the workplace. In G. P.

- Keita and S. L. Sauter (eds.), *Work and Well-Being. An Agenda for the 1990s* (pp. 73-95). Washington, D. C.: American Psychological Association.
- Katz, R. J. (1983). Stress, conflict, and depression. In: J. Angst, *The Origins of Depression: Current Concepts and Approaches*, Berlin: Springer.
- Kaufmann, G. M., & Beehr, T. A. (1986). Interactions between job stressors and social support: some counterintuitive results. *Journal of Applied Psychology*, 71, 522–526.
- Keita, P., & Jones, J. M. (1990). Reducing adverse reaction to stress in the workplace: Psychology's expanding role. *American Psychologist*, 45, 1137-1141.
- Kelly, T., Soloff, P., Lynch, K., Haas, G., &. Mann, J. (2000). Recent life events, social adjustment, and suicide attempts in patients with major depression and borderline personality disorder. *Journal of Personality Disorders*, 14, 316–326.
- Kendall, T., Whittington, C., & Pilling, S. (2005). Are the SSRIs and atypical antidepressants safe and effective for children and adolescents? *Current Opinion in Psychiatry*, 18, 21-25.
- Kendler, K., Gardner, C., & Prescott, C. (2002). Toward a comprehensive developmental model for major depression in women. *American Journal of Psychiatry*, 159, 1133–1145.
- Kendler, K., Karkowski, L., & Prescott C. (1999). Causal relationship between stressful life events and the onset of major depression. *American Journal of Psychiatry*, 156, 837–841.
- Kendler, K., Kessler, R., & Walters, E. (1995). Stressful life events, genetic liability, and onset of an episode of major depression. *American Journal of Psychiatry*, *52*, 833–842.
- Kendler, K., Neale, M., Kessler, R., Health, A., & Eaves, L. (1993). A twin study of recent life events and difficulties. *Archives of General Psychiatry*, 50, 789–796.
- Kendler, K., & Prescott, C. (1998). Stressful life events and major depression: risk period, long-term contextual threat, and diagnostic specificity. *Journal of Nervous and Mental Disorders*, 186, 661–669.
- Kendler, K., Thornton, L., & Gardner, C. (2000). Stressful life events and previous episodes in the etiology of major depression in women: an evaluation of the 'kindling' hypothesis. *American Journal of Psychiatry*, 157, 1243–1251.

- Kendler, K., Thornton, L., & Prescott C. (2001). Gender differences in the rates of exposure to stressful life events and sensitivity to their depressogenic effects. *American Journal of Psychiatry*, 158, 587–593.
- Kendler, K. S., Myers, J., & Prescott, C. A. (2005) Sex differences in the relationship between social support and risk for major depression: a longitudinal study of opposite-sex twin pairs. *American Journal of Psychiatry*, 162, 250–256.
- Keppel, G. (1992). *Design and Analysis: A Researcher's Handbook*. Englewood Cliffs, NJ: Prentice-Hall.
- Kessler, R. (1997). The effects of stressful life events on depression. *Annual Review of Psychology*, 48, 191–214.
- Kessler, R.C., Barber, C. B., Birnbaum, H. G., Frank, R. G., Greenberg, P. E., Rose, R. M., et al. (1999). Depression in the workplace: effects on short-term work disability. *Health Affect*, 18, 163-171.
- Kessler, R. C., & Greenberg, D. F. (1981). *Linear panel analysis: Models of quantitative change*. New York: Academic Press.
- Kessler, R. C. & Magee, W. J. (1994). Childhood family violence and adult recurrent *Journal of Health and Social Behavior*, *35*, 13-27.
- Kessler, R. C., McGonagle, K. A., Berglund, P. A., Cleary, P. D., McKenas, D., Pronk, N., Simon, G., Stang, P., Üstün, T. B., & Wang, P. S. T. (2003). The World Health Organization Health and Work Performance Questionnaire (HPQ). Journal of *Occupation and Environmental Medicine*, 45, 156–74.
- Kessler, R. C., McGonagle, K. A., Zhao, S., Nelson, C. B., Hughes, M., Eshleman, S., Wittchen, H., & Kendler, K. S. (1994). Lifetime and 12-month prevalence of *DSM-III-R* psychiatric disorders in the United States: Results from the National Comorbidity Survey. *Archives of General Psychiatry*, *51*, 8–19.
- Kessler, R. C., Price, R. H., & Wortman, C. B. (1985). Social factors in psychopathology: Stress, social support and coping processes. *Annual Review of Psychology*, *36*, 531-572.
- Kimberly, J. A., & Serovich, J. M. (1996). Social *interaction and* social support. *Journal of Social Issues*, 40, 55-76.
- Kingston, P., & Nock, S. L. (1987). Time together among dual-earner couples. *American Sociological Review.* 52, 391-400.

- Kirmayer, L. J., & Young, A. (1998). Culture and somatization: clinical, epidemiological, and ethnographic perspectives. *Psychosomatic Medicine*, 60: 420-30.
- KlermanG. L., & Weissman, M. M. (1989). Increasing rate of depression. *Journal of American Medical Association*, 261, 15.
- Kohn, R., Donhrenwend, B. P., & Mirotznik, J. (1998). Epidemilogical findings on selected psychiatric disorders in the general population. In B. Dohrenwend (Ed.), *Adversity, Stress, and psychopathology* (pp. 235-284). New York: Oxford University Press.
- Kohn, Y., Zislin, J., Agid, O., Hanin, B., Troudart, T., Shapira, B., Bloch, M., et al. (2001). Increased prevalence of negative life events in subtypes of major depressive disorder. *Comprehensive Psychiatry*, 42, 57–63.
- Kopper, B., & Epperson, D. (1994). The experience and expression of anger: Relationships with gender, gender role socialization, *depression*, and mental health functioning. *Journal of Counseling Psychology*, 43, 158-165.
- Kornstein, S. G., & Schatzberg, A. F. (2000). Gender differences in chronic major and double depression. *Journal of Affective Disorders*, 60, 1–11.
- Kovacs, M. (1989). Depression in children and adolescents. *American Psychologist*, 44, 209–215.
- Kovacs, M., Golston, D. B., Obrosky, D. S., & Ivengar, S. (1995). A longitudinal study of life events and metabolic control among youths with insulin-dependent diabetes. *Health Psychology*, 14, 409-414.
- Kraaij, V., Kremers, I., & Arensman, E. (1997). The relationship between stressful and traumatic life events and depression in the elderly. *Crisis*, 18, 86–88.
- Kraepelin, E. (1921). *Manic-depressive insanity and paranoia*. Edinburgh, UK: E. & S. Livingstone.
- Kraepelin, E. (1921). Prototypic typology and the borderline personality disorder. *Journal of Abnormal Psychology*, 92, 263-275.
- Krause, N. (1994). Stressors in salient social roles and well-being in later life. *Journal of Gerontology: Psychological Sciences*, 49, 137-148.
- Kurz, D. (2002). *Poor Urban Mothers and the Care of Teenage Children*. New York: Routledge.

- LaFrance, M. (1991). School for scandal: Different educational experiences for females and males. *Gender and Education*, *3*, 3-13.
- Laidlow, T., & Malmo, C. (1990). Introduction: Feminist therapy and psychological healing. In T. Laidlaw, C. Malmo, & Associates (Eds.), *Healing voices: Feminist approaches to therapy with women* (pp. 1-12). San Francisco: Jossey-Bass.
- Lakey, B., & Heller, K. (1988). Social support from a friend, perceived support, and social problem solving. *American Journal of Community Psychology, 16*, 6.
- Landrine, H. (1988). *Depression* and stereotypes of women: Preliminary empirical analyses of the gender-role hypotheses. *Sex Roles*, 19, 527-541.
- Langa, K. M., Valenstein, M. A., Fendrick, A. M., Kabeto, M. U., & Vijan, S. (2004). Caregiving for older Americans with symptoms of depression. *American Journal of Psychiatry*, 161, 857-863.
- Lara, M. E., Leader, J., & Klein, D. N. (1997). The association between social support and course of depression: is it confounded with personality. *Journal of Abnormal Psychology*, 106, 478–482.
- Lauer, C., Zerssen, D., Schreiber, W., Modell, S., Holsboer, F., Krieg, J. C. (1998). The pre-morbid psychosometric profile is stable over-time in subjects at high familial risk for affective disorders. *Journal of Affective Disorders*, *51*, 45–53.
- Lazarus, R. S. (1993). Coping theory and research: Past, present, and future. *Psychosomatic Medicine*, *53*, 234-247.
- Lazarus, R. S. (1999). *Stress and Emotion: A New Synthesis*. London: Free Association Books.
- Lazarus, R. S., & Folkman, S. (1984). *Stress, coping, and adaptation*. New York: Springer.
- Leary, M. R., & Kowalski, R. M. (1995). Social anxiety. New York: Guilford Press.
- Lefort, C. (1986). *The political forms of modern sociology: Bureaucracy, Democracy, Totalitarianism.* Cambridge: MIT Press.
- Lewinsohn, P., Hoberman, H. M., & Rosenbaum, M. (1988). A prospective study of risk factors for unipolar depression. *Journal of Abnormal Psychology*, 97, 251–264.
- Lewinsohn, P. M., Clarke, G. N., Seeley, J. R., & Rohde, P. (1994). Major depression in

