

PROFESSIONAL CHARACTERISTICS AND PSYCHOLOGICAL
STRESS AMONG PHYSICIANS IN THAILAND

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ABSTRACT

Title of Dissertation	Professional Characteristics and Psychological Stress among Physicians in Thailand
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Objective: To study psychological stress, job stress, job satisfaction and job-personal life conflict of Thai physicians, study differences of attitudes towards the job between physicians in public and private organizations, and physicians in Bangkok and other provinces, and correlation between factors which affected job stress and psychological stress among Thai physicians.

Study Method: Samples were randomly taken from physicians throughout the country and in all fields by having those physicians answer self-report questionnaires. The questionnaires comprised 3 main parts; 1) population data 2) attitudes towards the job and other aspects related to the job both qualitative and quantitative, and 3) THAI GHQ-28 psychological stress test. The correlation between factors was analyzed by using path analysis.

Study Results: Thai physicians had psychological stress at 0.09 points and job stress at 4.54 points. The field with highest points of stress was surgery and the

fields with lowest points were psychiatry, ophthalmology and otolaryngology. The overall job satisfaction was at 6.28 points, and job-personal life conflict was at 5.33 points. From analyzing correlation using path analysis, it was found that the top 3 factors which affected job stress the most were job characteristics (-.357), organization and policy (-.286) and job-personal life conflict (.202). Factors which affected job satisfaction the most were organization and policy (.321) and job-personal life conflict (-.229). The correlation between job stress and psychological stress was quite high (.421). Physicians in public organizations had higher job stress and psychological stress than physicians in private organizations. Physicians in private organizations had higher job satisfaction than physicians in public organizations. Job stress and psychological stress of physicians in Bangkok and in other provinces were not different. Physicians in Bangkok had higher job satisfaction than physicians in other provinces.

Conclusions: Thai physicians had psychological stress in normal level; job stress in moderate level; job-personal life conflict in moderate level; and job satisfaction in moderate level.

Key Words: job stress, psychological stress, mental health of physician

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CHAPTER 1

INTRODUCTION

1.1 Significance of the Study

Illness pattern today has changed significantly from its nature in the past as found in the studies done by public health specialists from all over the world jointly paying effort to investigate burden of diseases during 1990-2002. It was concluded that there was a change in epidemiologic transmission beyond that was expected by those public health specialists. With respect to burden measurement under the system of Disability Adjusted Life - Year - DALY which is the sum of Years of Life Loss - YLL and Years Lived in Disability - YLD, scale in Year, it indicated that from the first 10 burden of diseases, the 1st significant problem in 2002 was ischemic heart disease; being elevated from the 5th rank in 1990. The 2nd ranked problem was 'Unipolar Major Depression'; being elevated from the 4th rank in 1990. Psychological problems could cause burdens more than that was expected by many accounting for 11% of total loss. The 5 most significant risk factors for loss included malnutrition, environmental hygiene and clean water, alcohol drinking, unsafe sexual intercourse, and occupational hazard. The last one in particular is the new area of science which has been substantially studied in this century in order to find preventive, monitoring and curative measures. And if we consider the first two ranks of burden of diseases

since 2002 afterward, it can be noticed that they are partly caused by job stress which is a major problem to workforce in various countries (Foley, Gale and Gavenlock, 1995: 171; Australian Occupational Health and Safety Unit, 1998: 17; Cooper, 1998: 1-5; Kinman, 1998: 31; Moodie, Borthwick, 1999: 296; Cooper, Dewe and O'Driscoll, 2003: 10; Thienchay Kiranandana, 1996: 22; Suree Kanchanawong and Chariyawat Khomphayak, 2002: 36; Department of Mental Health, 2003: 20)

Since 1957 International Labour Organization and World Health Organization have underlined mental health problems resulted from work. All the countries realize that job stress is one of the priorities to which all workforces and public health systems should urgently pay attention as job stress can give rise to direct impact on efficiency and effectiveness of labour force at national level. Whether any workforce has sound mental health or not will depend on the consistency between the goal of assigned works, working environment, task volume, compensation etc. and capacity and characteristics of an individual (Schieman, Van Gundy and Taylor, 2001: 80-96; Staven, Hofoss, Aasland and Loge, 2001: 194-199; Dolbier, Soderstrom and Steinhardt, 2001: 469-485; Overgaard, Gyntelberg and Heitmann, 2004: 35-41; Vanagas, Bihari-Axelsson and Vanagiene, 2004: 1014-1018).

World Health Organization has encouraged for extensive researches that have brought about range of information especially from those countries with developed industry such as Scandinavian countries, European countries, Australia and the US etc. The first meeting between the Governing Body of International Labour Organization and World Health Organization

regarding job stress was held at Geneva in 1984. That meeting was aimed at gathering research results and discussing on how to find intervention measures for the existing problems. Diseases arisen out of job stress are known to be entitled to compensation and have thus led to problems related compensation dispute and considerable economic loss in many countries including the US, European and Scandinavian countries. In 1985 it was initiated in the US to study on job stress in 13 states and found that compensation demand for diseases resulted from job stress accounted for 11% of the total amount of compensation for occupational diseases. It was further estimated that both direct and indirect loss solely resulted from medical costs was around 80 to 150 billion USD per year saved for loss resulted from indefinite reduction of productivity (Evanoff and Rosenstock, 1994: 180-236; Foley, Gale and Gavenlock, 1995: 190-194; Australian Occupational Health and Safety Unit, 1998: 17; Kinman, 1998; Moodie and Borthwick, 1999: 297; Danziger, 2000; Cooper et al., 2003: 10).

According to established studies, the career recognized by all the countries and WHO as one of the most stressful jobs is "**Doctor**" (Frank, Biola and Bunnett, 2000: 155-159; Simoens, Scoot and Sibbald, 2002; Nyssen, Hansez, Baele, Lamy and Keyser, 2003; Vanagas and Bihari-Axelsson, 2005: 59; Schernhammer and Colditz, 2004: 1; Nylenna, et al., 2005; Holt and Mar, 2005: 599; Vanagas, 2005: 3-4; Bruce, H. M. Conaglen and J. V. Conaglen, 2005: 272-278; Finset et al., 2005: 1-7). This is because of number of working hours per day and per week, great number of patients, research work, instruction works, administrative works involved by

doctor, patient's expectation, relationship with colleagues and being sued by patient etc. Such are the reason for low satisfaction among doctors toward one's career and can ultimately lead to job stress (Barg, 2006: 1). Moreover, job stress can also bring about suicide, self harm, drug and alcohol addict. In the US for an instance, the study on mortality and morbidity rate from suicidal attempt revealed that 70% of cases occurred among doctors (Schernhammer and Colditz, 2004: 3). The study in Australia showed that doctor suffered from alcohol and drug addict, depression and suicidal idea at a higher rate than that of other careers (Schernhammer, 2005: 2473-2476).

