 CHAPTER – I

INTRODUCTION

Globally, the nature of work is changing rapidly (Falkum & Vaglum, 2005; Van der Hulst, 2003; Dunnette, 1998; Marmot, Siegrist, Theorell, & Feeney, 1990). The resultant work environment is determined more by the economic imperatives and cost/benefit market-based approaches than by a consideration of the human implication of these changes (Karasek, Siegrist, & Theorell, 1998). Work stress has emerged as a major psychosocial influence on physical and mental health over recent decades (Saulter, Murphy, Hurrell, & Levi, 1998). Stress is the psychological and physical state that results when the resources of the individual are not sufficient to cope with the demands and pressure of the situation (Michie, 2002). Work can be an exciting source of challenge where potentials and capabilities of the self are discovered and utilized. This positive stress perspective has been termed ‘eustress’ (Mesler, 1994).

Stress is clearly a part of human condition. Because of its universal occurrence stress is not looked at in terms of its presence or absence but rather according to the intensity and the effect it has on the individuals. Stress is harmful when it is subjected to a strain or pressure of some kind (Cartwright & Cooper, 1997). Robbins (2001) define stress as a dynamic condition in which the individual is confronted with an opportunity, constraint, or demand related to what he or she desires and for which the outcome is perceived to be both uncertain and important. Stress can be caused by environmental, organizational and individual variables (Cook & Hunsakar, 2001; Matteson & Ivancevich, 1999).

Stress at workplace is defined and conceptualized in terms of the external pressure that is exerted on a person, which in turn results in ‘tension’ or ‘strain’ (Kahn & Byosiere, 1992). Within certain limits, people are able to deal with these pressures and adapt to the current situation and to recover when the situation is over. However, when the pressure is too large, people may not be able to recover or adapt. An individual adaptability is determined by personal characteristics e.g., the availability of social
support (Le Blanc, de Jonge, & Schaufeli, 2000). A stressor is an environmental condition that includes a negative emotional reaction (Spector, 1998). People monitor their environments and through the appraisal process (Lazarus & Folkman, 1984) interpret situation as stressors, based such factors as the extent to which the individual perceives a threat to well being (Spector & Fox, 2004).

Stress refers to a state of the organism resulting from some interaction with the environment. Stress is the psychological and physical state that results when the resources of the individual are not sufficient to cope with the demands and pressure of the situation (Michie, 2002).

Pestonjee (1992) has identified three important sectors in life in which stress originates. These are:

- job and organization
- the social sector
- the intrapsychic sector

The first, namely job and organization refers to the totality of the work environment (task, atmosphere, colleagues, compensation, policies etc). The social sector refers to the social/cultural context of one's life. It may include religion, caste, community, dress and other such factors. The intrapsychic sector encompasses those things, which are intimate and personal, like temperature, values, abilities and health. It is contended that stresses can originate in any of these sectors or in combination thereof. Others opined that stress can be caused by environmental, organizational and individual variables (Cook & Hunsakar, 2001; Miller, Greyling, Cooper, Lu, Sparks, & Spector, 2000; Matteson & Ivancevich, 1999). Stress is also viewed as a dynamic condition in which the individual is confronted with an opportunity, constraint, or demand related to what he or she desires for which the outcomes is perceived to be both uncertain and important (Robbins, 2001).

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adaptability is determined by personal characteristics e.g. the availability of social support (Le Blanc, de Jonge, & Schaufeli, 2000).

Stress varies in regard with more response based or more stimulus-based (Ivancevich & Matteson, 1980; McGrath, 1970). Response-based definition depicts stress as a psychological or physiological response made by the individual to environmental stressors. Stimulus-based definition defines stress as the force or demand acting upon an individual that result in psychological and physiological strain. Stress results from change, uncertainty, and an imbalance between the demands made on individuals and their ability to respond to them (Matteson & Ivancevich, 1987). Stress has also been reported as a psychological construct that people experience on a daily bases, and can provide both positive and negative benefits to the individual (Aasland & Forde, 2005; Cooper, Dewe, & O’Driscoll, 2001; Quick, Murphy, & Hurrell, 1992). Stress can improve work performance by raising levels of arousal and enabling a person to accomplish more in a shorter amount of time (Wallgren & Hasen, 2007; Stamper & Johlke, 2003; Quick, Quick, Nelson, & Hurrell, 1997).

Work can be an exciting source of challenge where potential and capabilities of the self are discovered and utilized. This positive stress perspective has been termed ‘eustress’ (Van Horn, Taris, Schaufeli, Schreurs et al., 2004; Danner, Snowdon, Friesen et al., 2001; Mesler, 1994).

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The issue of job stress is of utmost importance to the public health community and working people because it adversely impacts the workforce. Strain has been considered as an environmental condition, as an appraisal of an environmental condition, as a response to an environmental condition, and as a form of relationship between environmental demands and a person's abilities to meet these demands.
Although there are a lot of controversies about the epistemology of job strain, there is an agreement about it as a complex phenomenon related to health. In considering workplace-related stress, it should be recognized that stressors may occur because of individual characteristics of the worker as well as the work environment (Overgaard, Gyntelberg, & Heitmann, 2004; Vanagas, Bihari-Axelsson, & Vanagiene, 2004; Schieman, Van Gundy, & Taylor, 2001).