- community adolescents: Age at onset, episode duration, and time to recurrence. Journal of the American Academy of Child and Adolescent Psychiatry, 33, 809–818.
- Lewinsohn, P. M., Gotlib, I. H., Allen, N. B., & Seeley, J. R. (1996). *The specificity of antecedents of first episodes of depression during adolescence* Paper presented at the annual meeting of the Society for Research in Psychopathology, Atlanta, Georgia.
- Lewinsohn, P. M., & Hoberman, H. M. (1982). Depression. In: A.S. Bellack, M. Hersen, A. E. Kazdin. *International Handbook of Behavior Modification and Therapy* (pp. 133-135). New York: Plenum.
- Lewis, A. J. (1971). Endogenous and exogenous: A useful dichotomy? *Psychological Medicine*, 1, 191-196.
- Liberman, R. P., Corrigan, P. W., Schade, M. L. (1989). Occupational stress, social support, and the buffer hypothesis. *International Review of Psychiatry*, 1, 283-295.
- Lin, N., Woelfel, M. W., & Light, S. C. (1985). The stress process. *Journal of health and social behavior*, 22, 337-356.
- Lindeman, M., & Verkasalo, M. (1995). Personality, situation, and positive negative asymmetry in socially desirable responding. *European Journal of Personality*, 9, 125 134.
- Liu, K. (1996). Is there an alternative to Capitalist globalization? The debate about modernity in China. *Boundary*, 2, 193-218.
- Livianos-Aldana, L., Rojo-Moreno, L., Cervera-Martinez, G., & Dominguez-Carabantes, J. A. (1999). Temporal evolution of stress in the year prior to the onset of depressive disorders. *Journal of Affective Disorders*, *53*, 253–262.
- Lloyd, C. (1980). *Life events* and depressive disorder reviewed: *Events* as predisposing factors. *Archives of General Psychiatry*, *37*, 529–535.
- London, A. S., Scott, E. K., & Hunter, V. (2002). *Health-related carework for children in the context of welfare reform*. New York: Routledge.
- Lonnqvist, J. K. (2000). Psychiatric aspects of suicidal behavior: depression. In: Hawton K., Heeringen, K., eds. *International handbook of suicide and attempted suicide*. *Chichester*: (pp.107-120). New York: John Wiley &Sons.
- Lorenz, F. O., & Melby, J. N. (1994). Analyzing family stress and adaptation: Methods of

- study. In R. D. Conger & G. H. Elder, Jr. (Eds.), *Families in troubled times: Adapting to change in rural America* (pp. 21-54). New York: Aldine.
- Lu, L., Huang, M, S., X, S. F., Liu, Z., Li, J., Zhang, D., & Yin, H. (1998). The study of emotional disorders. *Internal medicine*. *31*, 234-236.
- Lu, L., Tseng, H., & Cooper, C. L. (1999). Managerial stress, job satisfaction, and health in Taiwan. *Stress Medicine*, *15*, 53–64.
- Lucht, M., & Kaspar, S. (1999). Gender differences in seasonal affective disorder (SAD). *Archive of Women Mental Health*, 2, 83–89.
- MacCallum, R. C., & Mar, C. M. (1995). Distinguishing between moderator and quadratic effects in multiple regression. *Psychological Bulletin*, *118*, 405–421.
- Maciejewski, P. K., Prigerson, H. G., & Mazure, C. M. (2001). Sex differences in event-related risk for major depression. *Psychological Medicine*, *31*, 93–604.
- Mahatme, S., Dhavale, H., & Patkar, A. (1989). Study of correlation of intensity of symptoms with stressful life events in depressed patients. *Indian Journal of Psychiatry*, 31, 288–292.
- Maier, W. (1999). Gender differences in the prevalence of depression: a survey in primary care. *Journal of Affective Disorders*, 53, 241–252.
- Malkoff-Schwartz, S., Anderson, B., & Sherrill, J. (1998). Stressful life events and social rhythm disruption in the onset of manic and depressive bipolar episodes. *Archives of General Psychiatry*, 55, 202–707.
- Marks, M., Wiecke, A., Checkley, S., & Kumar, R. (1991). Life Stress and post-partum psychosis: a preliminary report. *British Journal of Psychiatry*, *158*, 45–49.
- Marmot, M. G., Bosma, H., Hemmingway, H., Brunner, E., & Stansfeld, S. (1997). Contribution of job control and other risk factors to social variations in coronary heart disease incidence. *Lancet*, *350*, 235-239.
- Marmot, M., Theorell, T., & Siegris, J. (2002). Work and coronary heart disease. In S. Stansfeld and M. Marmot (Eds.), *Stress and the Heart: Psychosocial Pathways to Coronary Heart Disease (pp. 50-71)*. London: BMJ Books.
- Marsella, A. J. & A. Dash-Schreuder. (1988). Coping culture and healthy development: A research and conceptual overview. In: P.R. Dasen, J.W. Berry & N. Sartorius (Eds), *Health and Cross-Cultural Psychology* (pp. 163–179). Sage: Newbury Park.

- Maruyama, S., Kohno, K., & Morimoto, K. (1995). A study of preventive medicine in relation to mental health among middle-management employees (Part 2)-Effects of long working hours on lifestyles, perceived stress and working-life satisfaction among white-collar middle-management employees. *Japanese Journal of Hygiene*, 50, 849-860.
- Mazure, C., Bruce, M., Maciejewski, P., & Jacobs, S. (2000). Adverse life events and cognitive-personality characteristics in the prediction of major depression and antidepressant response. *American Journal of Psychiatry*, 157, 896–903.
- Mazure, C. M. (1998). Life stressors as risk factors in depression. *Clinical Psychology*, *Science and Practice*, *5*, 291-313.
- McArdle, J. J. (1986). Dynamic but structural equation modeling with repeated measures data. In J. R. Nesselroade & R. B. Cattell (Eds.), *Handbook of multivariate* experimental psychology (pp. 561-614). New York: Plenum.
- McDonald, A., Pugh, W., Gunderson, E., & Rahe, R. (1972). Reliability of life change cluster scores, *British Journal of Clinical and Social Psychology*, 11, 407–409.
- McElroy, S. L., Keck, P. E. Jr., Pope, H. G. Jr., Hudson, J. I., Faedda, G. L., & Swann. (1992). Frequency of Dysphoria and mixed states. *American Journal of Psychiatry*, 149, 1633-1644.
- McEwen, B. S. (1998). Protective and damaging effects of stress mediators. *New England Journal of Medicine*, *338*, 171-179.
- McGonagle, K., & Kessler, R. (1990). Chronic stress, acute stress, and depressive symptoms. *American Journal of Community Psychology*, 18, 681–706.
- McGrath, E., Keita, G., Strickland, B., & Russo, N. (1990). Women and depression: Risk factors and treatment issues: Final report of the American Psychological Association's National Task Force on Women and Depression. Washington, DC: American Psychological Association.
- McGue, M., & Christensen, K. (1997). Genetic and environmental contributions to depression symptomatology: evidence from Danish twins 75 years of age and older. *Journal of Abnormal Psychology*, 106, 439–448.
- McGuffin, P., Katz, R., & Watkins, S. (1996). A hospital-based twin register of the heritability of DSM-IV unipolar depression. *Archives of General Psychiatry*, *53*, 129–136.

- McKenry, P., Kotch, J., & Symons, M. (1990). Mediators of depression among low-income, adolescent mothers of infants: a longitudinal perspective. *Journal of Youth Adolescence*, 19, 327–347.
- McQuaid, J. R., Monroe, S. M., Roberts, J. E., & Johnson, S. L. (1992). Toward the standardization of life stress assessment: Definitional discrepancies and inconsistencies in methods. *Stress Medicine*, *8*, 47-56.
- Metts, S., *Manns*, H., & *Kruzic*, L. (1996). Social support structures in persons who are seropositive. *Journal of Health Psychology*, 1, 367 382.
- Mghir, R., Freed, W., Raskin, A., & Katon W. (1995). Depression and posttraumatic stress disorder among a community sample of adolescent and young adult Afghan refugees. *Journal of Nervous Mental Disorders*, 183, 24–30.
- Michie, J., & Padayachee, V. (2002). Three years after Apartheid: Growth, employment and redistribution. *Cambridge Journal of Economics*, 22, 5.
- Milkie, M. A., M. J. Mattingly, M. J., Namaguchi, K. M., Bianchi, S. M., & Robinson, J. P. (2004). The time squeeze: parental statuses and feelings about time with children. *Journal of Marriage and Family*, 66, 39-61.
- Miller, J. B. (1991). The development of women's sense of self. In J. V. Jordan, A. G. Kaplan, J. B. Miller, I. P. Stiver, & J. L. Surrey (Eds.), *Women's growth in connection* (pp. 11-26). New York: Guilford.
- Miller, M., & Rahe, R. (1997). Life changes scaling for the 1990s. *Journal of Psychosomatic Research*, 43, 279-292.
- Mirkin, M. (1994). *Female* adolescence revisited: Understanding girls in their sociocultural context. In M. Mirkin (Ed.), *Women in context: Toward a feminist reconstruction of psychotherapy* (pp. 77-95). New York: Guilford.
- Mirowsky, J., & Ross, C. E. (1989). *Social causes of psychological distress*. New York: Aldine.
- Mitz, J. (1992). Role functioning and symptom remission in women with postpartum depression after antidepressant treatment. *Archives of Psychiatric Nursing*, 17, 276-283.
- Moerk, K., & Klein, D. (2000). The development of major depressive episodes during the course of dysthymic and episodic major depressive disorders: a retrospective examination of life events. *Journal of Affective Disorders*, 58, 117-123.