For Thailand, its health system has been changed dramatically during the past decade in terms of both concept and policy while Thai population has longer average life span; 68 years old for male and 75 years old for female both of which are higher those global means (65 and 69 years old for male and female, respectively). The proportion of senior citizen has increased from 9.43% in 2000 to 11.7% in 2010. Such senior people have to suffer from certain chronic diseases and aging diseases e.g. hypertension, diabetes, degenerative bone and joint diseases, ischemic heart disease and Alzheimer disease etc. Saved for accident, this situation has unavoidably led to problems from shortage of medical personnel. The Office of The Civil Service Commission (OCSC) in cooperation with Chula Unisearch, Chulalongkorn University (News, MCOT.Net, 2009) revealed the fact on governmental manpower that number of physician actively working in clinical practice in Thailand was equal to 31,939 and the ratio of physician against Thai population

was 1: 1,985 where 21,500 of them worked in government sector representing the ratio of 1: 2,948 compared with standard ratio given by WHO at 1: 5000 (Ministry of Public Health, 2005b; Ministry of Public Health, 2006: 2-6; National News Bureau of Thailand, The Government Public Relations Department, 2008). The overall picture of the above ratio may dictate that Thailand is not facing shortage number of doctor but if we enumerate the details of such ratio, it would show that number of doctor in the country is still actually inadequate as such number includes those working in administrative field, leaving for further study and resigning for other careers including working in private hospital and thus lowering the number of practicing physician to desiring one. Further, due to unbalanced distribution, some rural areas have been experiencing severe shortage of doctor. In 2005, the northeast had lowest ration of doctor against population at 1: 7,466 while the ratio of Bangkok was 1: 879 (Ministry of Public Health, 2005a; Ministry of Public Health, 2006: 2-6; Churdchoo Ariyasriwatana, 2009).

Ministry of Public Health concludes that if the figure were to be calculated based on the population of 100,000, it would appear that Thailand has the average number of doctor at 30.08 compared with other countries in the same region as Singapore at the average of 140 and Malaysia at 70.19 while the average number for China is 164.25 or those of other developed countries such as USA at 548.90, Japan at 201.36, France at 329.06 and Australia at 249.13 etc. (World Health Organization, 2004; Department of Mental Health, 2003).

The fact that doctors working in government sector have to work overload due to large population size with unreasonable compensation, high expectation from the patient and medical suing etc. has consequently left them with inadequate spare time to gain additional professional or other useful knowledge and also to rest or go to the exercise or even to spend their lives with their families. All of these have ultimately led to job stress and decreasing performance. It is not surprised that during the last many years, there have been almost a thousand of doctors resigning from official medical facilities since the economic crisis in 1996 and only in 2003 there were as many as 316 doctors resigning from government hospitals since the introduction of 30-Baht health security scheme. More particularly, 1 doctor in the northeast has to look after the average of 20,000 people while the figure is only 1 doctor for 800 people in Bangkok or 20 times less. In addition, rapid expansion of private hospital, 344 hospitals nationwide and 102 hospitals in Bangkok in 2006, giving higher compensation for less number of patients, has absorbed medical personnel from government sector to private sector and from rural area to urban area. The policy on promoting international private hospital by issuing visa for foreigner wishing to seek for medical service from 7 private hospitals in Bangkok gained income from almost 500,000 foreigners for an amount of 8,000 million baht in 2001 and it is speculated that for the near future health care business will generate income for more than 50,000 million baht. This has intensified the problem of losing personnel from government sector (Amphol Jindawathana, 2003; Pijit Kulwanich, 2003; National News Bureau of

Thailand, The Government Public Relations Department, 2008; Churdchoo Ariyasriwatana, 2009: 1-4;)

Dr. Thaweesin witsanuyothin, MD, an expert from the Department of Mental Health revealed that almost all doctors have to work hard to preserve their image perceived by the rest of the world as a hero and it turns out that they do not have time to take care of themselves and their family. Job stress is accumulated unconsciously until it has led to suicide. The number of doctor committed suicide in 2002 was as many as 18 persons and it was probably more than that resulted from incorrect report and concealment. In addition, doctors are among the person having history of use of high dose hypnotic drug especially in those group with low job satisfaction (News, MCOT.Net., 2009).

Although the government supports a policy initiated by the Ministry of Public Health in increasing number of medical students according to the reason given by the Office of The Higher Education Commission and the Ministry of Public Health that number of doctor in Thailand does not match increasing number of population and thus approves on allocating expenditure 30,000 Baht/person/year, totaling 19,000 million Baht, both to increase medical students in traditional medical schools for 6,800 persons during 2004-2013 and to support 6,000 million Baht for the same period to the project for creating doctor for rural area (Ministry of Public Health, 2005b).

The above are probably not sustainable solutions to problems of Thai doctor as they have existed in vicious cycle for such a long time starting from increasing number of medical student, shifting from rural area to

city area, brain drain to private sector or change of career. The main reason is the failure in dealing with job satisfaction and job stress of doctor. Therefore, increase number of doctor cannot guarantee that they will not resign from government sector. This research on "Job Characteristics and Job Stress of Thai Doctors" is hence required to follow systematic approach in order to explore the cause of job stress and level of such stress in doctors all over the country including level of job satisfaction for the benefit of keeping medical personnel of quality in government sector.

1.2 Objective of the Research

The main objectives for this research are as follows:

1) To study prevalence of psychological stress, level of job stress, job satisfaction and job-personal life conflict of Thai physicians as a whole and in each field of practice.

2) To compare work attitude and psychological stress of physicians in government sector with those in private sector and physicians in Bangkok with those in provincial areas.

3) To find the relation between various factors influencing physician's job-personal life conflict, job satisfaction, job stress and psychological stress.

1.3 Scope of the Study

Due to limited time and resources, the researcher classified selected hospitals into 2 groups, public hospital and private hospital and separated the area of

study into Bangkok and provincial area. Data was selectively collected from specialized physicians and general practice physicians by referring to classification made by the Medical Council of Thailand as follows:

1.3.1 Major ward includes:

- 1) Internal Medicine
- 2) Surgery
- 3) Obstetrics-Gynecology
- 4) Pediatrics

1.3.2 Minor ward includes:

- 1) Orthopedics
- 2) Ophthalmology-Otolaryngology
- 3) Psychiatry
- 4) General Practice (GP)
- 5) Other fields (family medicine, rehabilitation medicine, anesthesiology and radiology)

The condition of stress suffered by sample group was evaluated from their current or past 2-3 week status and not including problems in the past.

1.4 Expected Benefits of the Study

1.4.1 The result will encourage government sector to realize problem of Thai medical personnel and to seek for efficient preventive and corrective measures.

1.4.2 The result can be used as a reference for shaping policy on public health and a guideline for personnel development in medical profession in Thailand.