In this context, the demand–control model (Karasek, 1998; Karasek, 1979) attempts to provide insight into the relationships between psychosocial work characteristics on one hand and health and motivation on the other. Partly because of its elegant simplicity, the model has stimulated several scientific studies (Van der Doef & Maes, 1999; Van der Doef & Maes, 1998; De Jonge & Kompier, 1997). It looks for the determinants of workers' health and motivation in the interaction of two psychosocial job characteristics, namely, the “psychological demands” corresponding to psychological stressors present in the work environment (e.g., high time pressure, difficult and mentally taxing work) and “decision latitude” (or “job control”) comprising the worker's authority to make decisions on the job (“decision authority”) and the breadth of skills used by the worker on the job (“skill discretion”) [(Karasek & Theorell, 1990)].

According to Karasek (1979), Job demand (especially workload demand) express the overall output level of the firm and job decision latitude is closely related to firm’s authority structure and technology. One of the most notable contributors to the field of occupational stress, Karasek (1990), argues that job stress occurs because ‘demands’ of employment exceeds the ‘control’ of the individual needed to interact with those demands. The demand control model of work stress proposed by Karasek and Theorell (1990) suggest that job demands can only be understood if individual perception of control at workplace is taken into consideration. According to this model, the combined effect of high job demand and low job control (low decision latitude at work, low skills discretion) creates recurrent negative emotions and associated psychological stress reaction that, in the long term, affect health adversity, including the cardio-vascular system (Siegrist, 1997). The demand-control model predicts that situation of low demand and low control is very “un-motivating” job setting which lead to
“negative learning” or gradual loss of previously acquired skills. Evidence shows that disengagement from leisure and political activity outside the job appears to increase overtime in such jobs (Karasek & Theorell, 1990).

According to Karasek & Theorell (1990) “active” job with high demand and high control has prestige occupation: lawyers, judges, physicians, professors, engineers, nurses, and managers of all kinds. The “passive” job, with low demands and low control, has clerical workers such as stock and billing clerks, transport operatives and low status service personnel such as janitors. Job stress is the recognized problem in health care workers (Zuger, 2004; Burbeck, Coomber, Robinson, & Todd, 2002; Westman, 2001) and doctors are considered to be at particular risk of stress and stress related problems. Doctors have high degree of psychological morbidity (Kapur, Borrill, & Strikes, 1998; Blenkin, Deary, Sdler, & Agius, 1996; Ramirez, Graham, Richards, Cull, & Gregory, 1996), suicidal tendencies (Lindeman, Larro, Hakko, & Lonnquist, 1996) and alcohol dependency (Murray, 1976) than control of comparable social status. Caplan (1994) reported that about half of senior medical staff suffers from high level of stress and a similar proportion suffers from anxiety.

The demand-control model is based on two central assumptions, as reflected by diagonals A and B in figure I. The first assumption (diagonal A) is that psychological strain (such as chronic fatigue, anxiety, and cardiovascular complaints) is particularly caused by the combination of high psychological demands and low decision latitude (quadrant 1), while the opposite, lack of strain, can be found in a job with low psychological demands and much decision latitude (quadrant 3). The second important assumption (diagonal B) is that work motivation, as well as learning and development
opportunities, occur if job demands are high (but not overwhelming) and decision latitude is high (quadrant 2). The opposite type of work situation occurs in a job in which neither job demands nor decision latitude is very pronounced (quadrant 4). This “passive” work situation is characterized by a decrease in work activities and “negative learning” — a gradual loss of acquired skills.

Recent reviews of the model contend that the demand–control model is appropriate for further investigation since it can predict health and, to a less extent, motivational and productivity outcomes (Van der Doef & Maes, 1999, 1998; De Jonge & Kompier, 1997; Kristensen, 1996, 1995; Schnall, Landsbergis, & Baker, 1994). However, the “active-passive” dimension of the model has been underutilized in organizational research (Theorell & Karasek, 1996). Only a few studies provide some evidence for the active-passive dimension of the model (De Jonge, Dollard, Dormann et al., 2000; Meijman, Ulenbelt et al., 1996; Karasek, 1981). Studies measuring both strain and motivation or active learning find stronger support for the model than do
In this model, psychological job demands refer to a task’s mental workload and the mental alertness or arousal needed to carry job under the given circumstances (Karasek & Theorell, 1990). Job control or decision latitude is a compound of the employee’s autonomy to make decisions on the job and the extent of skills used by the employee on the job (skill discretion: Karasek, 1989). Theoretically, in the JDC model an interaction effect has been described as a joint effect of job demands and decision latitude (Karasek, 1989). Two perspectives, also known as the dissatisfaction and buffer theory (Van der Doef & Maes, 1999, 1998), can be distinguished. According to the first perspective, the most adverse performance effects are expected in a high demands – low control work situation. The second perspective proclaims that (high) control can act as a buffer and thus minimize the potentially negative impact of high demands on employee’s performance. While these perspectives are not mutually exclusive, they have different statistical implications. But the first perspective implies that the nature of the interaction is additive, the second perspective assumes an interaction over and above the main effects. Originally, Karasek (1979) found an interactive effect between job demand and job control. However, a decade later Karasek (1989) stated that: “for the Demand-Control Model, the existence of a multiplications interaction term is not the primary issue”. Opinions differ on this matter, as can be seen in the diversity of operationalizations of demand-control interactions in empirical research (Landsbergis & Theorell, 2000).