- Monroe, S., Harkness, K. Simons, A., & Thase, M. (2001). Life stress and the symptoms of major depression. *Journal of Nervous and Mental Disease*, 189, 168-175.
- Monroe, S., Kupfer, D., & Frank, E. (1992). Life stress and treatment course of recurrent depression: I. Response during index episode *Journal of Consultation Clinical Psychology*, 60, 718–724.
- Monroe, S. M. (1982). Life events assessment: Current practices, emerging trends. *Clinical Psychology Review*, 2, 435-453.
- Monroe, S. M. (1990). Psychosocial factors in anxiety and depression. In J. D. Maser & R. C. Cloninger (Eds.), *Comorbidity of mood and anxiety disorders* (pp. 463-497). Washington, DC: American Psychiatric Press.
- Monroe, S. M. (2000). Psychological stressors: Overview. In G. Fink (Ed.), *Encyclopedia of stress* (pp. 287-294). New York: Academic Press.
- Monroe, S. M., & Depue, R. A. (1991). Life stress and depression. In J. Becker & A. Kleinman (Eds.), *Psychosocial aspects of depression* (pp. 101-130). New York: Erlbaum.
- Monroe, S. M., & Handjiyannakis, K. (2002). The social environment and depression: Focusing on severe life stress. In I. H. Gotlib & C. L. Hammen (Eds.), *Handbook of depression*. New York: Guilford Press.
- Monroe, S. M., Harkness, K. L., Simon, A. D., & Thase, M. E. (2001). Life stress and the symptoms of major depression. *Journal of Nervous and Mental Disease*, 189, 168-175.
- Monroe, S. M., Kupfer, D. J., & Frank, E. F. (1992). Life stress and treatment course of recurrent depression: I. Response during index episode. *Journal of Consulting and Clinical Psychology*, 60, 718-724.
- Monroe, S. M., Roberts, J. E., Kupfer, D. J., & Frank, E. (1996). Life stress and treatment course of recurrent depression: II. Post-recovery associations with attrition, symptom course, and recurrence over 3 years. *Journal of Abnormal Psychology*, 105, 313-328.
- Monroe, S. M., Thase, M. E., & Simmons, A. D. (1992). Social factors and psychobiology of depression: Relations between life stress and rapid eye movement sleep latency. *Journal of Abnormal Psychology*, *101*, 528-537.
- Monroe, S. M., & Kelley, J. M. (1995). Measurement of stressful appraisal. In S. Cohen,

- R. C. Kessler, & L. U. Gordon (Eds.), *Measuring stress: A guide for health and social scientists* (pp. 122-147). New York: Oxford University Press.
- Monroe, S. M., & McQuaid, J. R. (1994). Measuring life stress and assessing its impact on mental health. In W. R. Avison & I. H. Gotlib (Eds.), *Stress and mental health: Contemporary issues and prospects for the future* (pp. 43-73). New York: Oxford University Press.
- Monroe, S. M., & Simmons, A. D. (1991). Diathesis stress in the context of life stress research: Implications for the depressive disorders, *Psychological Bulletin*, *110*, 406-425.
- Mozur, P. (2007). Hong Kong and China trade development. Far Eastern Economic Review, 170, 27.
- Mundt, C., Reck, C., Backenstrass, M., Kronmueller, K., & Fiedler, P. (2000). Reconfirmation of the role of life events for the timing ofdepressive episodes. A two-year prospective follow-up study. *Journal of Affective Disorders*, 59, 23–30.
- Mundt, C., Reck, C., Backenstrass, M., Kronmueller, K., & Fiedler, P. (2003). Reconfirmation of the role of life events for the timing of depressive episodes. *Journal of Affective Disorders*, 59, 23-30.
- Murray, C.J.L., & Lopez, A.D. (1996). *The Global Burden of Disease: A Comprehensive Assessment of Mortality and Disability*. Cambridge, Mass: Harvard University Press.
- Nanko, S., & Demura, S. (1993). Life events and depression in Japan. *Acta Psychiatrica candinavica*, 87, 184–187.
- Nathan, P., & Gorman, J. (Eds) (2008). *Treatments that work* (3rd ed). New York: Oxford University Press.
- National Institute of Mental Health. (2007). *Depression Awareness, Recognition, and Treatment Program*. Washington: U.S. Department of Health and Human Services.
- National Sleep Foundation. (2003). Day/night strategies for shift workers. Retrieved September 9, 2003, from www.sleepfoundation.org/publications/shiftworker/html
- Naughton, B. (1995). *Growing out of the plan: Chinese economic reform 1978-1993*. Cambridge: Cambridge University Press.
- Nazroo, J. Y., Edwands, A. C., & Brown, G. W. (1997). Gender differences in the onset of depression following a shared life events: A study of couples. *Psychological*

- Medicine, 27, 9-19.
- Nelson, J. C., & Charney, D. S. (1981). The symptoms of major depressive illness. *American Journal of Psychiatry*, *138*, 1–13.
- Nesse, R. M. (2000). Marital Quality and Psychological Adjustment to Widowhood Among Older Adults. *The Journals of Gerontology Series B: Psychological Sciences and Social Sciences*, 55, 197-207.
- Netemeyer, R. G., Boles, J. S., & McMurrian, R. (1996). Development and validation of work-family conflict and family-work conflict scales. *Journal of Applied Psychology*. 81, 400-410.
- Netemeyer, R. G., Johnston, M. W., & Burton, S. (1990). Analysis of role conflict and role ambiguity in a structural equations framework. *Journal of Applied Psychology*, 75, 148–157.
- Newman S., & Bland, R. (1994). Life events and the 1-year prevalence of major depressive episode, generalized anxiety disorder, and panic disorder in a community sample, *Comprehensive Psychiatry*, *35*, 7-82.
- Nolen-Hoeksema, S. (1990). *Sex differences* in *depression*. Stanford, CA: Stanford University Press.
- Nolen-Hoeksema, S. (1995). Epidemiology and theories of gender differences in unipolar *depression*. In M. Seeman (Ed.), *Gender and psychopathology* (pp. 89-112). Washington, DC: American Psychiatric Press.
- Nolen-Hoeksema, S., & Ahrens, C. (2002). Age differences and similarities in the correlates of depressive symptoms. *Psychology of Aging*, *17*, 116-124.
- Nolen-Hoeksema, S., & Girgus, J. (1994). The emergence of sex differences in depression in adolescence. *Psychological Bulletin*, *115*, 424-443.
- Nolen-Hoeksema, S., Parker, L. E., & Larson, J. (1994). Ruminative coping with depressed mood following loss. *Journal of Personality and Social Psychology*, 67, 92–104.
- Norris, F., & Murrell, S. (1990). Social support, life events, and stress as modifiers of adjustment to be eavement by older adults. *Psychology and Aging*, *5*, 429–436.
- Nurnberger, J. I. Jr., & Gershon, E. S. (1992). Genetics. In E. S. Paykel (Ed.), *Handbook of affective disorders* (2nd ed., pp. 131-148). New York: Guilford Press.

- O'Connor T., McGuire, S., Reiss, D., Hetherington, E.M., & Plomin, R. (1998). Cooccurrence of depressive symptoms and antisocial behavior in adolescence: a common genetic liability. *Journal of Abnormal Psychology*, 107, 27–37.
- Ohaeri, J., & Otote, D. (2002). Family history, life events and the factorial structure of depression in a Nigerian sample of inpatients. *Psychopathology*, *35*, 209-210.
- O'Hara, M.W., & Swain, A.M. (1996) Rates and risk of postpartum depression: a metaanalysis. *International Review of Psychiatry*, 8, 37–54.
- Oi, J. (1995). The role of the local state in China's transitional economy. *The China Quarterly*, 144, 1132-1149.
- Olinger, L., Kuiper, N., & Shaw, B. (1987). Dysfunctional attitudes and stressful life events: an interactive model of depression. *Cognitive Therapy and Research*, 11, 25–40.
- Olsen, O., Iversen, L., & Sabroe, S. (1991). Age and the operationalization of social support. *Social Science Medicine*, *32*, 767-771.
- Olsson, I., Nordstroem, M. L., & Arinell, H. (1999). Adolescent depression and stressful life events. *Nordic Journal of Psychiatry*, *53*, 339–346.
- Ong, A., & Nonini, D. (1997). *Ungrounded empires: The cultural politics of modern Chinese trans-nationalism*. New York: Routledge.
- Ormel, J., Neeleman, D., & Wiersma, E. (2001). Determinants of mental ill-health: implications for research and policy. *Dutch Journal of Psychiatry* 43, 245-257.
- O' Rourke, D. & Brown, G. D. (2003). Experiments in transforming the global workplace: incentives and impediments to improving workplace conditions in China. *International Journal of Occupational Environmental Health*, *9*, 378-385.
- Overholser, J., Norman, W., & Miller, H. (1990). Life stress and social supports in depressed in patients. *Behavioral Medicine*, *16*, 125–132.
- Palmer, S., & Dryden, W. (1995). *Counselling for stress problems*. Thousand Oaks, CA: Sage.
- Paniagua, F. A. (2000). Culture-bound syndromes, cultural variations, and psychopathology. In I. Cuellar & F. A. Paniagua (Eds.), *Handbook of multicultural mental health: Assessment and treatment of diverse populations* (pp.139–169). San Diego, CA: Academic.

- Parker, G. (1981). Parental characteristics in relation to depressive disorders. *British Journal of Psychiatry*, 134, 138-147.
- Parker, G. (1983). Parental "affectionless control" as an antecedent to adult depression. *Archives of General Psychiatry*, *34*, 138-147.
- Parker, G., Cheah, Y. C., & Roy, K. (2001). Do the Chinese somatize depression? A cross-cultural study. *Social Psychiatry and Psychiatric Epidemiology*, 36, 287-293.
- Parker, G., Rousson, J., & Wilhelm, K. (1998). On-melancholic depression: the contribution of personality, anxiety and life events to sub-classification. *Psychological Medicine*, 28, 1209–1219.
- Parker, G., Gladstone, G., & Chee, K.T. (2001). Depression in the planet's largest ethnic group: the Chinese American. *Journal of Psychiatry*, 158, 857-64.
- Parkes, K. R. (1986). Coping in stressful episodes: The role of individual differences, environmental factors, and situational characteristics. *Journal of Personality and Social Psychology*, *51*, 1277-1292.
- Pastore, D. R., Fisher, M., & Friedman, S. (1996). Violence and mental health problems among urban high school students. *Journal of Adolescent Health*, 18, 320-324.
- Paykel, E. (1976). Life stress, depression and attempted suicide. *Journal of Human Stress*, 2, 3-12.
- Paykel, E. (1983). Methodological aspects of life events research. *Journal of Psychosomatic Research*, 23, 341-352.
- Paykel, E. (1994). Life events, social support and depression. *Acta Psychiatrica Scandinavica*, *377*, 50-58.
- Paykel, E. (1997). The Interview for Recent Life Events. *Psychological Medicine*, 27, 301-310.
- Paykel, E. (2001). The evolution of life events research in psychiatry. *Journal of Affective Disorders*, 62, 141-149.
- Paykel, E. (2001). Stress and affective disorders in humans. *Seminars in Clinical Neuropsychiatry*, 6, 4-11.
- Paykel, E., Rao, B., & Taylor, C. (1984). Life stress and symptom pattern in out-patient depression, *Psychological Medicine*, *14*, 559-568.