1.4.3 The Results can be used as basic information for the study on illness of medical personnel in Thailand.

CHAPTER 2

LITERATURE REVIEW AND CONCEPTUAL FRAMEWORK

This research focuses on job characteristics of doctor, organisation and policy, job satisfaction, relation at work with colleagues and patients, job-personal life conflict all of which may cause job stress and also examines prevalence of job stress and stress, level of job satisfaction of Thai doctors. The researcher therefore classifies key issues for analysis both on theory and literatures as follows:

2.1 Definition, concepts and theories of stress

2.2 Definition of job stress and related concepts and theories

2.3 Theory and concept of job satisfaction, motivation and organisation commitment

2.4 Concept of job burnout

2.5 Review of related literatures

2.6 Conclusion and conceptual framework

2.7 Operational definition

Sources of data include textbooks, articles, theses in Thai and foreign languages, published and unpublished annual report, interview published in the media, statutory provisions, other material published in journal and on the internet and domestic and research papers published in Thailand and other countries etc.

2.1 Definition, Concepts and Theories of Stress

2.1.1 Definition of Stress

The word "Stress" has its root from Latin word "Stringere" meaning compress or tightened. Stress is a situation we have to experience when we cannot do what people expect us to do, that is, stress is an interrelation process between person and environment. Whether an environment being experienced by a person can be interpreted into stress will depend on the assessment of such person. If he considers that such encountered situation can result in adverse effect upon oneself, it will cause stress but if it is interpreted into positive thing, there will be no stress (Lazarus and Folkman, 1984: 153-181).

In daily life of human being especially the adult one, the upset frequently found is stress or stressful feeling. Stress is considered as emotional or mental illness and also seen as a group of behaviours reacting to threat resulting in general adaptation syndrome. One can feel stress or not will depend on personal feeling as it relates to threatening situation and perception of such person. If one views that he can deal with such situation, there will be no stress but it will be different for those who cannot bear with such situation (Selye, 1965: 85-97; Robinson, 1983: 148-162).

In addition, according to the dictionary of the Royal Institute of Thailand Edition 1982, stress means tension, non-relaxed brain or being engrossed in work. Dorlands Medical Dictionary gives the meaning of stress as a sum of biological reaction caused by adverse stimuli, physical and mental, internal and external, that

tends to disturb the functioning of an organism and if such reaction is not adequate or proper, it may lead to abnormality (The Royal Institute of Thailand, 1999). The Department of Mental Health (2003) defines stress as a state that a person is feeling of being pressured, worried, upset, fear, anxious, and compressed resulting from perception or evaluation of things in one's experience as threat or harm to their mind or body which impair the balance of one's body and mind. Response can be varied such as defense mechanism, physiological, behavioural, conceptual or emotional change, in order to restore balance.

Stress may be divided into 3 phases as follows:

1) Alarm phase: the state of being perceived by one's body and reacting to threat

2) Resistance phase: the state when one's body tries to restore balance.

3) Exhaustion phase: the state when one's body has lost its capacity to resist to such threat and tolerance to the following threat will decrease continuously.

Any person under risk or tending to have stress is more likely to poorly or improperly adapt and then feels upset and frustrated about one's environment. Stress from work or any hiding stress can express in change of behaviour, mental status or even physical reaction and turn out to be physical pathology. Those working under pressure or stress or high competitive environment may enjoy their work and feel of no stress but if they do not have enough time for rest, personal or family life for a long period, it can appear to be physical illness e.g. peptic ulcer, chronic diarrhea, hypertension, migraine

etc (Cooper and Cartwright, 1996: 203-215; Seward, 1997: 124-135; Chandler, 2003; Cooper et al., 2003).

Prof. Dr. Arun Raktham (1995) said that stress is a reaction toward threatening situation which can be expressed mentally, emotionally, physically and behaviourally.

Mentally, How do we accept and treat frustrating event and whether such reaction is reasonable or not will entail our response to the stress and the result.

Emotionally, Our reaction is the reflection of our mental response such as if we fear, reaction to the current situation will depend on individual habit, either constructive or non-constructive one.

Physically, We probably have experience about change in neurological change being capable of affecting our body such as hypertencion, abnormal respiratory system, muscle stress etc.

Behaviourally, When stress occurs, we might react in such a way that the body and mind are alert and work can be done more effectively but it is possible that someone might react in inappropriate way or even hurt oneself or others.

Professor Dr. Pravet Vasi, M.D. (2006: 28-36) said that the cause of stress can be classified into 7 items as follows:

1) Non exercise or retention of adrenalin from non-physical work will produce unbalance of neurological system and stress.

2) The unbalance use of left brain more than right brain for analysing things can also create stress.

3) Routine work will highly associate with loss of job satisfaction and end up with stress.

4) Confrontation with unfamiliar things or new thing or risky situation can result in stress.

5) Hurry or doing things with haste will trigger adrenalin secretion which can cause palpitation, unease and stress.

6) Material, social or psychological pressure can all create stress.

7) Especially, Individual characteristics may differentiate someone who always does thing seriously to be likely to suffer from stress. This includes differences in biological system of each person where those having higher endorphine will normally be likely to have less stress than those having higher adrenalin.

Therefore, stress is an emotional state normally occurring on our basic life. If it were to define the causes of stress, the Department of Mental Health, Ministry of Public Health classifies them into 2 major causes, namely, personal factors and environmental factors.

2.1.2 Personal Factors

Physical cause some physical condition can cause stress called "physical stress" due to the fact that body and mind can relate to each other and be not separable. Physical stress will therefore result in psychological stress. Physical factors causing stress are such as:

1) Body fatigue from hard work for a long time will largely relate to body strength that prompts each individual for daily activity.

2) Nutritional condition which involves consumption behaviour, malnutrition, lack of nutrition or excessive nutrition and also includes certain substances

consumption e.g. alcohol, cigarette, tea, coffee and other addictive substances can all create stress.

3) Inadequate rest will keep our body under fatigue for a long period of time.

4) Physical illness; either acute condition including high fever, accident or chronic diseases e.g. diabetes, cancer or hypertension

5) Abnormal posture or gesture, function of muscle and skin through walking, standing, running, sitting, lying; can all create stress.

Mental cause is seen as major cause and most associated with stress.

1) Personalities tending to cause stress are as follows:

(1) Perfectionist means a person who wants all perfect things in life. This person is characterised as well-organised, diligent and adhering to rules and regulations causing him or her to work hard and to do all thing by him-/herself.

(2) Dependence is a person who loses self-confidence or strength and always thinks that he/she is not good enough to make decision. This type of personality will make such person to be likely to always worry and depend on others and fear of future consequence.

(3) Impulsive is defined as a person who is easily provoked, always lose tempered or is emotionally unstable that may lead to adverse effect to physical balance.