Karasek & Theorell (1990) extended the three-dimensional job demands control support (JDCS) model that focuses on three job characteristics: job demands (stressors), job control (decision latitude) and social support (colleagues + supervisors) at workplace. De Jonge & Kompier (1997) pointed out the theory of JDCS model is based on two central assumptions: the first one is psychological dissatisfactions or dissatisfaction which results particularly in work characterized by high job demands in combination with low job control and low social
support, the second one standard work performance will occur in work characterized by high job demands, high job control and high social support. A number of studies have experienced the JDCS model in nursing (De Jonge, 1995; De Jonge & Landeweerd, 1993; Landsbergis, 1988). The outcomes of these research studies normally point out that job control or autonomy seems predominantly to be associated to job satisfaction and productivity, whereas job demands and social support seem particularly to be associated with health complaints and absenteeism (Ab Landeweerd, 2004). Therefore, Karasek’s (1979) job demands-job control model has been powerful theoretical base for various studies of job dissatisfaction (Van Yperen & Hagedoorn, 2003; Cooper, 2000). The hypothetical argument necessary in this model is that individual physiological dissatisfaction results from the interactive effects of one’s job demands and the amount of job control available at workplace. Particularly, Karasek’s theory posits that in order to minimize physiological dissatisfaction, job demands should coordinate to job control so that where ever job demands are high, job control should match the requirement. High job control enables participants to handle the job demands by developing appropriate behavioral response patterns to improve the job performance.

Accumulated evidences indicate that a large amount of research on the job demands-job control model has focused on the job of nurses (Fox et al., 1993; Schaubboeck & Merritt, 2003) and production workers in manufacturing industry (Wall et al., 1996). Some research studies have supported the proposed interaction effect of three variables (Fox et al., 1993), and others have demonstrated no such effect on job dissatisfaction (Landsbergis, 1988). Similarly, some researchers in this area have developed a contingency approach by investigating the extent to which the job demands-job control connection is moderated by individual-level characteristics such as locus of job control and social support. In addition, research on Karasek’s model has largely focused on job demands such as workload and work pace (Fox et al., 1993; Van Yperen & Hagedoorn, 2003). Moreover, there have been a few studies that have applied the job demands-job control model to the social nature of work job demands, that is, job challenges arising from managing inter dependencies with other people in the workplace (Wong et al., 2007). Karasek and Theorell (1990) stated that their three models take up important position between two large bodies of literature, which...
associated with job dissatisfaction and to job description. The significant determinants of job dissatisfaction and active learning are the amount of decision latitude structured into job description. Karasek’s highlighting leading to objective job characteristics as determinants of job dissatisfaction stands in predominantly sharp contrast to Lazarus & Folkman’s (1984) whose point of view on the worker’s judgment and locus of job control, and Caplan et al. (1975), and other members of the Michigan school’s approaches on the fit between the job and the worker’s capabilities or values of job. Siegrist (2000) noted that Karasek’s models have not been accurately adjusted in providing a necessary corrective to these earlier ideas. In doing so, he advocated a clear picture for achieving the high levels of worker productivity, on the one hand, and high levels of worker independence, support and personal development, on the other side.

Nelson & Simmons, (2003) stated that Karasek’s ideas have concerned with interest which relates to their fundamental positive human values or standards. In this way his ideas are well-matched with, and may even have contributed to the current popularity of the constructive psychology movement of working force. In spite of these constructive ideas, the theory is normally documented as being over or under simplified. Karasek’s theory highlighted a few variance in job dissatisfaction by variables (Schreurs & Taris, 1998), mostly as it includes few predictors or mediators and moderators, at the same time as trying to clarify many outcomes associated factors. Karasek & Theorell (1990) protected the simplicity of the theory by suggesting that this is “essential for practical interdisciplinary applications and for the first stages of scientific research”. They admitted that the effects of job demands and job control upon strain can be reduced to minimum level by adding a large number of other predictor variables to the equation job dissatisfaction.

Work Environments, Psychological Environments and Psychopathology

Work environments have many properties that may affect both physical and psychological well-being. Here, the concern is to better understand those aspects of work environments which are thought to be important influences on the psychological well-being of workers.
For at least the last 30 years, empirical research and theory concerning work and well-being have tended to focus almost exclusively on the negative impacts of work on well-being and, more specifically, on the impact of work stress on health. There is much evidence to suggest that work can also have beneficial effects on both physical and psychological health and being in employment is generally less harmful than being unemployed. However, interest in these salubrious aspects of work appears to have waned as the negative and stressful aspects have come to dominate lay and professional thinking about work and well-being.

The work environment can be thought of, simply, as the environment in which people work. As such, it is a very broad category that encompasses the physical setting (e.g. heat, equipment), characteristics of the job itself (e.g. workload, task complexity), broader organizational features (e.g. culture, history) and even aspects of the extra organizational setting (e.g. local labor market conditions, industry sector, work-home relationships). The psychological environment can be thought of, more specifically, as those features of the work environment which are relevant to worker behaviour. By behaviour, the three related types of psychological phenomena are considered: affect (e.g. emotions, mood, psychological symptoms, affective disorders); cognitions (e.g. attitudes, perception, decision-making); and behaviours (e.g. effectiveness, absence, motivation). The psychological environment is therefore the set of those characteristics of work environment that affect how the worker feels, thinks and behaves. How the physical work environment creates the physical conditions that can affect physical health can often be fairly transparent. The presence of a noxious substance to which workers are exposed, for example, creates a relatively direct link between an aspect of the physical environment and a subsequent health problem. However, the way in which work environments create psychological environments is somewhat less transparent and less direct. Two issues are relevant here. First, a great number of aspects of the work environment could potentially affect psychological well-being because, the interpretations which workers make of their working conditions have a central role in producing psychological well-being. It is not therefore possible to state with certainty that particular aspects of work will necessarily have an impact on well-being as it depends crucially on the way in which work is perceived. The second issue is
that it may often be the combination of a number of key work conditions present, which are important for psychological wellbeing. Any single work characteristic alone may not be particularly relevant but, rather, it is the total configuration of these characteristics.