- Paykel, E., Meyers, J., & Diendt, M. (1969). Life events and depression. *Archives of General Psychiatry*, 27, 753-760.
- Paykel, E., & Tanner, J. (1976). Life events, depressive relapse and maintenance treatment. *Psychological Medicine*, *6*, 481-485.
- Paykel, E. S. (1974). Life stress and psychiatric disorder: applications of the clinical approach. In: B. Dohrenwend and B. Dohrenwend, Editors, *Stressful Life Events: Their Nature and Effects*. New York: John Wiley & Sons.
- Paykel, E. S. (1987). Life events, social support and clinical psychiatric disorder. In: I.G. Sarasen and B.R. Sarasen, Editors, *Social Support, Theory, Research, Application*. The Netherlands: Martinus Nijhoff.
- Paykel, E.S. (1991). Depression in women. British. *Journal of Psychiatry*, Suppl., 22–29.
- Paykel, E. S. (2001). Stress and affective disorders in humans. *Neuropsychiatry*, 6, 4-11.
- Paykel, E. S. & Kennedy, N. (2004). Residual symptoms at remission from depression: impact on long-term outcome. *Journal of Affective Disorders*, 80, 135-144.
- Paykel, E. Z., Cooper, Z., Hayhurst, H. (1996). Life events, social support and marital relationships in the outcome of severe depression. *Psychological Medicine*, 26, 121-133.
- Peeters, M. C. W., Buunk, B. P., & Schaufeli, W. B. (1995). Social interactions, stressful events and negative affect at work: A micro-analytic approach. *European Journal of Social Psychology*, 25, 391-401.
- Peeters, M. C. W., Buunk, B. P., & Schaufeli, W. B. (1995). A micro-analytic exploration of the cognitive appraisal of daily stressful events at work: The role of controllability. *Anxiety, Stress, and Coping, 8*, 127-139.
- Perlick, P., & Silverstein, B. (1994). Faces of female discontent: Depression, disordered eating, and changing gender roles. In P. Fallon, M. Katzman, & S. Wolley (Eds.), *Feminist perspectives on eating disorders*. New York: Guilford.
- Perrez, M. (2001). Coping assessment. In N. J. Smelser and P. B. Baltes (eds.), *The International Encyclopedia of the Social and Behavioral Sciences* (pp. 2766-2770). Elsevier: Oxford, UK.
- Perry-Jenkins, M., Repetti, R. L., & Crouter, A. C. (2000). Work and Family in the 1990s. *Journal of Marriage and Family*, 62, 981.

- Petersen, A., Sarigiani, P., & Kennedy, R. (1991). Adolescent depression: Why more girls? *Journal of Youth and Adolescence*, 20, 247-270.
- Peterson, M. F., Smith, P. B., Akande, A., et al. (1995). Role conflict, ambiguity, and overload: a 21-nation study. *Academy of Management Journal*, 38, 429–452.
- Phelan, J., Bromet, E., & Dew, M. (1991). Work stress, family stress and depression in professional and managerial employees. *Psychological Medicine*, 21, 999–1012.
- Phillips, M. A., & Murrell, S. A. (1994). Impact of psychological and physical health, stressful events, and social support on subsequent mental health help seeking among older adults. *Journal of Consulting and Clinical Psychology*, 62, 270-275.
- Piccinelli, M., & Wilkinson, G. (2000). Gender differences in depression. *British Journal of Psychiatry*, 177, 486-492.
- Pike, J. L., Smith, T. L., Hauger, R. L., Nicassiol, P. M., Patterson, T. L., McClintick, J., Costlow, C., & Irwin, M. R. (1997). Chronic life stress alters sympathetic, neuroendocrine, and immune responsivity to an acute psychological stressor in humans. *Psychosomatic Medicine*, 59, 447-457.
- Pine, D., Cohen, P., Johnson, J. &. Brook, J. (2002). Adolescent life events as predictors of adult depression, *Journal of Affective Disorders*, 68, 49-57.
- Plomin, R. (1991). The nature of nurture: genetic influence on environmental measures. *Behavioral Brain Science*, *14*, 373–427.
- Plomin, R., Pederson, N., & McClearn, G. (1990). Genetic influence on life events during the last half of the life span. *Psychology and Aging*, *5*, 25–30.
- Post, R. (1992). Transduction of psychosocial stress into the neurobiological models of recurrence in mood disorders. *American Journal of psychiatry*, *149*, 999-1010.
- Post, R. M., & Weiss, S. R. B. (1999). Neurobiological models of recurrence in mood disorders. In D. S. Charney, E. J. Nestler, & B. S. Bunney (Eds.), Neurobiology of mental illness (pp. 365-384). New York: Oxford University Press.
- Prussoff, B., & Uhlenhuth, E. (1971). Scaling of life events. *Archives of General Psychiatry*, 25, 340-347.
- Rahe, R. (1969). Multi-cultural correlations of life change scaling: America, Japan, Denmark and Sweden. *Journal of Psychosomatic Research*, *13*, 191-197.

- Rahe, R. (1978). Life change measurement clarification. *Psychosomatic Medicine*, 40, 95-98.
- Rahe, R. (1979). Life change events and mental illness: an overview. *Journal of Human Stress*, 2–10.
- Rahe, R. (1994). The more things change. Psychosomatic Medicine, 56, 306-307.
- Rahe, R. (1995). Stress and psychiatry. In: H. Kaplan and B. Sadock, Editors, *Comprehensive Textbook of Psychiatry* (pp. 1545–1559). Baltimore: Williams & Wilkins.
- Rahe, R., Floistad, I., Bergan, T., Ringdal, R., Gerhardt, R., Gunderson, E., & Arthur, R. (1974). A model of life changes and illness research. *Archives of General Psychiatry*, *31*, 172-177.
- Rahe, R., Ryman, D., Ward, H. (1980). Simplified scaling for life change events. *Journal of Human Stress*, 22–27.
- Rahe, R., Veach, T., Tolles, R., & Murakami, K. (1999). The Stress and Coping Inventory: an educational and research instrument. *Stress Medicine*, *16*, 199-208.
- Rasmana, R., & Bebbington, P. (1995). Social influence on bipolar affective disorders. *Social Psychiatry Psychiatric Epidemiology*, *30*, 152–160.
- Ravindran, A., Matheson, A., Griffiths, K., Merali, Z., & Anisman, H. (2002). Stress, coping, uplifts, and quality of life in subtypes of depression: a conceptual frame and emerging data. *Journal of Affective Disorders*, 71, 121–130.
- Reed, M. (1994). Social skills training to reduce depression in adolescents. *Adolescence*, 29, 293-302.
- Renfordt, A., Busch, H., Cranach, M., Gulbinat, W., & Tegeler, J. (1983). Particular aspects of the interrater reliability of the ADMP psychopathology scale. In: D. Bobon, U. Baumann, J. Angst, H. Helmchen and H. Hippius, Editors, *The AMDP-System in Pharmakopsychiatrie* (pp. 125–142). Karger: Basle.
- Reicherts, M., & Pihet, S. (2000). Job newcomers coping with stressful situations: A micro-analysis of adequate coping and well-being. *Swiss Journal of Psychology*, 59, 303-316.
- Reno, R., & Halaris, A. (1990). The relationship between life stress and depression in an endogenous sample. *Comprehensive Psychiatry*, *31*, 25–33.

- Richardson, R. (1993). *The economic effects of reductions in working hours*: The ZIK engineering industry: 1989-1993. Seminar presented at the TUC/Friedrich Ebert Foundation Seminar on Working Time.
- Ridenour, N. (1961). *Mental health in the United States*. Cambridge, MA: Howard University Press.
- Rierdan, J., Koff, E., & Stubbs, M. (1987). Depressive symptomatology and body image in adolescent girls. *Journal of Early Adolescence*, 7, 205-216.
- Rijsdijk, A., Sham, P., Sterne, A., Purcell, S., McGuffin, P., Farmer, A., et al. (2001). Life events and depression in a community sample of siblings. *Psychological Medicine*, *31*, 401-410.
- Robins, C. J. (1990). Congruence of personality and life events in depression. *Journal of Abnormal Psychology*, *99*, 393–397.
- Ross, C. E. (2000). Neighborhood disadvantage and adult depression. *Journal of Health and Social Behavior*, 41, 177-187.
- Rosa, R. R. (1995). Extended work shifts and excessive fatigue. *Journal of Sleep Research*, *4*, 51-56.
- Rubenstein, A. (1992). Clinical issues in the treatment of adolescent girls. In B. Wainrib (Ed.), *Gender issues across the life cycle* (pp. 17-22). New York: Springer.
- Rubin, D. B. (1987). Multiple imputation for nonresponse in surveys. New York: Wiley.
- Rudolph, K. D., Hammen, C., Burge, D., Lindberg, N., Herzberg, D., & Daley, S. E. (2000). Toward an interpersonal life-stress model of depression: The developmental context of stress generation. *Development and Psychopathology*, *12*, 215-234.
- Rush, A. J., & Weissenburger, J. E. (1994). Melancholic symptom features and DSM-IV. *American Journal of Psychiatry*, *151*, 489-498.
- Sabia, L. (1994). New bosses in the workers' state: The growth of non-state sector employment in China. *The China Quarterly*, 12, 226-249.
- Saks, A. M., & Ashforth, B. E. (2000). The role of dispositions, entry Stressors, and behavioral plasticity theory in predicting newcomers' adjustment to work, *Journal of Organizational Behavior*, 21, 43-62.
- Salsali, M., & Silverstone, P. (2003). Low self-esteem and psychiatric patients: Part II.