2) Life event means changes having impact on one's normal activity. It can cause either positive or negative impact but requires one to adapt. Negative

impact from such event can trouble one's living, adaptation and lead to stress. Sample of life events leading to stress are such as lost of lover, divorce, separation from lover, serving jail term, lost of family member, injury or illness, marriage and pregnancy, work achievement, migration etc.

3) Conflict is a result of dilemma requiring one to have to choose only one choice from favoured or unfavoured choices or otherwise to choose the unwanted one.

4) Frustration refers to the state that one has to face obstacle and cannot overcome it or pursue the target. The causes of frustration include 4 of the followings:

(1) Some kinds of feeling such as "lost", including lost of lover, reputation or self-esteem, failure in life or any activity, lack of clear life's goal; all of which may cause that person to lose one's hope and feel that thing cannot be controlled.

(2) Delay of event or process to desired target whether caused by nature of such event or external circumstances or intrinsic factors of such person.

(3) Lack of some qualities in such person believed to be necessary for status or dignity of such person such as lack of capacity or skill for assigned work etc.

(4) All kinds of negative mood e.g. fear, anxiety, anger, sadness, mental suffer, unhappiness; these feelings may cause stressful feeling.

2.1.3 Environmental Factors

1) Physical environment including surrounding environment such as temperature, weather and geographic condition, population density, natural disaster etc. all of which have both direct and indirect impact on the way of life and require one to adapt oneself all the time to cope with stress.

2) Biological environment around us including living organism environment can be able to harm us e.g. virus, bacteria, parasite or any other germs.

3) Socio-cultural environment exists by the fact that any person is a member of society and thus all situations occurred in any society and the act done by any person will interact to each other all the time. Socio-cultural factors causing stress are such as:

(1) Social status and role, where each person will have many roles and status such as a parent in one's family, a subordinate in the work place, a child for one's parent or even being a man or woman etc. These direct a person to play different role in different situation and if those roles are extremely in conflict, difficulty in adaptation and stress will be contemplated.

(2) Social norms are those guidelines or rules in doing things accepted by large part of the society as a traditional way or custom. Sometime those rules may not be consistent with one's wish and some restrictive rules may cause stress.

(3) Political and governmental system can affect way of life of people if such is a restrictive one as people will view that their lives are controlled or threatened especially those relating to rights and liberty.

From the overall picture, stress is described as interaction between the two things, person and environment where a person will physically, mentally and behaviorally repond to the stimuli and then one's physical and mental status will be changed as a result of adaptation toward such stimuli or environment with pressure or threat and it will ultimately result in frustration and unhappiness (Lazarus, 1999: 3-13; Cooper, Dewe and O'Driscoll, 2003: 61).

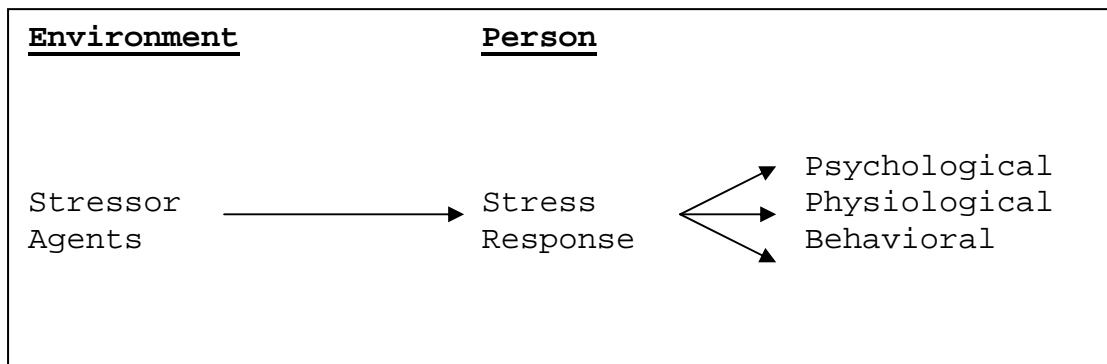


Figure 2.1 Relationship between Stressor Agents and Stress Response

2.1.4 Impact of Stress

Department of Mental Health(2003) explained that when people are facing stress, it will have an impact on oneself and surrounding people as follows:

1) Oneself:

(1) Physical: impaired immunity, gastric diseases, heart diseases, hypertension and cancer

(2) Mental: weariness, disappointment, bad tempered and high anxiety

2) Colleagues: dissociated, bad tempered, blaming others and pessimistic

3) Work: lost of concentration, creativity, burnout, frequent turnover

4) Family: fighting for unreasonable cause, lack of support and divorce, disaffection

2.1.5 Symptoms of Stress

Physical: headache, skin rash, hypertension, palpitation, tachycardia, dyspepsia, dried mouth

Emotional and mental: restlessness, bad dream, anxiety, sadness, burnout, sensitiveness, reluctant, absent-minded, pessimism

Behavioural: heavy drinking or smoking, insomnia, distracted, nail biting

2.2 Definition of Job Stress and Related Concepts and Theories

2.2.1 Definition and Concept of Job Stress

Job stress has been widely focused recently as it has an effect on personnel and organisation and may result in socio-economic impact at national level. Job stress means the sum or response to physical and psychological need toward the work of person. Stress will occur when a person recognise that needs are beyond one's ability to control and worker will reach highest stress when working factors causing stress are beyond the control (Hellriegel, Slocum and Woodman, 2001: 211-225) or it is a self evaluation and recognise that one cannot respond to the demand from one's work and then feel of stress (Cox, Kent and Dalgleish, 1983: 160-172).

In addition, job stress is also a result of interaction of 3 factors, high psychological job demand

but low control or job decision latitude and social support (Karasek, 1998: 322-355). Therefore, job stress will involve a situation where working factors e.g. excessive workload, role confusion and lack of autonomy etc. disturb such worker and cause some change and impair balance of body and mind (Beehr and Newman, 1978: 665-699; Porteous, 1997: 263-281).

Therefore, **job stress** can be defined as emotional state resulted from situation faced by a person under threat or uncertainty and imbalance of necessity to do that job, occupational demand against one's capacity under the situation where error is not allowed and perception and recognition of each individual; all of which will create stress.

2.2.2 Factors Causing Job Stress

Factors causing job stress can be categorized into 2 types, namely, direct factors from work and reinforcing factors (Cartwright, 1987: 203-235; O'Driscoll and Beehr, 1994: 141-155; Cooper et al., 2003: 61).

1) Direct Factors include:

(1) Intrinsic job characteristics include inappropriate working environment such as too much cold or warm, disturbing noise, too much workload, too long or uncertain working hour or risky work etc.