There have been numerous attempts to identify the key psychological features or characteristics of jobs. Characteristics that are thought to be important for well-being include qualitative and quantitative workload, the control or discretion workers have over the way they perform tasks, the level of task repetitiveness, and role ambiguity. The way in which jobs are designed, and the way they are designed in relation to technologies, is thought to be a major determinant of job characteristics (Wall & Parker, 1998). The work environment therefore creates these job characteristics through the way in which jobs are designed and organized and is thought to be one of the most important sets of influences on psychological well-being.

Workplace factors may precipitate illness as well as perpetuate disability associated with mental illness. There is good evidence that certain kinds of workplace stress are associated with a higher risk of psychiatric morbidity (Bilsker, Wiseman, & Gilbert, 2006). It could be expected that the incidence of such workplace stress is higher in developing countries. Thus far, social attention has focused primarily on the impact of harsh working environments on people's human rights, rather than their emotional wellbeing specifically.

Point of departure of several models in the occupational health literature is that job strain is the result of a disturbance of the equilibrium between the demands employees are exposed to and the resources they have at their disposal. For example, according to the well-known demand-control model (DCM; Karasek, 1998, 1979), job strain is particularly caused by the combination of high job demands (particularly work overload and time pressure) and low job control — “the working individual’s potential control over his tasks and his conduct during the working day” (Karasek, 1979). Thus, one basic premise in the DCM is that employees who can decide themselves how to meet their job demands do not experience job strain (e.g. job-related anxiety, health complaints, exhaustion, and dissatisfaction). According to Karasek (1979), the
individual’s decision latitude is the constraint which modulates the release or transformation of “stress” (potential energy) into the energy of action.

There is indeed empirical evidence showing that particularly the combination of high job demands and low job control is an important predictor of psychological strain and illness (Schnall et al., 1994; Karasek, 1979). Although the literature provides considerable support for the strain hypothesis, support for the buffer hypothesis – stating that control can moderate the negative effects of high demands on well being – is less consistent (Van der Doef & Maes, 1999; De Jonge & Kompier, 1997). This may suggest that job control is only partly able to buffer the impact of job demands on employee well being. Nevertheless, the DCM has dominated the empirical research on job stress and health over the past 20 years (Cordery, 1997).

It is equally significant to emphasize that global economic changes in the workplace, requiring employees to work harder and produce more, create a context in which psychosocial factors such as psychological demand and control potentially play an important role in the etiology of disease. Psychosocial factors at work are associated with a variety of diseases including depression (de Lange, Taris, Kompier et al., 2003; Mausner-Dorsch & Eaton, 2000). Depression is a leading source of disease burden internationally and of disability-adjusted life-years in high income countries (Mathers & Loncar, 2006). Given this, a better understanding of the role of psychosocial factors in the development of depression could impact worker’s disease burden. Most research in workplace mental health has been based in developed countries and hence has focused on the employment conditions defined as fair employment, which refers to employment in which there are clear agreements regarding employer-employee relationships (Benach, Muntaner, & Santana, 2007). However there are a variety of employment conditions with more unstable workplace environments, as described in the WHO Employment Conditions Knowledge Network (EMCONET) Report by Benach et al (2008). These include precarious employment, defined as temporary work contracts that offer reduced social security and stability; informal employment, which refers to non-regulated arrangements between employers and
employees and represents the most prevalent working condition in developing countries; child labor, particularly the employment of children under the age of 12; and slavery, defined as employment in which individuals are forced to work as a result of being subjected to mental or physical abuse with no relationship with their employer other than as a "commodity" (Benach, Muntaner, & Santana, 2007).

A stressful work environment often causes worsened interpersonal relationships, leading to workplace bullying (Shigemura & Nomura, 2007). In the healthcare setting, factors that increase the risk of hostile behaviors include stress (Felblinger, 2009). The perioperative setting fosters bullying behavior because of its inherent stress including work demands (Bigony, Lipke, Lundberg et al., 2009). Matthiesen & Einarsen reported that even the perpetrators of bullying, as well as targets and provocative victims of bullying, showed elevated levels of role stress in the form of unclear or conflicting demands and expectations regarding work tasks and daily work (Matthiesen & Einarsen, 2007).

On the other hand, workplace bullying has been suggested to cause symptoms of depression (Marsh, Patel, Gelaye et al., 2009; Hansen, Hogh et al., 2006; Niedhammer, David et al., 2006; Kivimaki, Virtanen et al., 2003; Mikkelsen & Einarsen, 2002, 2001) or suicide ideation (Sterud, Hem, Lau, & Ekeberg, 2008) and sleep disturbance (Niedhammer, David, Degioanni et al., 2009).