- The relationship between self-esteem and demographic factors and psychosocial stressors in psychiatric patients. *Annals of General Hospital Psychiatry*, 2, 3.
- Sanders, A. R., Detera-Wadleigh, S. D., & Gershon, E. S. (1999). Molecular genetics of mood disorders. In D. S. Charney, E. J. Nestler, & B. S. Bunney (Ed.), *Neurobiology of mental illness* (pp. 299-316). New York: Oxford University Press.
- Sarafino, E.P. (2002). *Health Psychology: Biopsychosocial Interactions* (4th ed). New York: Wiley.
- Schichor, A., Bernstein, B., & King, S. (1994). Self-reported depressive symptoms in inner-city adolescents seeking routine health care. *Adolescence*, *29*, 379-388.
- Schill, T., & Beyler, J. (1992). Self-defeating personality and strategies for coping with stress. *Psychological Reports*, 71, 67-70.
- Schoevers, R. A., Beekman, A.T. F., Deeg, D. J. H., Geerlings, M. I., Jonker, C., & Van Tilburg, W. (2000). Risk factors for depression in later life: results of a prospective community based study (AMSTEL). *Journal of Affective Disorders*, 59, 27–137.
- Scott, E. K., Edin, K., London, A. S., & Kissane. R. J. (2004). Unstable Work, Unstable Income: Implications for Family Well-being in the Era or Time-Limited Welfare. *Journal of Poverty*, 8, 61-88.
- Segal, Z. V., Shaw, B. F., Vella, D. D., & Katz, R. (1992). Cognitive and life stress predictors of relapse in remitted unipolar depressed patients: Test of the congruency hypothesis. *Journal of Abnormal Psychology*, 101, 26-36.
- Seligman, M. E. P. (1975). Helplessness: On Depression, Development, and Death. *Personality and Social Psychology, 33*, 345-347.
- Seligman, M. E. P., Alloy, L. B., Peterson, C., & Abramson, L. Y. (1984). Attributional style and the generality of learned helplessness. *Journal of Personality and Social Psychology*, 46, 681-687.
- Seligman, M. E. P., & Garber, J. (1975). Human helplessness: theory and applications. *Journal of Personality & Social Psychology*, *32*, 311-328.
- Semmer, N., D., Zap, F. D., & Dunckel, H. (1995). Assessing stress at work: A framework and an instrument', in O. Svane and C. Johansen (eds.), *Work and Health Scientific Basis of Progress in the Working Environment* (pp. 105-113). Luxembourg: Office for Official Publications of the European Community.

- Semmer, N. K. (2003). Individual differences, work stress and health. In M. J. Schabracq, J. A. Winnubst and C. L. Cooper (eds.), *Handbook of Work and Health Psychology* (pp. 83-120). Chichester: Wiley.
- Semmer, N. K., Zap, F. D., & Greif, S. (1996). Shared job strain: A new approach for assessing the validity of job stress measurements. *Journal of Occupational and Organizational Psychology*, 69, 293-311.
- Shanghai Municipal Statistical Bureau (2007) *Statistical Yearbook of Shanghai*. China Statistical Publishing House: Beijing.
- Sharkin, B. (1993). Anger and gender: Theory, research, and implications. *Journal of Counseling and Development*, 71, 386-389.
- Shi, G., Cui, Z., Su, K., & Zhang, Y. (2003). A study on the budget of mental health Part II. *Shanghai Jing Shen Yi Xue*, 15, 371-375.
- Shi, Q. J., Sang, Z. Q., Li, X. Q., Zhou, J., & Wang, H. F. (2005). Current status of counseling and psychotherapy in China. In Q. J. Shi, Q. F. Zeng, X. C. Sheng, & W. Senf (Eds.), *Psychotherapy: Theories and practice* (pp. 21-34). Beijing, China: Chinese Medicine Pharmacy Science Publishing House.
- Shrout, P., Link B., Dohrenwend, B., Skodol, A., Stueve, A., & Mirotznik, J. (1989). Characterizing life events as risk factors for depression. The role of fateful loss. *Journal of Abnormal Psychology*, *98*, 460–467.
- Siegal, J., & Brown, J. (1988). A prospective study of stressful circumstances, illness symptoms, and depressed mood among adolescents. *Developmental Psychology*, 24, 715–721.
- Siegrist, J., Peter, R., Junge, A., Cremer, P., & Seidel, D. (1990). Low status control, high effort at work and ischemic heart disease: prospective evidence from blue-collar men. *Social Science Medicine.31*, 1127–1134.
- Silberg, J., Rutter, M., & Hewett, J. (1999). The influence of genetic factors and life stress on depression among adolescent girls. *Archives of General Psychiatry*, 56, 225–232.
- Silverstein, B., & Perlick, D. (1991). Gender differences in depression: historical changes. *Acta Psychiatry Scandinavia*, 84, 327-331.
- Silverstone, P., & Salsali, M. (2003). Low self-esteem and psychiatric patients: Part I. The relationship between low self-esteem and psychiatric diagnosis. *Annals of General Hospital Psychiatry*, 2, 2.

- Simon, R. W. (1990). Middle managers and strategy: Microdynamics of inclusion. *Strategic Management Journal 11*, 337-351.
- Siu, H. F. (1989). Politics of migration in a market town. In D. Davis & E. F. Vogel (Eds.), *Chinese society on the eve of Tiananmen: The impact of reform* (pp. 61-82). Cambridge MA: Harvard University Press.
- Smallegan, M. (1989). Level of depressive symptoms and life stresses for culturally diverse older adults. *Gerontologist*, 29, 45–50.
- Smithson, J., & Lewis, S. (2000). Is job insecurity changing the psychological contract? *Personnel Review*, 29, 680-698.
- Snell, W. E., Jr., Belk, S. S., & Hawkins, R. C. II. (1986). The stereotypes about male sexuality scale (SAMSS): Components, correlates, antecedents, consequences, and counselor bias. *Social and Behavioral Sciences Documents*, 16, 10.
- Sobel, M. E. (1982). Asymptotic confidence intervals for indirect effects in structural equation models. In S.Leinhardt (Ed.), *Sociological Methodology* (pp. 290–312). Washington, DC: American Sociological Association.
- Sonnentag, S. (2001). Work, recovery activities, and individual well-being: A diary study. *Journal of Occupational Health Psychology*, 6, 196-210.
- Sonnentag, S., & Frese, M. (2003). Stress in organizations. In W. C. Borman, D. R. Ilgen and J. R. Klimoski (eds.), Comprehensive Handbook of Psychology: *Industrial and Organizational Psychology* (Vol. 12, pp. 453-491). New York: Wiley.
- Sparks, K., Cooper, C., Fried, Y., & Shirom, A. (1997). The effects of hours of work on health: A meta-analytic review. *Journal of Occupational and Organizational Psychology*, 70, 391-408.
- Spector, P. E. (1992). A consideration of the validity and meaning of self report measures of job conditions. In C. L. Cooper and I. T. Robertson (eds.), *International Review of Industrial and Organizational Psychology* (Vol. 7, pp. 123-151). Chichester: Wiley.
- Spector, P. E. (1998). A control theory of the job stress process. In C. L. Cooper (Ed.), *Theories of organizational stress* (pp. 153–169). New York: Oxford.
- Spector, P. E., Zapf, D., Chen, P. Y., & Frese, M. (2000). Why negative affectivity should not be controlled in job stress research: Don't throw out the baby with the bath water. *Journal of Organizational Behavior*, 21, 79-95.

- Spence, S., Sheffield, J., & Donovan, C. (2002). Problem-solving orientation and attributional style: moderators of the impact of negative life events on the development of depressive symptoms in adolescence. *Journal of Clinical Child and Adolescent Psychology*, 31, 219-229.
- Staines, G. L., & Pleck, J. H. (1983). *The Impact of Work Schedules on the Family*, University of Michigan, Ann Arber: MI.
- Stansfeld, S. A., Fuhrer, R., Head, J., & Shipley, M. J. (1999). Work characteristics predict psychiatric disorder: prospective results from the Whitehall II study. *Occupational and Environmental Medicine*, *56*, 302-307.
- State Labor Council. (2001). Poverty and Labor Markets in China. Journal of Comparative *Economics*, *33*, 730-752.
- Steer, R. A., Ball, R., Ranieri, W. F., & Beck, At. T. (1997). Further evidence for the construct validity of the Beck Depression Inventory-II with psychiatric outpatients. *Psychological Report*, 80, 443-446.
- Stoolmiller, M. S., Duncan, T., Bank, L., & Patterson, G. R. (1993). Some problems and solutions in the study of change: Significant patterns in client resistance. *Journal of Consulting and Clinical Psychology*, *61*, 920-928.
- Stoppard, J. M., & Paisley, K. A. (1987). Masculinity, femininity, life stress and depression. *Journal of Psychology*, 16, 9-10.
- Sturdivant, S. (1980). Therapy with women. New York: Springer.
- Sullivan, P. F., Neale, M. C., & Kendler, K. S. (2000). Genetic epidemiology of major depression: *Review and meta-analysis, American Journal of Psychiatry*, 157, 1552-1562.
- Sun, W. (2004). Media Constructions of the Migrant Woman. Hong Kong: SCMP.
- Suomi, S.J. (1991). Early stress and adult emotional reactivity in rhesus monkeys. *Ciba Foundation Symposium*, *156*, 171-198.
- Sutton, S. K., & Davidson, R. J. (1997). A Biological Substrate of the Behavioral Approach and Inhibition Systems. *Psychological Science*, 8, 204-210.
- Swann, A., Secunda, S., Stokes, P. (1990). Stress, depression, and mania: relationship between perceived role of stressful events and clinical biochemical characteristics. *Acta Psychiatrica Scandinavica*, *81*, 389–397.