(2) Roles in the organisation include role confusion due to lack of adequate coaching, role conflict e.g. several assignments by different supervisors at the same time and excessive workload without clear priority or greater responsibility from higher work position etc. O'Driscoll and Beehr (1994: 141-155) summarised the framework of relationship between Role Variables and

Uncertainty with psychological strain and turnover intentions as follows:

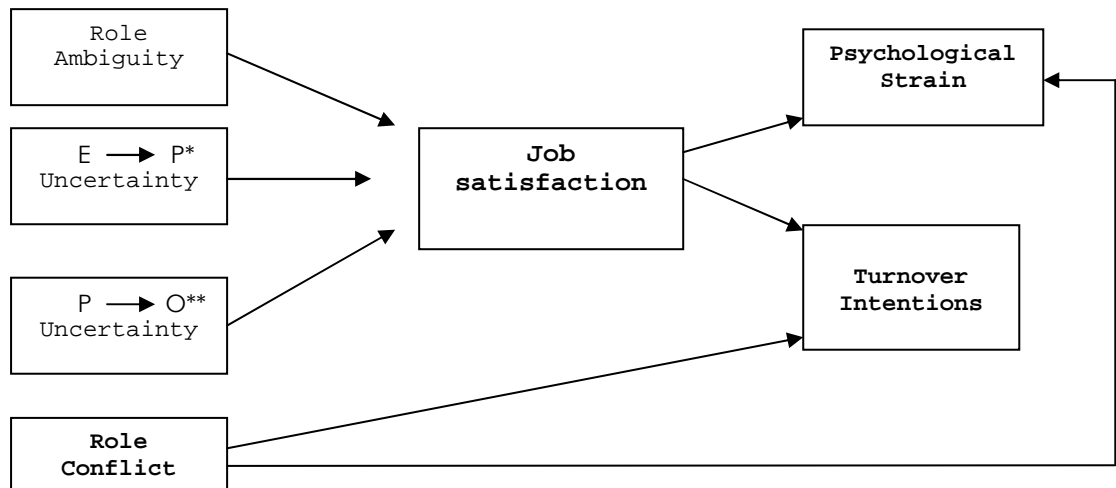


Figure 2.2 Role Variables and Uncertainty with Psychological Strain and Turnover Intentions

Note: *Effort-to-performance expectancy

** Performance-to-outcome expectancy

(3) Relationships at work e.g. working atmosphere, mutual or competitive environment, taking advantage; can create distrust and stress.

(4) Career development issues e.g. lack of support from supervisor under proper situation, taking position without preparedness, job insecurity from downsizing policy etc.

(5) Organisational factors e.g. redundancy of rules and regulations, lack of participation can result in loss of confidence and spirit in work and stress.

2) Reinforcing Factors:

(1) Individual personality

(2) Level of anxiety and tolerance against stress

(3) Family trouble: including home-work interface.

(4) Socio-economic problems e.g. terrorism, loneliness, competition, adaptation to new society, crowded habitation etc.

(5) Critical problems in life e.g. lost of beloved one, divorce etc.

If the overall picture is considered including surrounding objects of human being from birth till working age, human being can be suffered from stress resulted from various elements that are (Brandt and Nielson, 1992: 302-311; Johnson and Stewart, 1993: 21-28; Arun Raktham, 1995):

(1) Biological elements namely genetic and physiological property e.g. brain and biochemistry of brain

(2) Mental and emotional elements and mental development e.g. rearing, individual behaviour and personality, relationship between parent and child etc.

(3) Socio-cultural elements for instance drug problems, struggling society, economic problems and unemployment and terrorism etc.

(4) Learning elements rooted from 3 learning theories, classical conditioning, operant conditioning and modeling or imitation such as impression from bombing at some place and visiting such place again will cause stress etc.

(5) Environmental elements, both physical and mental such as extreme weather, noise, toxic substances in the air, epidemic and politics

(6) Change elements e.g. relationship change, change of environment, status and other such as organisational culture change, divorce etc.

As stress tends to cause range of adverse effects and if any organisation has paid inadequate attention to the sign of such stress such as heavy smoking, heavy drinking, boredom, frustration, frequent sick leave or leave for necessary business, increasing rate of resignation etc., it may be viewed that such organisation has allowed stress to accumulate without any counter measures and is exposed to considerable negative consequences.

2.2.3 Preferred Model used for Explaining Job Stress

Person-environment fit model is a model designed to describe relation between person and working environment developed by Harrison (1978, quoted in Seward, 1997). This model reflects assessment of human value which can be concrete or abstract in nature against environment to the same extent as to how well such person can adapt among the demands from physical environment and psychosocial environment under certain ability or potential.

This model explains stress occurred from impropportionate perception between human and environment e.g. a worker is expected by the factory to produce output at 40 item/hour (objective environment) but a worker thinks that the factory demand him/her to produce at the rate of 50 item/hour (subjective environment) while such worker him-/herself can actually produce at only 40 item/hour (subjective individual). This means that a worker thinks that he/she can produce lower than

the target for 10 items and thus look at oneself as incapable to work which will lead to job stress.

Cooper (1987: 240-287) and Davidson, Lambert, Goldacre and Parkhouse (2002: 685-686) developed model of job stress to explain that the study on cause of stress will cover range of aspects stress from works, family, society and individual factors and these causes may be related to one another such as family cause and social cause of stress may have a impact on working place.