There is evidence from both cross-sectional (Bromet, Dew, Parkinson, Cohen, & Schwartz, 1992; Estryn-Behar, Kaminski, Peigne et al., 1990; Broadbent, 1985) and longitudinal studies (Kawakami, Haratani, & Araki, 1992) that high levels of psychological demands, including fast work pace and high conflicting demands are predictive of common mental disorders that is, largely, mild-to-moderate, depressive and anxiety disorders, frequent in the general population and identified by screening questionnaires and standardized psychiatric interviews. On the other hand, high levels of social support at work from colleagues and supervisors have been found to be protective of mental health in both cross-sectional (Bromet, Dew, Parkinson, Cohen, & Schwartz, 1992) and longitudinal studies (Kawakami, Haratani, & Araki, 1992). Decision latitude has been associated with common mental disorders either
singly or in combination with job demands to replicate Karasek’s job strain model. High levels of decision latitude have been found to be protective of mental health in cross-sectional studies (Warr, 1990; Hesketh & Shouksmith, 1986).

Management has generally been identified as a high stress occupation (Noblet et al., 2001; Cohen, 1997; Bacharach & Bamberger, 1992; Beehr et al., 1990; Karasek, 1979). Recent research has indicated that work related stress among managers is reaching epidemic proportions (Noblet et al., 2001; Cartwright & Boyes, 2000; Williamson & Vine, 1998) and that when compared with other occupations they are subjected to high levels of stress (Cohen, 1997). The high rate of stress being experienced by managers is a serious concern, considering the important role they perform in an organization (Noblet et al., 2001). The job of a manager has been defined as demanding, complex and varied. It includes the management of people, information and decision-making processes, and therefore is a critical human resource (Fryer, 1997). Yet, the increasing demands and constraints being imposed on managers by the internal and external environment have resulted in longer working hours being experienced, which can have adverse psychological and physiological consequences. The central role that managers play in the performance of an organization suggests work-related stress is not just a direct health threat to the manager, but is also a severe risk to organizational success (Brett & Stroh, 2003; Bernin & Theorell, 2001; Albrecht, 1979).

Ghosh (2000) studied the pattern of occupational stress strain in two different occupational groups, namely physicians and executives. It was observed that the executives differed significantly from physicians in terms of role insufficiency and responsibility; for an executive there was a poor fit between their skills and the job they were performing. Veloutsou & Panigyrakis (2004) studied the effect of brand managers’ role stress (role ambiguity, role conflict and role overload) perceived performance and satisfaction on the intention to leave. The results revealed that increased role stress is associated with lower levels of perceived job performance and job satisfaction, but its influence on the intention to leave was not significant. Earlier, Menon & Akhilesh (1994) report the study of managerial stress and its dependence on the functional area of the
managers. Nine stressors were identified through a literature search and interviews with managers of different functional areas as well as with academicians as being “functional dependent”. Analysis revealed that eight of the nine stressors were dependent on the functional areas and not on the age of the manager, hierarchical levels or tenure in the organization.

Rout (1999) examined the sources of stress associated with high levels of job satisfaction and mental health among practice managers and women general practitioners, and compares the job satisfaction, mental health and job stress among practice managers and women general practitioners. The results indicate that there were no significant difference between practice managers and women practitioners on the mental health scale. Women general practitioners experienced less job satisfaction with regard to the amount of work, and hours of work than the practice managers. Sumlders & Nijhuis (1999) conducted a cross sectional study on 1755 male public sector workers regarding job control and job demands and its effect on absence rate and absence frequency. It was found that job control was associated with low absence frequency (beta = 0.10, p < 0.01) and job demand associated with low absence rate (beta = -0.08, p < 0.005).

**Depression and Anxiety in relation to Job Demand and Control**

Depression is an emotional state of dejection, feeling of worthlessness and guilt and usually apprehension (Pestonjee, 1992).

Work stressors directly affect workers depressive symptoms. Kandel, Davies, & Raveis (1985) examined the effect of role stress on depressive symptoms among 197 working women in New York. Occupational, household, marital and parental roles were measured. The occupational role was a significant stressor including depressive symptoms. Depressive symptoms were more severe when occupational role was combined with the household roles. Authors further reported that significant stress related factors in depression was the levels of control people have on work at home and at job. Cahill & Landsbergis (1996) examined job strain among 4,018 post office mail-handlers in the US using the job demands and control model. They measured job demand, job
control, supervisors support, and psychological strain through a self administered questionnaire survey. Heavy job demands, low job control and low supervisors support were strongly related to psychological strain.

Mausner-Dorsch & Eaton (2000) studied the effects of psychological work environments on depression using the job demands and control model among 905 full time workers in the Baltimore area. Psychological work environments (job demand and job control) were measured by Karasek's (1979) Job Content Questionnaire (JCQ) and depression data were collected by the National Institute of Mental Health Diagnostic Interview Schedule (DIS). Low decision authority was significantly related to a high number of depressive symptoms. Heavy job demands tend to increase depressive symptoms however, this relationship was not significant.

Abramis (1994) interviewed 281 workers living in the Greater Detroit area to identify a clear relationship between work stressors. Strains were measured by job dissatisfaction, anxiety, anger and depression by Hopkins symptoms checklist. Job performance was measured by technical performance, social performance, absenteeism and tardiness. Depressive symptoms were significantly related to role conflict and absenteeism was related to role conflict, job insecurity, anxiety and depression. Technical performance was significantly associated with role conflict, depression and anger. This study showed not only that work stressors were directly related to depressive symptoms and job performance but also that depression mediated the relationship between work stressor and job performance.