- Swanson, N., & Burnett, C. (1995). Suicide and occupation. *Journal of Occupational and Environmental Medicine*, *37*, 442-452.
- Takakura, M., & Sakihara, S. (2000). Gender differences in the association between psychosocial factors and depressive symptoms in Japanese junior high school students. *Journal of Epidemiology*. 10, 383-391.
- Tan, S. (2000). The Relationship between Foreign Enterprises, Local Governments, and Women Migrant Workers in the Pearl River Delta. In Rural Labor Flows in China. Berkeley: Institute of East Asian Studies, University of California.
- Tang, X. B. (1996). Global space and the nationalist discourse of modernity: The historical thinking of Liang Qichao. Stanford: Stanford University Press.
- Taylor, M. F., Brice, J., & Buck, N. (1995). Depression in men and women. *British Household Panel Survey Manuel*, A, 34.
- Taylor, S. (1989). Empowering girls and young women: The challenge of the gender-inclusive curriculum. *Journal of Curricular Studies*, 21, 441-456.
- Tennant C. (2000). Assessing stressful life events in relation to liability and compensation. *Australian and New Zealand Journal of Psychiatry*, *35*, 81–85.
- Tennant, C. (2002). Life events, stress and depression: a review of recent findings, *Australian and New Zealand Journal of Psychiatry*, *36*, 173-182.
- Terry, D. J., & Jimmieson, N. L. (1999). Work control and employee wellbeing: A decade review. In C. L. Cooper and I. T. Robertson (eds.), *International Review of Industrial and Organizational Psychology*, (Vol. 14 pp. 95-148). Chichester: Wiley.
- Theorell, T., & Karasek, R. A. (1996). Current issues relating to psychosocial job strain and cardiovascular disease research. *Journal of Occupational Health Psychology*, *1*, 9-26.
- Thoits, P. A. (1983). Multiple Identities and Psychological Well-Being: A Reformulation and Test of the Social Isolation Hypothesis. *American Sociological Review 48*:, 174-187.
- Thoits, P. A. (1984). Explaining distributions of psychological vulnerability: Lack of social support in the face of life stress. *Social Forces*, *63*, 453-481.
- Thoits, P. (1991). Patterns in coping with controllable and uncontrollable events. In Cummings, E. M., Greene, A. C., and Karraker, K. H. (eds.), *Life-span*

- Developmental Psychology: Perspectives on Stress and Coping. NJ: LEA.
- Thomson, A., & Hendrie, H. (1972). Environmental stress in primary depressive illness, *Archives of General Psychiatry*, 26, 130-132.
- Thomas, H., & Raynar, K. (1997). Scheduled overtime and labor productivity: Quantitative analysis. *Journal of Construction Engineering and Management*, 123, 181-188.
- Thurow, L. (1993). *Head to head. the coming economic battle among Japan, Europe and America*. New York: Warner Books.
- Timmerman, L., Martin, D., & Martin, M. (1989). Augmenting the helping relationship: The use of bibliotherapy. *The School Counselor*, *36*, 293-297.
- Tolman, D., & Debold, E. (1994). Conflicts of body and image: *Female* adolescents, desire, and the no-body body. In P. Fallon, M. Katzman, & S. Wolley (Eds.), *Feminist perspectives on eating disorders*. New York: Guilford.
- Turner R. J., & Avison, W. R. (1989). Gender and depression: assessing exposure and vulnerability to life events in a chronically strained population. *Journal of Nervous Mental Disorders*, 177, 443-455.
- Turner, R. J., Wheaton, B., & Lloyd, D. A. (1995). The epidemiology of social stress. *American Sociological Review*, 60, 104-125.
- Uchino, B., & Garvey, T. S. (1997). The availability of social support reduces cardiovascular reactivity to acute psychological stress. *Journal of Behavioral Medicine*, 20, 1
- Uehata, T. (1991). Karoshi due to occupational stress-related cardiovascular injuries among middle-aged workers in Japan. *Journal of Science Labor*, 67, 20-28.
- Umberson D. (2004). Marital Status, Marital Transitions, and Health: A Gendered Life Course Perspective. *Journal of Health and Social Behavior*, 45, 81-98.
- Umberson, D., Meichu D., Chen, J.S., House, K. H., & Ellen, S. (1992). The Effects of Social Relationships on Psychological Well-Being: Are Men and Women Really So Different? *American Sociological Review*, 61, 837-57.
- Unger, J. (1994). Rich man, poor man: The making of new classes in the countryside. In S. G. Goodman & B. Hooper (Eds.), *China's quest revolution: New interactions between state and society* (pp.43-63). New York: St Martin's Press.

- Unger, R., & Crawford, M. (1992). *Women and gender: A feminist psychology.* New York: McGraw-Hill.
- Van Buren, J. (1992). Gender fair counseling. *Counseling and Human Development*, 24 (7), 1-12.
- Van Os, J., Fahy, T., Bebbington, P., Jones P. (2000). The influence of life events on the subsequent course of psychotic illness: A prospective follow-up of the Camberwell collaborative psychosis study. *Psychological Medicine*, 24, 503–513.
- Ventura, J., Neuchterlein, K., Subotnik, K., Hardesty, J., & Mintz, J. (2000). Life events can trigger depressive exacerbation in the early course of schizophrenia. *Journal of Abnormal Psychology*, 109, 139–144.
- Vitaliano, P. P., De Wolfe, D. J., Maiuro, R. D., Russo, J., & W. Katon, W. (1990). Appraised changeability of a Stressor as a modifier of the relationship between coping and depression: A test of the hypothesis of fit. *Journal of Personality and Social Psychology*, 59, 582-592.
- Vourlekis, B. S., & Knee, G. E. (1988). The rise of social work in public mental health through aftercare of people with serious mental illness. *Journal of Social Work*, 43, 111-112.
- Wakefield, J. C. (1992). The concept of mental disorder: On the boundary between biological facts and social values. *American Psychologist*, 47, 373-388.
- Wan, G. H. (1995). Peasant flood in China: Internal migration and its policy determinants. *Third World Quarterly*, *16*, 173-195.
- Wang, P. S., Beck, A. L., Berglund, P., & McKenas, D. K. (2004). Effects of major depression on moment-in-time work performance. *The American Journal of Psychiatry*. *161*, 1886-1887.
- Wang, P. S., Berglund, P., Olfson, M., Pincus, H.A., Wells, K.B., & Kessler, R.C. (2002). Failure and delay in initial treatment contact after first onset of mental disorders in the National Comorbidity Survey Replication. *Archive of General Psychiatry*, 62, 603-613.
- Wang, P. S., Demler, O., & Kessler R.C. (2002). Adequacy of treatment for serious mental illness in the United States. *American Journal of Public Health*, 92, 92-98.
- Wang, Y. P., Andrade, L. H., & Gorenstein, C. (2005). Validation of the Beck Depression Inventory for a Portuguese-speaking Chinese community in Brazil. *Brazilian*

- *Journal of Medical and Biological Research, 38,* 399-408.
- Warr, P. (1999). Well-being and the workplace, In D. Kahneman, E. Diener and N. Schwarz (eds.), *Well-Being. The Foundations of Hedonic Psychology* (pp. 393-412. New York: Russell Sage Foundation.
- Waxman, H. M., McCreary, G., Weinrit, R. M., & Carner, E. A. (1985). Comparison of somatic complaints among depressed and non-depressed older persons. *The Gerontologist*, 25, 501-507.
- Way, N. (1995). "Can't you see the courage, the strength that I have?" Listening to urban adolescent girls speak about their relationships. *Psychology of Women Quarterly*, 19, 107-128.
- Weissman, M. M., & Bland, R. (1993). Sex differences in rates of depression: cross-national perspectives. *Journal of Affective Disorders*, 29, 77-84.
- Weissman, M. M., & Klerman, G. L. (1977). Sex differences and the epidemiology of depression. *Archives of General Psychiatry*, 34, 98-111.
- Wells, A. (1997). Cognitive therapy of anxiety disorders: A practice manual and conceptual guide. London: Wiley.
- Wells, D. (2003). Global sweatshops and ethical buying codes. *Canadian Dimension*, 37, 9.
- Wells, K. B., Stewart, A., Hays, R. D., Burnam, A., Roger, W., Daniels, M., et al. (1989). The functioning and well-being of depressed patients. Results from the Medical Outcomes Study. *Journal of the American Medical Association*, 262, 914–920.
- Wenger, G.C. (1994). Support networks and dementia. *International Journal of Geriatric Psychiatry*, 9, 181-194.
- Wethington, E., Brown, G. W., & Kessler, R. C. (1995). Interview measurement of stressful life events. In S. Cohen, & R. C. Kessler (Ed.), *Measuring stress: A guide for health and social scientists* (pp. 59-79). New York: Oxford University Press.
- Wheaton, B. (1994). Sampling the stress universe. In W. R. Avison & I. H. Gotlib (Eds.), *Stress and mental health: Contemporary issues and prospects for the future* (pp. 77-114). New York: Plenum Press.
- Whetton, D. A., & Cameron, K. S. (1995). *Developing management skills*. New York: Harper Collins.

- White, G. (1993). *Riding the tiger: The politics of economic reform in post-Mao China*. Basingstoke: Macmillan.
- Widiger, T. A., & Clark, L. A. (2000). Toward DSM-V and the classification of psychopathology. *Psychological Bulletin*, *126*, 946-963.
- Wiklund, I. (1988). Prognostic importance of somatic and psychosocial variables after a first myocardial infarction. *American. Journal of Epidemiology, 128*, 786-795.
- Wildes, J., Simons, A., & Harkness, K. (2002). Life events, number of social relationships, and twelve-month naturalistic course of major depression in a community sample of women. *Depression and Anxiety*, 16, 104-113.
- Wilhelm, K., Kovess, V., Seidel, C., & Finch, A. (2004). Work and mental health. *Psychiatry and Psychiatric Epidemiology*, *39*, 866-873.
- Wilhelm, K., & Parker, G. (1989). Is sex necessarily a risk factor to depression. *Psychology Medicine*. 19, 403-413.
- Willett, J. B., & Sayer, A. J. (1994). Using covariance structure analysis to detect correlates and predictors of individual change over time. *Psychological Bulletin*, *116*, 363-381.
- Williams, J. B., & Spitzer, R. L. (1995). Gender differences in depression in primary care. *American Journal of Obstet. Gynecology*, 173, 654-659.
- Williamson, D. E., Birmaher, B., Anderson, B. B., Al-Shabbout, M., & Ryan, N. D. (1995). *Stressful life events* in depressed adolescents: The role of dependent *events* during the depressive episode. *Journal of the American Academy of Child and Adolescent Psychiatry*, 34, 591–598.
- Willige, G., Ormel, J., & Giel, R. (1995). Etiological meaning of severe life events and long-term difficulties in the onset of depression and anxiety. *Journal of Psychiatry*, *37*, 689–703.
- Wilson, K. G., Kraitberg, N. J., Brown, J. H., & Bergman, J. N. (1991). Electroconvulsive therapy in the treatment of depression: the impact on length of stay. *Psychiatry*, 32, 345-354.
- Wilt, D. (1993). Treatment of anger. In S. Thomas (Ed.), *Women and anger* (pp. 233-257). New York: Springer.
- Winefield, A. H., & Tiggemann, M. (1990). Employment status and psychological well-