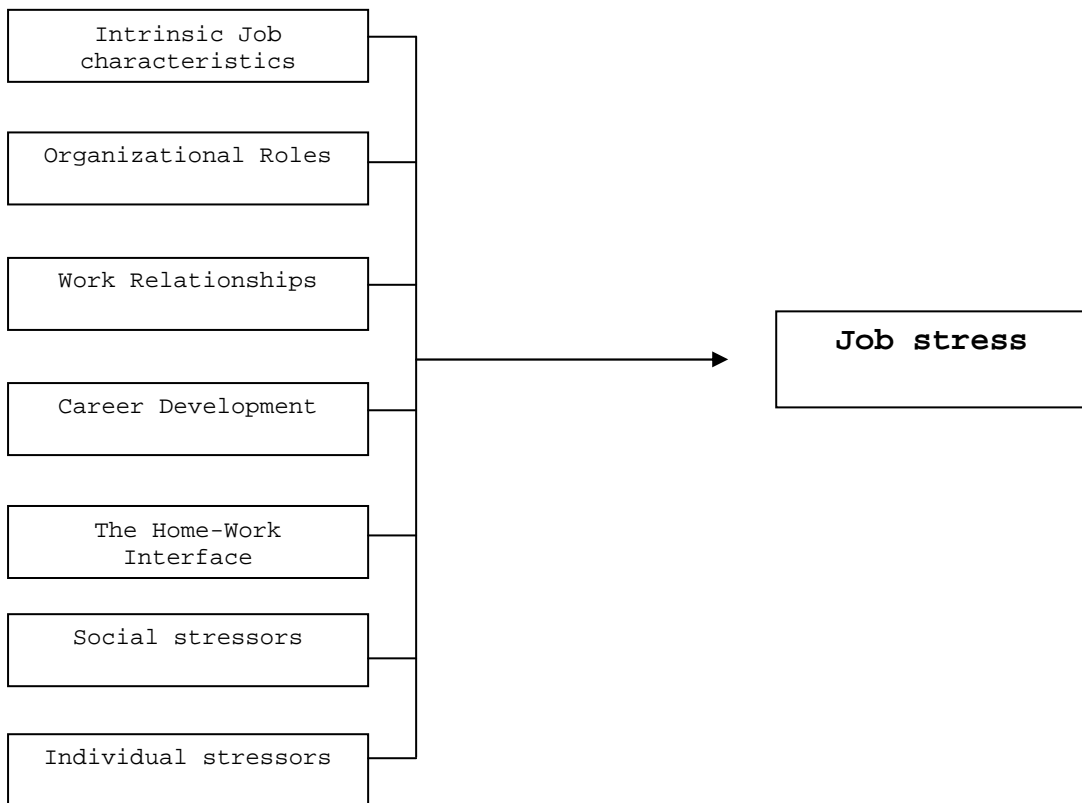


Figure 2.3 Cooper's Six Primary Work-Related Stressors

Causes of social stress include being new to the place, weather, foods or frequent migration, long driving to work, living in urban or rural area etc. Causes of individual stress are such as genetic, personal history and factors e.g. age, gender, education, religion,

nationality etc. Significant event in life e.g. lost of beloved one, illness, pregnancy, job resignation, newly recruited etc. as well as individual mechanism for dealing with stress and personality e.g. aggressive, adventurous or sympathetic type etc.

2.3 Theory and Concept of Job Satisfaction, Motivation and Organisation Commitment

2.3.1 Job Satisfaction

Job satisfaction is not a new phrase and has actually originated for more than half a century since 1955 where Morse stated that "job satisfaction" is everything that can relieve stress of operator. Such would include various environmental factors e.g. income, bonus or reward, capacity acknowledgement, friendship between colleagues and supervisor, fairness, happiness from the job etc. Job satisfaction refers to general attitude a person has toward the job which can be positive or negative and it is certain that each person will have different attitude although all are doing the same job.

Job satisfaction is an attitude, emotion or feeling of a person toward the job that can have significant impact on working behaviour where a person with job satisfaction will be favoured by current job (Jewell, 1998: 211). Such involves attitude to work, supervisor, colleagues and working environment (Yongyut Preerapongpipat, 1995:10).

There are 3 approaches for studying job satisfaction (Jewell, 1998: 212-217). The first approach places emphasis on overall job satisfaction and view that job

satisfaction is the overall concept reflecting like or dislike of a person toward the job. It is an internal mental state or emotion. The second approach focuses on specific aspect of works and views that job satisfaction is a concept being able to be differentiated into certain independent aspects. The third approach views that job satisfaction is an act done to respond to one's demands.

There are many notions and theories related to job satisfaction. The widely recognised one is The Job Characteristics Model of Hackman and Oldham (1976, 1978) explaining job satisfaction of 5 categories of work:

- 1) Multi skills work
- 2) Self-completed work
- 3) Perceived significant work
- 4) Work with autonomy and
- 5) Work with feedback as to advantages and point of improvement

Such job characteristics can lead to 3 mental states including realisation of meaningful work, recognition of accountability and awareness of one's act and these states will further lead to job satisfaction as shown in figure 2.4 below:

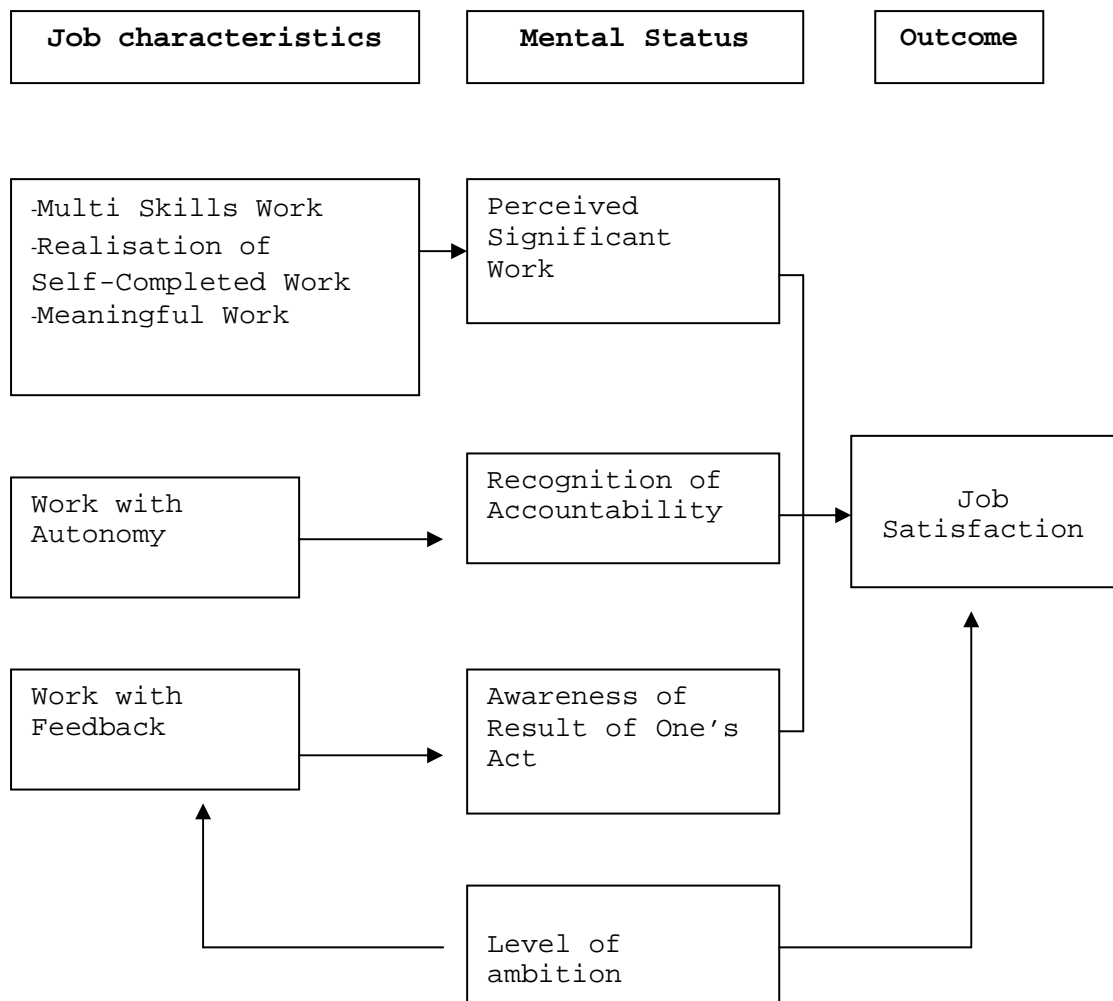


Figure 2.4 Model of Job Satisfaction

Source: Adapted from Hackman and Oldham, 1976.