Driscoll, Worthington, & Hurrell (1995) in a study on depression among workers found that, workers assaulted at workplace experience depression. The study was conducted on 5000 public service employees. Further, the depressed employees reported higher anxiety and job satisfaction. In addition it was also found that work related social support had an influence on the experience of depression. Taris, Bok, & Calje (1998) studied the relationship between job characteristics and depression among 593 young Dutch workers. The results showed that depressive workers were less likely to experience job transition than non-depressive workers. They also found that if depressive workers did experience a job transition, work outcomes were less positive than for non
depressive workers. It was concluded that results between job characteristics and depression can be constructed as a reciprocal relation.

Dragano, He, Siegrist, Moebus, Jockel, & Erbel (2008) conducted a comparative analysis of two theoretical models, the demand-control and the effort reward imbalance model. The investigators interviewed 1,811 working men and women from the baseline screening of an epidemiological cohort study (job stress, depressive symptoms (CES-D), health behavior, medical history, and socio demographic characteristic). Results indicated that control, effort reward imbalance and over commitment were independently associated with depressive symptoms. Further it was reported that relatively highest level of depressive symptoms was found in employees who had low control and high over commitment. It was concluded that components of adverse psychological work environment are associated with depressive symptoms in an unselected working population.

More recently, Rusli, Edimansyah, & Naing (2008) studied the relationship between working condition (job demands, job control and social support), stress depression and perceived quality of life factors (physical health, psychological well being, social relationship and environmental conditions). The variables were assessed among 698 male automotive assembly workers in Malaysia. The scales used in the study were validated using Malay version of the Job Content Questionnaire (JCQ), Depression Anxiety Stress Scale (DASS) and the World Health Organization Quality of Life Brief (WHOQOL-BREF). A structural equation modeling (SEM) analysis was applied to test the structural relationships of the model. The results of the SEM supported the hypothesized structural model. The model showed that social support (JCQ) was directly related to all 4 factors of the WHOQOL-BREF and inversely related to depression and stress (DASS) and inversely related to social relationships (WHOQOL-BREF). Stress was directly related to depression (DASS) and inversely to physical health, environmental conditions and social relationship (WHOQOL-BREF). Depression (DASS) was inversely related to psychological well-being (WHOQOL-BREF). It was further indicated that depression (DASS) mediates the relationship between Job demand and social support (JCQ) to the 4 factors of WHOQOL-BREF.
Frone, Russell, & Cooper (1995) conducted a longitudinal study on 795 employed adults and identified the association between work pressure, lack of autonomy and role ambiguity with the help of CES-D scale. The response rate was 67%. Results indicated that work pressure, lack of autonomy, role ambiguity is all associated with depression. Earlier, Karasek (1979) examined the role of decision latitude and job demand in 1896 working males and found that decision latitude was negatively associated with depression and absenteeism. Results also indicated that the job demand is associated with depression. Later, Karasek (1990) conducted a cross sectional study on 8504 white collar workers and found that decreased job control is associated with depression in men but not in women.

Further, Plaisier et al. (2006) suggested that poor working conditions may be an important precursor of stress and may, therefore contribute to the development of depression. Several other researchers studied depression at workplace. Majority of these studies supported the existence of depression at work place and its relation with other psychosocial variables (Neidhammer, Chastang, David, Barouhie, & Barrandon, 2006; Pikhart, Bobak, Pajak, Malyutina, Kubinova, Topor, Sebaova, Nikitin, & Marmot, 2004; Wang & Putten, 2001; Karasek, 1979). Ravindran et al., (2002) reported that major life stressors contributed towards depression and depressive illness, accompanied by marked reduction in quality of life. Virtanen, Honkonen, & Kivimaki (2007) found that in a Finnish work population, high job demands and strain are associated with increased depression and increased future use of antidepressants medication among men.

Chambers & Campbell (1996) conducted a postal survey to measure depression levels in general practitioners and identified the association with personal and practice characteristics. Hospital Anxiety and Depression Scale was used and the response rate was 69%. No gender difference was found. Overall 10% of the respondents were ‘cases’ of depression and 16% others had borderline depression scores. Depression was found to be associated with over occupied job and work overload. Earlier, Sutherland, & Cooper (1993, 1992) studied 91 British General Practitioners and found that depression scores for both men and women doctors had
significantly increased compared to levels in a previous study (Cooper, Rout, & Fragher, 1989) of 1817 general practitioners.

Recently, Uncu, Bayram, & Bilgel (2006) conducted a descriptive cross sectional study to investigate a group of Turkish primary health care physicians' job related emotional perception and to assess their reaction in terms of stress and depression. The response rate was 74%. Job Related Effective Well-Being Scale (JAWS) and Depression Anxiety Stress Scale (DASS) were used. Results indicated that job related negative emotional perceptions are associated with reaction in terms of stress and depression.

Caplan (1994) studied stress and depression in a group of senior health services staff. Postal survey method was used to collect data from 81 hospital consultants, 322 general practitioners and 121 senior hospital managers. Results of the study indicated that 47% scored positively on the general health questionnaire indicating high level of stress. Depression score indicated that 27% of general practitioners were likely to be depressed or borderline. Study also indicated that general practitioners were more likely to be depressed than managers. There was no significant difference between general practitioners and consultants with regard to depression. Results further indicated that general practitioners were significantly more likely to show suicidal thinking than compared to consultant. No other significant difference was found between the groups.