- being: A longitudinal study. *Journal of Applied Psychology*, 75, 455-459.
- Wing, J., Babor, T., & Brugha, T. (1990). SCAN: Schedules for Clinical Assessment in Neuropsychiatry. *Archives of General Psychiatry*, 47, 589-593.
- Worell, J., & Remer, P. (1992). Feminist perspectives in therapy: An empowerment model for women. New York: Wiley.
- World Bank. (1995). *World development report 1995*. Oxford, England: Oxford, University Press.
- World Health Organization. (1996). The World Health Report. Geneva: WHO.
- World Health Organization. (2004). The World Health Report. Geneva: WHO.
- Woo, M. Y. K. (1994). Chinese women workers: The delicate balance between protection and equality. In Gilmartin, Hershatter, Rofel & White (Eds.), *Engendering China: Women, culture, and the State* (pp. 279-295). Cambridge, MA: Harvard.
- Wust, S., Federenko, ,I., Hellhammer , D. H. & Kirschbaum, C. (2000). Genetic factors, perceived chronic stress, and the free cortisol response to awakening. *Psychoneuroendocrinology*, 25, 707-720.
- Xu, F. (1998). Migrant workers in China's economic reform: Interweaving gender, class and placed of origin. Toronto: York University.
- Xu, F. (2000). Women Migrant Workers in China's Economic Reform. New York: St. Martin's Press.
- Yang, X. (1993). Household registration economic reform and migration. *International Migration Review*, 27, 796-818.
- Yardly, J. (2004). *Rural exodus for work fractures Chinese family*. New York: New York Times.
- Yeung, A., Chang, D., Gresham, R. L., Nierenberg, A. A., & Fava, M. (2004). Illness beliefs of depressed Chinese American patients in primary care. *Journal of Nervous and Mental Disease*, 192, 324-327.
- Ying, Y. W. (1995). Cultural orientation and psychological well-being in Chinese Americans. *American Journal of Community Psychology*, 23, 893-911.
- Yip, K. S. (1999). Traditional Chinese Confucian, Taoistic and medical mental health

- concepts in pre-chin period. Asian Journal of Counseling, 6, 35-55.
- Yip, K. S. (2002). Transcendence from trauma and terrorism: A Taoistic reflection. *Families in Society*, *83*, 403-404.
- Young, N. (2005). Under scrutiny, NGOs should relax and put their case patiently. *China Development Brief*, 9, 11-12.
- Yukl, G. (1994). Leadership in organizations. Englewood Cliffs, NJ: Prentice-Hall.
- Zhang, H. X. (1999). Female migration and urban labor markets in Tianjin. *Development and Change*, 30, 21-41.
- Zhang, Y. (2001). Hope for China migrant women workers. *Labor Practices and Corporate Social Responsibility*, 10, 22-23.
- Zhao, M., & Nichols, T. (1996). Management control of labor in state-owned enterprises: cases from the textile industry. *The China Quarterly*, *36*, 1-21.
- Zheng, Y., & Lin, K.M. (1991) Comparison of the Chinese Depression Inventory and the Chinese version of the Beck Depression Inventory. *Acta Psychiatry Scandinavia*, 84, 531-536.
- Zheng, Y., & Young, D. (1986). The relationship of life events and stress to neurosis in China. *Medicine and Psychiatry*, 10, 245-258.
- Zhou, D. (1997). Investigative analysis of migrant odd-job workers. In G.Guangzhou Ed.), *Farewell to peasant China: Rural urbanization and social change in the late twentieth century* (pp. 227-47). NY: Sharpe.
- Zhu, J., & Zhang, M. (2006). Effects of Intergroup Contact on Attitudes of Chinese Urban Residents to Migrant Workers. *Urban Studies*, *43*, 475-490.
- Zimmerman, M. (1989). Methodological issues in the assessment of life events: A review of issues and research. *Clinical Psychology Review*, *3*, 339-370.
- Zimmerman, M., Pfohl, B., Coryell, W., & Stangl, D. (1987). The prognostic validity of DSM-III Axis IV in depressed inpatients. *American Journal of Psychiatry*, 144, 102-106.
- Zlotnick, C., Shea, M. T., Pilkonis, P. A., Elkin, I., & Ryan, C. (1996). Gender, type of treatment, dysfunctional attitudes, social support, life events, and depressive symptoms over naturalistic follow-up. *American Journal of Psychiatry*, 153(8),

1021-1027.

Zuckerman, M. (1999). *Vulnerability to psychopathology: A biosocial model*. Washington, DC: American Psychological Association Press.

APPENDIX A: LETTERS TO FACTORY OWNERS

Dear Factory owners,

I am writing to solicit help from you in my research project. Currently I am conducting a research for my Ph.D. dissertation in Professional Counseling with Liberty University, Lynchburg, Virginia, USA.

The title of my thesis is "The relationship between stress/depressive symptoms and working hours among migrant factory-workers in China" Migrant workers from rural areas of China are prone to stress due to the transitional nature of urban life. High levels of stress are believed to affect workers' health and work-performance. The association of depression with adverse life events has been reported in previous studies (Rahman, 2003; O'Hara & Swain, 1996). If stress is not dealt with effectively, depressive mood symptoms including feelings of loneliness, nervousness, sleeplessness and worrying may result.

Attached please find a copy of the survey form to be filled out by the participants. All participants will be informed about the aim of this study and about guarantee of anonymity and confidentiality. The desirable sample size for this research is 1200 and above. A gift of \$20 (Chinese Dollar) of compensation will be given to participants with permission from factory owners.

I prefer to be present when surveys are given. However, if necessary, surveys could be conducted by Personnel Department of your factory with prior training given by me. The total time needed for completing this survey is about 40 minutes to an hour.

Any help from you will be deeply appreciated. If you have any question/comment, please contact me at 61488485 or ptlso@yahoo.com

Sincerely,

Anthony Ping-Kam So, D. Min., Ph.D. (Candidate)

APPENDIX B: INFORMED CONSENT FORM

I have been informed that this study involves research which will be conducted by Anthony So, D.Min., a doctoral student at Liberty University. I understand that this project is designed to study stress, depression and working hours of migrant factory workers. The goal of this study is to identify the association of prolonged work hours and its effects on migrant factory workers. I have been asked to participate in this study because I am currently a migrant working in a factory.

I understand that my participation in this study will involve the completion of two questionnaires designed to measure stress levels and depressive symptoms. An additional questionnaire will ask about my background. I am aware that my involvement in this study will take approximately 40-60 minutes of my time (10 minutes: Overview of the study; 10 minutes-question and answer, 30 minutes for filling the surveys.

I understand that I may refuse to participate or withdraw from this study at any time without penalty or loss of services that I am entitled to. I understand that my identity as a participant in this study will be kept in strict confidence and that no information that identifies me in any way will be released without my separate written approval. I am aware that all information that identifies me will be protected to the limits allowed by law. I have been informed that only Anthony So will have access to the data that identifies me personally. I have been informed that all data collected about me for the purpose of this study will be destroyed by Anthony So within five (5) years of the date of signing this document.

I understand that I may contact Anthony So at 6148485 or via email at

ptlso@yahoo.com or his adviser, John, Thomas, Ph.D., Ph.D. at (434) 592-4047 or via email: jcthomas2@liberty.edu or by mail: Dr. John Thomas, Director of the Ph.D. Program, Center for Counseling & Family Studies, Liberty University, 1971 University Blvd, Lynchburg, VA 24502, if I have any questions about this project or my participation in the study.

I request a written summary of the group	p results of this study when it is complete.
I may be contacted at the following address:	
	to receive a summary of the results.
_ I am not interested in receiving a summary of	the results of this study.
I understand that I will be signing two copies of	f this form. I will keep one copy and
Anthony So will keep the second copy for his re	ecords.
I have read this form and understand what it say	ys. I am 18 years or older and
voluntarily agree to participate in this project.	
Participant's Signature	Date
Principal Investigator's Signature	Date

APPENDIX C: LIFE CHANGE UNIT SCALE IN CHINESE

(Miller, M. A., & Rahe, R. H., 1997)

生活變化問卷

作法:請在"過去一年 的發生次數"中填入你在這一年中發生左列之生活事件的次數(無則免填),並乘以右側"事件後的生活改變單位"得一"單項計分",完成後將所有的單項計分加起來即為你這一年來的生活變化單位(LCU life-change units)。

生活事件		事件後的生活改變單位	單項計分
健康方面	,		
1. 受傷或生病臥床一周以上		74	
2. 受傷或生病送醫(嚴重程度比上述低)		44	
3. 重大牙科處理		26	
4. 重大飲食習慣改變		27	
5. 重大睡眠習慣改變		26	
6. 重大 學型式或量的改變		28	

工作方面		
7. 改變新的工作型式	 51	
8. 改變工作時間或 • 況	 35	
9. 改變工作職責更重	 29	
10. 改變工作職責更輕	 21	
11. 榮昇	 31	
12. 降級	 42	
13. 轉任	 32	
工作上相處不好		
14. 和老闆	 29	
15. 和同事	 35	
16. 和屬下	 35	
17. 其他工作上的麻煩	 28	
18. 重大工作調適	 60	
19. 退休	 52	
20. 辭職失業	 68	

21. 被解雇而失業	 79	
22. 對工作有助益的函授課程	 18	
家庭方面		
23. 重大生活情境改變	 42	
24. 遷居搬到同一 ■ 鎮或縣市	 25	
25. 搬到不同的 • 鎮,縣市	 47	
26. 家人相處 • 況改變	 25	
27. 家人的健康或行為有重大改變	 55	
28. 結婚	 50	
29. 懷孕	 67	
30. 早 • 或流 •	 65	
新的家庭成員加入		
31. 嬰兒出生	 66	
32. 領養小孩	 65	
33. 親戚遷入	 59	
34. 配偶開始或停止工作	 46	