The phrase "job satisfaction" and "job attitude" can be used alternately as each has similar meaning. Both positive and negative attitude toward the job are individual feelings. Job satisfaction has broad meaning which includes physical environment in the workplace, body and mind (Vroom, 1964: 320-349; Smith, 1965: 236-251).

If internal factors of an organisation are to be taken into account, job satisfaction means attitudes resulting from work and surrounding factors of work e.g.

wages, status, opportunity, career path, fair treatment by supervisor, workload appropriateness, colleagues, promotion and expectation for compensation etc. (Blum and Naylor, 1968: 265-293; Strauss and Sayles, 1980: 307-341).

In general, measuring of job satisfaction will be done by questionnaire. One of the most favourite questionnaire is The Job Satisfaction Survey (JSS) developed by Spector (1985: 693-713) measuring job satisfaction for 9 factors each of which having 4 questions, totalling 36 questions. The respondent will be asked to answer agree/not agree to the question about job nature. Another one is The Job Descriptive Index (JDI) developed by Smith, Kendal and Hulin (1969: 144-182). This questionnaire will evaluate 5 factors of satisfaction where each of which will be provided with 9-18 questions with 3 choices for answer, yes, not sure and no. The Minnesota Satisfaction Questionnaire (MSQ) is divided into 2 versions, the short one with 20 questions and the long one with 100 questions. The last one has only 3 questions with 7 measuring scales ranging from completely disagree to completely agree, called Michigan Organisational Assessment Questionnaire Subscale (MOAQ) developed by Cammann, Fichman, Jenkins and Klesh, 1979: 274-298) etc.

Job satisfaction relates to behavioural pattern (Bagozzi and Warshaw, 1992: 601) including willing to resign from work and turnover (Tett and Meyer, 1993: 259-293), job burnout (Lee and Ashforth, 1996: 123-133), good membership of an organisation, organisation commitment and output (MacKenzie, Podsakoff, and Ahearne, 1998: 87-98; Ellingson, Gruys and Sackett, 1998: 913-921).

Therefore it can be seen that "job satisfaction" is defined in quite a similar way by the scholars. In short, job satisfaction mainly involves attitude and job demand by taking into account surrounding environment and motivation given by such organisation to its staff including job characteristics, workload appropriateness, compensation, control, friendship at work, working condition and career path etc. If such factors can meet individual demands, such staff will be satisfied and have good attitude toward the job. On the contrary, if those factors can not respond to one's demand, it may result in negative consequence to the work of such person and to an organisation at the end and lead to failure of an organisation to pursue its goal (Garza, 1998).

2.3.2 Motivation Theory

In view of human resource management, it is one of the most important components in implementing activities in an organisation whether it is a large or small one. Personnel plays a critical role in success or failure of any organisation involved by various factors such as human resource management, job satisfaction and motives; in order to urge member of such organisation to join in pursuing organisation's goal. If any organisation has skilled or talent personnel with high level of job satisfaction, it can expect positive effect on its operation and it also indicate a sign of high performance and leadership of the executive and as a result, can enjoy its success at the end of the day (Starkweather, 1998; Perez and Fleury, 2009: 15-20).

Each person has different motivation both positive and negative one. Someone merely works for basic living

things while the other may wish for reputation, power or just love to do it. Maslow said that all human have 2 kinds of need 1) Deficiency Needs and 2) Growth Needs. The first one consists of basic need or physical need e.g. four requisites, ownership and acknowledgement. The second one includes self-actualization where at this stage; all human will be happy in their work with job satisfaction and want to further complete their lives. It can be said that whether one will be satisfied with the job it will partly depend on behaviour and personal requirement (Bennis, 1998: 156-203; Garza, 1998; Zimmer, 2004).

Job satisfaction will depend on multiple factors, internally and externally as explained by the theory of Frederick Herzberg or Herzberg's Two-Factor Theory (Motivation-Hygiene Theory) which was developed since 1960 and has been applied until now. At the early stage, Frederick Herzberg, a psychologist and others, performed an interview with engineers and accountants totalling around 200 persons from 11 factories in Pitsberg, USA. The objective was for the industrial benefit and expected for how to find the approach for increasing productivity, decreasing absence and building good relationship at works for the benefit of all.

Herzberg concluded that various factors directly relate to good or bad feeling. Thos factors can be classified into 2 groups as follows:

- 1) Maintenance or Hygiene Factors or Extrinsic Factors or Dissatisfier Factors will preclude one from satisfaction. Therefore, these factors are needed to be maintained at proper level. They include organisation policy, control, interpersonal relation, working

condition, salary, compensation and job security. In other words, these are supportive factors for any person to decide to continue one's job. These factors are necessary to the extent that biological drive or basic needs of person can be met. Although such drive and needs have been fulfilled, a person will not be really satisfied and seek for second group of factors.

2) Motivation Factors or Intrinsic Factors or Job Content or Satisfiers will be a stimuli the operator to work under satisfaction to increase productivity. These include work success, accountability, acknowledgement and admiration, job characteristics and progress. Therefore if a person has adequate satisfaction factors, it will create motivation for work (Garza,1998; Lamotta, 2002).

In addition, if we view that human has an individual character, good and bad aspect, it is important to refer to the theory of Douglas McGregor (1960) who applied the notion of Maslow to explain approach for building motivation among workers. McGregor described that there is 2 methods for motivate workers, Traditional method or X theory and Human Relations method or Y theory. X theory sees that human is lack of ambition, lazy, selfish, resistant to change and not wise and thus requires an organisation to closely control and adapt their behaviour to respond to organisation's requirements.

On the contrary, Y theory views that naturally, human is not inert or resist an organisation's requirements but rather has good basic nature and an organisation is required to support its personnel to express or exert their good qualities and make demands of workers to be the same thing with organisation's goal.

X theory can respond physical needs, security and social needs of workers while in order to respond prominent role or social recognition and self actualisation, it is necessary to adopt Y theory (Bennis, 1998: 267-290; Garza,1998).

Other more important thing in creating satisfaction for staff is realise human nature that one will have hope and assess possibility of consequences before taking action following one's wish. Vroom proposed Expectancy Theory, an approach for creating motivation which predicts that a person will join activity he/she expects that he/she will get reward or thing as wished. Vroom introduced the word 'valence' to refer to the desire to do such thing and if desire outweigh undesired, valence value will be positive and if one feel none of any particular feeling, valence value will be zero.

$$\text{Motivational Force} = \text{Valence} \times \text{Expectancy}$$

From the above formula, Vroom indicated that operation of any individual will be directly affected by what one expects to occur to him/her which may be reward or punishment. Therefore, in order to understand motivation, it is necessary to realise perception of an individual as to whether such thing is worth doing as each operator has one's own motivation and demand for behavioural mechanism (Bennis, 1998: 267-290).