In a study on gender differences in depression among doctors, Rout (1999) studied 130 males and 75 female doctors. The investigation revealed that male doctors showed significantly depression scores than the normal and no gender specific difference among the doctors was found. Steward and Barling (1996) examined whether work stressors and depressive mood affected interpersonal job performance of 71 physicians, nurses, and technicians. Results indicate that role conflict was a significant work stressors related to depressive mood. Heyworth et al. (1993) conducted a cross sectional study task clarity and supportive communication among 201 trainee and consultant doctors. The response rate was 72% and the findings revealed that task clarity and supportive communication are associated with lower depression.
The above discussion indicates the positive relationship between depression and job demand, and how job control act as a moderator to reduce depression in the workplace.

Anxiety

Anxiety is a psychological and physiological state characterized by cognitive, somatic, emotional, and behavioural components (Seligman, Walker, & Rosenhan, 2001). Anxiety is often accompanied by physical sensation such as heart palpitation, nausea, and chest pain, shortness of breath, stomach aches, or headache. The cognitive component entails expectation of a diffuse and certain danger. Anxiety is a negative affective state characterized by worry over future misfortune by heightened physiological arousal (Eysenck, 1992). Earlier Lazarus & Averill (1974) regarded anxiety as a complex emotional syndrome which consists of unpleasant cognitive and affective status and physiological arousal as basic components.

According to American Psychiatric Association (1975) anxiety is defined as "apprehension, tension, or uneasiness which stems from the anticipation of danger, the source of which is largely unknown or recognized.

Spielberger (1972) defined anxiety as an unpleasant emotional state or condition which is characterized by subjective feelings of tension, apprehension, and worry, and by activation or arousal of the autonomic nervous system.

Psychologists describe anxiety as feeling of fear, dread and tension. According to Feldman (1993) anxiety is typically associated with perception of threat or uncertainty, anticipation of future events, and increased autonomic activity. Anxiety is a vague feeling of uneasiness or apprehension- a gloomy anticipation of impending doom- that often involves a relatively uncertain or unspecific threat (Sarafino, 1998).

Trait Anxiety and State Anxiety

Cattell & Colleagues (1958) identified two distinct factors of anxiety. The first factor was referred to as trait because it includes variables consisting of relatively stable personality characteristics. The second factor was labeled as a state anxiety factor on
the bases that it included variables with unitary response patterns that appeared to fluctuate over time (Cattell, 1966). Spielberger (1966) elaborated the findings and formulated a conceptual framework of trait-state anxiety in which the distinction between stable and unstable dimensions of anxiety was highlighted. Spielberger (1966) also purposed that an operational conceptual definition be made between anxiety as a transitory state that fluctuate across time (state anxiety) and anxiety as personality trait that is relatively stable across time (trait anxiety).

**Anxiety as a Trait**

Anxiety as a personality trait (A-Trait) was regarded as an individual's average or normal level of anxiety unrelated to the impact of situational variables, and is defined "as motive or acquired behavioural disposition that predisposes an individual to perceive a wide range of objectively non-dangerous circumstances or threatening, and to respond to these with A-State reaction disproportionate in intensity to the magnitude of the objective danger" (Spielberger, 1966).

Trait anxiety refers to the type of anxiety that is inherent within an individual's personality and reflects a great deal of stability across time and situation (Spielberger, 1983). Anxiety as a trait refers to individuals with relatively stable continuous disposition towards anxiety (Addolorato et al., 1997).

Specifically, anxiety as a personality trait has been defined in terms of relatively individual differences in anxiety proneness, i.e. to perceive variety of situation as threatening and to respond to situations with differential evaluations in state anxiety (Spielberger, 1966). People who are high in A-trait tend to perceive a large number of situation as threatening than with people who are low in A-trait, and to respond to threatening situation with A-state elevation of greater intensity. Thus trait anxiety is a behavioural disposition (Spielberger, 1972). It has been found that an A-Trait individual is ego threatening condition or situations manifest greater changes in A-State than do low A-trait individuals. For physical dangers situation, however, high A-Trait individuals do not show greater increase in A-State than do low A-Trait individuals (Rappaport & Katkin, 1972; O'Neil, Spielberger, & Hansen, 1969).
Anxiety as a State

Anxiety as a state (A-state) is defined as “subjective, consciously perceived feelings of apprehension and tension, accompanied or associated with activation or arousal of the autonomic nervous system” (Spielberger, 1966).

State anxiety is defined as an unpleasant emotional arousal in face of threatening demands or dangers. A cognitive appraisal of threat is a pre requisite for the experience of this emotion (Lazarus, 1991).

State anxiety refers to a type of situational anxiety that appears as a reaction to specific situational triggers (Spielberger, 1983). State anxiety is not inherent to an individual's personality and is not consistent across time and situation (Spielberger, 1983). State anxiety is transitory and is conceptualized as an emotive state characterized by subjective feeling perceived on a conscious level as apprehension and tension with an increased in the activity of the autonomous nervous system, which varies with time (Addolorato et al., 1997)

To conclude, trait anxiety is a general disposition to experience anxiety, or to be in anxious affective state more frequently, and State anxiety is the immediate experience of anxious affect. Within most normal population, levels of trait anxiety are more or less normally distributed and state anxiety levels fluctuate according to environmental factors (Spielberger et. al., 1983).