小孩離家			
35. 上大學		41	
36. 結婚		41	
37. 其他理由離家		45	
38. 改變與配偶的爭執		50	
39. 姻親的問題		38	
您的雙親婚姻 • 態改變	<u>'</u>		
40. 離婚		59	
41. 再婚		50	
與配偶分開居住			
43. 因為工作的 • 故		53	
43. 因為婚姻問題		76	
44. 離婚		96	
45. 孫兒出生		43	
46. 配偶死亡		119	
其他家人死亡			

47.孩子	 123	
48. 兄弟姊妹	 102	
49. 父母	 100	
個人及社會生活		
50. 改變個人習慣	 26	
51. 上學或結業	 38	
52. 轉學	 35	
53. 改變政治信念	 24	
54. 改變宗教信仰	 29	
55. 改換社交活動	 27	
56. 休假	 24	
57. 建立新的個人親密關係	 37	
58. 訂婚	 45	
59. 女(男)朋友的問題	 39	
60. 性生活障礙	 44	
61. 個人親密關係發生失和	 47	

62. 發生意外		48	
63. 小的違規事件		20	
64. 入獄		75	
65. 好朋友去世		70	
66.攸關前途的重大決定		51	
67. 重大個人成就		36	
重大經濟改變			!
68. 收入增加		38	
69. 收入減少		60	
70. 投資或貸款的問題		56	
71. 個人財物的損傷或喪失		43	
72. 中等程度的採購花費		20	
73. 重大的採購花費		37	
74. 流當或喪失抵押品贖取權		58	
	1	<u> </u>	·

解析:你這一年來的生活變化單位(LCU life-change units),也就是你這一年當中所遭遇到的壓力因子,研究發現,LCU數 在 150~200 之間的人,在接下來的一年

有 35%左右的機率會因為這些壓力而引發疾病, 200~300 的有大約 50%, 300 以上的則有將近 80%。

APPENDIX D: PERSONAL DATA INFORMATION

生活 • 化 • 卷 (<i>作法: • 在下列 • • 填上或圈出你的正确答案</i>) 日期
姓名(可 • • 填写) 年 • : 姓 • 男/女
平均『日工作小』 平均『周天
婚姻状况 ■身/已婚/离婚/■偶
残疾人士 是/否 曾患 ¶ 郁症 有/否
本地/外地工人(来自) 住宿舍 是/否 本 ● 近 ● 有/无

APPENDIX E: LCU SURVEY IN CHINESE

作法: "在下列""剔上及填上你的正确答案

生活事件	■ 去一年内的 ■ 生	欠数
健康方面	无	有(次)
1. 受 * 或生病 * 床一周以上		
2. 受 • 或生病送医(• 重程度比上述		
低)		
3. 重大牙科 • 理		
4. 重大 * 食 * * 改 *		
5. 重大睡眠 • • 改 •		
6. 重大 • 型式或量的改 •		
工作方面		
7. 改 • 新的工作型式		
8. 改 * 工作 * * 或状况		
9. 改 * 工作 * * 更重		
10.改 • 工作 • •更 •		
11.		
12. 降•		
13.		
工作上相 • 不好		
14. 和老板		
15. 和同事		
16. 和属下		
17. 其他工作上的麻 •		
18. 重大工作 * 适		
19. 退休		
20. 辞 * 失 *		
21. 被解雇而失 •		
22. 工作有帮助的函授 程		
家庭方面		
23. 重大生活情境改・		
24. 迁居搬到同一 ● 或 ● 市		

	无	有(次)
25. 搬到不同的 • • , • 市		
26. 家人相 * 状况改 *		
27. 家人的健康或行 • 有重大改 •		
28. • 婚		
29. • 孕		
30. 早 • 或流 •		
新的家庭成 • 加入		
31. 『 儿出生		
32. • • 小孩		
33. • 戚迁入		
34. 配偶 • 始或停止工作		
小孩离家		
35. 上大学		
36. • 婚		
37. 其他理由离家		
38. 改 • 与配偶的争 •		
39. 烟 * 的 * *		
您的双 • 婚姻状 • 改 •		
40. 离婚		
41. 再婚		
与配偶分 * 居住		
43. 因 * 工作的 * 故		
43. 因 • 婚姻 • •		
44. 离婚		
45. * 儿出生		
46. 配偶死亡		
其他家人死亡		
47.孩子		
48. 兄弟姊妹		
49. 父母		
个人及社会生活		
50. 改•个人••		

51. 上学或 * *		
52. • 学		
53. 改 • 人生目 •		
54. 宗教信仰(■ 圈出)	无	有
	无	有(次)
55. 改 • 社交活 •		
56. 休假		
57. 建立新的个人 * 密 * 系		
58. • 婚		
59. 女 (男) 朋友的 • •		
60. 性生活障碍		
61. 个人 * 密 * 系 * 生失和		
62. * 生意外		
63. 小的 • • 事件		
64. 入 •		
65. 好朋友去世		
66.攸 前途的重大决定		
67. 重大个人成就		
• • 方面		
重大▪▪改▪		
68. 收入增加		
69. 收入减少		
70. 投 • 或 • 款的 • •		
71. 个人•物的••或•失		
72. 中等程度的采•花•		
73. 重大的采 • 花 •		
74. 流当或•失抵押品•取•		

APPENDIX F: CHINESE VERSION OF THE BECK DEPRESSION INVENTORY

回答方式: • 根据个人最近的状况, 在方格中剔出一个适当的 • • 。

	0 我不感到 • •。
1	1 我感•••。
	2 我一直 ● 得 ■ ■ 且无法振作起来。
	3 我 ■ ■ 且不快 ■ ,我不能忍受 ■ ■ 情形了。
	0 • 未来我并不感 • 特 • 沮 • 。
2	1 • 未来我感到沮 • 。
	2 没有任何事可 • 我期盼。
	3 我 * 得未来毫无希望,并且无法改善。
	0 我不 ● 得自己是个失 ■ 者。
3	1 我比一般人害怕失。
	2回想自己的生活,我所看到的都是一大堆失 □。
	3 我 ■ 得自己是个 ■ 底的失 ■ 者。
	0 我像 ▪ 去一 ▪ 从一些事中得到 ▪ 足。
4	1 我不像 ■ 去一 ■ 一些事感到喜悦。
	2 我不再从任何事中感到真正的 • 足。
'	3 我 ■ 任何事都感到 ■ 躁不 ■ 意。

5	0 我没有罪 ■ 感。
	1 偶 • 我会有罪 • 感。
	3 我 ■ 是感到罪 ■ 。
6	0 我不 ● 得自己正在受 ■ 。
	1 我 ■ 得自己可能遭受 ■ ■。
	2 我希望受到 • •。
	3 我 ■ 得自己正在自食 ■ 果。
7	0 我 • 自己并不感到失望。
	1 我 • 自己甚感失望。
	2 我 ■ 自己。
	3 我恨自己。
8	0我不 • 得自己比 • 人差 • 。
	1 我 ■ 自己的弱点或 ■ ■ 常常挑三 ■ 四。
	2 我 * 是 * 了自己的缺失苛 * 自己。
	3 祇要出事就会 ■ 咎于自己。
9	0 我没有任何想自 • 的念 • 。

	1 我想自 • ,但我不会真的那 • 做。
	2 我真想自 •。
	3 如果有机会,我要自 •。
	0和平 • 比 • ,我哭的次数并无增加。
10	1 我 * 在比以前常哭。
	2 • 在我 • 常哭泣。
	3 • 去我 • 能,但 • 在想哭都哭不出来了。
11	0 我 • 任何事并不会比以前更易 • 怒。
	1 我比以前稍微有些脾气暴躁。
	2 很多 * 候我相当苦 * 或脾气暴躁。
	3目前我 ■ 是容易 ■ 怒。
12	0 我 • 心他人。
	1 和以前比 ■ 我有点不 ■ 心 ■ 人。
	2 我 『 心 『 人的程度已大不如昔。
	3 我已不再 ● 心他人。
13	0 我做决定能像以前一 • 好。
	1 我比以前会延后做决定的 • • 。

	2 我做决定比以前更感困 。
	3 我不再能做决定了。
14	0 我不 ● 得自己比以前差 ■ 。
	1 我担心自己 * 老或不吸引人。
	2 我 * 得自己的外表 * 得不再吸引人。
	3 我 ■ ● 自己 ■ 得很丑。
15	0 我的工作情况跟以前一 ┛ 好。
	1 我需要特 ■ 努力才能 ■ 始工作。
	2 我必 • 极力催促自己才能做一些事情。
	3 我无法做任何事。
16	0 我像往常一 ■ 睡得好。
	1 我不像往常一『睡得好。
	2 我比往常早醒 1 至 2 小 ■ 且 ■ 再入睡。
	3 我比往常早数小 ■ 醒来,无法再入睡。
17	0 我并不比以往感到疲倦。
	1 我比以往易感到疲倦。
	2 几乎做任何事都令我感到倦。

	3 我累得任何事都不想做。
18	0 我的食欲不比以前差。
	1 我的食欲不像以前那 • 好。
	2目前我的食欲很差。
	3 我不再感到有任何的食欲。
19	0 我的体重并没有下降,若有,也只有一点。
	1 我的体重下降了 2.5 公斤以上。
	2 我的体重下降了 4.5 公斤以上。
	3 我的体重下降了7公斤以上。
20	0 我并未比以往更 ■ ■ 自己的健康状况。
	1 我被一些生理病痛困 , 譬如胃痛、便秘等。
	2 我很 • • 自己的健康 • • ,因此无法 • 及 • 多事 • 。
	3 我太 • • 自己的健康 • • ,以致于无法思索任何事情。
21	0 最近我 ■ 性的 ■ 趣并没有特殊改 ■ 。
	1最近我 * 性的 * 趣比以前稍减。
	2目前我 ■ 性的 ■ 趣降低很多。
	3 我 ■ 性已完全没有 ■ 趣了。