Researchers reported that anxiety is an emotion that underpins much of our behavior in organization. It is a response to what is as yet unknown in our self or the environment. Anxiety is an important symptom of work related strain (Kahili, 1988; Gold & Michael, 1985). Anxiety is experienced as undesirable and ways are devised to avoid it being overwhelming as stress (James, 1999). To avoid anxiety becoming overwhelming it is defended against in variety of ways. The individuals' employees' variety of strategies but the organization develops mechanism the system as a whole to keep these anxieties to a creative or manageable levels (James, 1999).
Job anxiety has been defined as general feeling of vague, fear and apprehensive mental set up of employers regarding various job components in relation to his frame of reference of his psychological makeup (Srivastava, 1977). The term job related anxiety implies that there are work conditions, task demands, and/or related occupational stressors that are associated with the onset of acute and/or chronic state of anxiety or manifestation of anxiety. The demand control model predicts that workers in occupations which offers little personal control and expose employees to high level of psychological demands would be at risk of adverse health outcomes, including anxiety disorders (Karasek & Theorell, 1990).

For assessing anxiety researcher have developed various tools, the Taylor Manifest Anxiety Scale (MAS) and the Mandler Sarason's (Mandler & Sarason, 1952) Test Anxiety Questionnaire (TAQ) were among the first of psychometric tests which were used to assess individual difference in anxiety in adults. Other instruments designed to asses anxiety in adults have been constructed by Spielberger et al (1970), Cattell & Scheier (1963), Endler, Hunt, & Rosenstein (1962), & Zuckerman (1960). A number of self reported scale have been developed for measuring general and test anxiety in children (Spielberger, 1973; Sarason, Davidson, Lighthal, Waite, & Ruebush, 1966). Test Anxiety Scale (Sarason, 1972a, 1978) and test Anxiety Inventory (Spielberger, Gonzaler, Taylor, Algaze, & Anton, 1978) measure test anxiety as a situational personality trait.

General (Trait) Anxiety Scale developed in India includes Anxiety Scale (Sinha, 1965) and its shorter version (Khan & Hassan 1981), Taylor Manifest Anxiety Scale (Singh & Thakur, 1968), Cattell & Scheier's IPAT Anxiety Scale (Hundal & Kaur, 1974), Comprehensive Test of Anxiety (Krishna, 1970; Sinha & Sinha, 1969), Hindi version of State Trait Anxiety Inventory (Spielberger & Sharma, 1976; Spielberger, Sharma, & Singh, 1973). Tripathi & Rostogi (1978) have developed an anxiety scale in which item for state-trait anxiety and also item for free floating anxiety have been included.
Recently, the validated Malay version of the Depression Anxiety Stress Scale (DASS) questionnaire is being used to measure the negative self perceived emotional states of stress, anxiety and depression (Edimansyah, Rsuli, Naing, Mazlau, Rampal, Shamsul, Reza, Ahmad, Azwan, Mazalisah, & Kamarudin, 2005). The Anxiety scale assesses autonomic arousal, skeletal muscles effects, situational anxiety, and subjective experience of anxious affect.

Why a Study of Teachers

The labor force has undergone a restructuring process due to the new socio economic model arising from globalization, which has brought about structural changes based on capitalist practices (Giovanetti, 2006). This new worldwide demand has led to negative consequences, such as precarious working conditions, intensified professional activities, and increased exposure to health risk factors, which, in turn, has resulted in social exclusion and a progressive decline in health conditions (Brasil, 2001).

Teachers have been increasingly presented with significant occupational health problems (Carlotto, 2002). They have been assigned an increasing number of activities, which exceed those traditionally allocated to this profession. These activities are held mainly responsible for the success or failure of educational results (Gomes, 2002).

The teaching profession is characterized by overcrowded classrooms, the presence of unhealthy factors and the structural inadequacy of the institutions. When added to the increased work load, these deficiencies may cause discomfort and dysfunction. They stem from the lack of rest breaks, a situation that contributes to high absenteeism and job abandonment (Marchiori, 2004). The work environment and psychosocial factors have been considered largely responsible for the health problems observed in teachers (Giovanetti, 2006).

In a study on 498 non-university teachers in Spain, Moreno-Abril, Luna-del-Castillo, Fernandez-Molina, Jurado, Gurpegui, Lardelli-Claret, & Galvez-Vargas (2007) evaluated the association between psychiatric morbidity [measured with General Health Questionnaire (GHQ)] and workplace socio demographic and personality related
variables in school teachers. They found that psychiatric morbidity was associated with heavy workload, physical assault from pupils, low appraisal by superiors, low job satisfaction, high stress, female gender (regarding personal characteristics), high scores for harm avoidance and novelty seeking and low scores for directedness. Another study was undertaken to investigate the relationships among job stress, burnout, depression, and health among university teachers in China. Using a stratified random sampling method, a sample of 300 university teachers completed the Occupational Stress Indicator 2 (OSI2), Maslach Burnout Inventory General Survey (MBIGS), Beck Depression Inventory (BDI), and 36-item Short Form Health Survey (SF36). Path analysis showed that burnout was a mediator among job stress, the occurrence and exacerbation of depressive symptoms, and poor physical health (Zhong, You, Gan, Zhang, Lu, & Wang, 2009).

OBJECTIVES

In view of the earlier discussion the aim of the study is to test the strain, iso-strain and interaction hypothesis, with the scales of anxiety, stress, depression, worry, and negative automatic thoughts as outcomes among school teachers. The study starts with the following objectives:

1. To examine the association between psychological demands, control and social support in the workplace with anxiety, stress, depression, worry, and negative automatic thoughts.

2. To examine the association between composite indexes strain (demands/control) and iso-strain (strain/support) with anxiety, stress, depression, worry, and negative automatic thoughts.

3. To examine the interactional effect between demand, control & support, regarding levels of anxiety, stress, depression, worry, and negative automatic thoughts.