From the above theories and notion about job satisfaction and motivation e.g. Motivation Theory of Maslow, Two-Factors Theory of Herzberg, X Theory Y Theory of Mc Gregor and Expectation Theory of Vroom, we can notice that each theory has its own point of emphasis

e.g. Motivation Theory of Maslow will focus on personal needs where the Two-Factors Theory of Herzberg is similar to Maslow's to the extent that human has different personal needs but it does not make them in layers or levels as the same as Maslow's but rather into factors causing job satisfaction and dissatisfaction. Herzberg underlined the significance of factors causing job satisfaction as a motivation encouraging employee to continue to work in an organisation.

According to **X theory Y theory** of Mc Gregor, it views that a person is a component or factor in work or production. For **X theory**, a person will be controlled by organisation and encouraged or motivated by monetary incentives and other benefits and threatened by punishment. For **Y theory**, it will focus on cooperation or blending of personal goal with organisation goal for the success of both of them. The Expectation Theory considers value of reward and realisation of effort to get such reward for the purpose of encouraging a person to use such effort.

2.3.3 Concepts and Theories of Organisation

Commitment

Organisation commitment is a binding relationship and unity among members of organisation (Steers, 1977: 46-56) which reflects 1) strong confidence and acceptance of organisation's goal 2) expectation of effort for the benefit of an organisation 3) vigorous desire to maintain good membership (Porter, Steers and Boulian, 1974: 604). Organisation commitment is also a factor differentiating those who stay with or leave from an organisation. The former has 3 reasons to continue staying with an

organisation: affective commitment, continuance commitment and normative commitment (Meyer, Allen and Smith, 1993: 539). A person with organisation commitment will look at one's own organisation in positive way and be willing to work to meet the goal of such organisation.

Steers (1977: 46-56) found that, as shown in Figure 3, the significant things leading one to have organisation commitment will comprise: 1) personal characteristics including job tenure and difference in ambition e.g. success in life 2) job nature e.g. meaning of work and chance of establishing relationship with colleagues 3) job experience e.g. reliability of an organisation, attitude of other staffs toward an organisation. The results of organisation commitment were also proposed such as more attention by employee, work commitment, more effort to work and decreasing turnover of personnel as demonstrated in Figure 2.5:

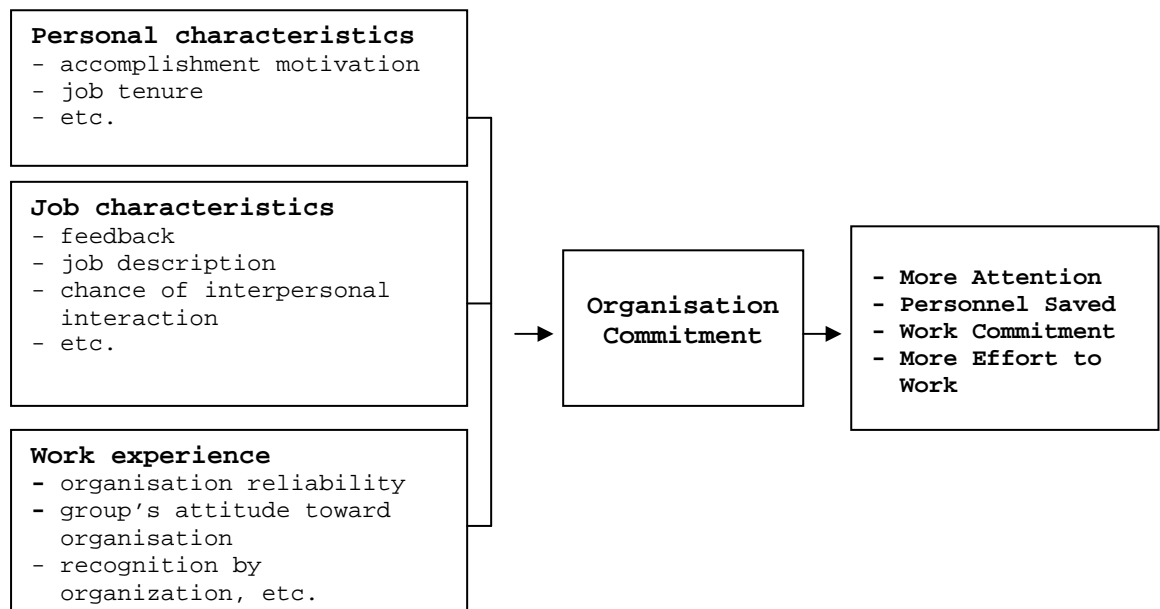


Figure 2.5 Model of Organisation Commitment

Source: Adapted from Steers, 1977: 46-56.

In order to measure organisation commitment, questionnaire is a favourite tool. The significant one is commitment questionnaire developed by Porter and et.al. (1974: 603-609) which differentiates 3 aspects of organisation commitment, namely, target acceptance, willingness and desiration on preserving organisation. Its scale is set in 5 levels. Another popular questionnaire is the one developed by Meyer, Allen and Smith (1993: 538-551) evaluating commitment on 3 aspects including feeling, continuance and norm and consisting of 19 questions, 6 for feeling, 5 for continuance and 6 for norms. It has 6 levels of scale ranging from absolutely untrue (1) to absolutely true (6).

Mathieu and Zajac (1990: 171-194) analysed the causes and consequences of organisation commitment by differentiating factors following the model developed by Steers (1977: 46-56) and found that:

- 1) Factor of personal characteristics including age, gender, job tenure and salary relates to organisation commitment.

- 2) Factor of job characteristics influencing organisation commitment including job challenge, scope of work, job variety, role conflict and ambiguity and role of excessive workload.

- 3) Leadership also relates to organisation commitment in terms of communication and participation in management.

- 4) Organisation attributes i.e. organisation size and centralisation will also correlate organisation commitment.

- 5) Job satisfaction and professional ties show positive influence to organisation commitment.

6) Any staff having organisation commitment will be less likely to resign from such organisation and produce high performance.

2.4 Concept of Job Burnout

Human resource has always been one of the most significant management resources and although advance technology has been intensively introduced to the operation, it cannot yet be totally replaced. All organisations recognise the importance of human resource management as we can see that many strategies have been implemented to seek for appropriate person for each organisation as well as how to maximise capacity and to keep their personnel with them as long as possible.

In respect of human resource management, although how well any organisations have followed management procedures, many of them still face certain problems in human resource management including discharge, retirement and turnover. The first two issues are normal but the last one, turnover, is considered as an abnormal resignation (unavoidable) causing loss of well-trained personnel and leading to cost for recruitment, selection, training and development a new staff saved for work discontinuance and loss of productivity and service capacity etc.

2.4.1 Concept of Job Burnout

With respect to human resource management, in addition to creating motivation and job satisfaction and despite of adherence to management procedures, many organisations still face with one of the most significant

issue in human resource management, that is, the turnover which is mainly resulted from job burnout.

Freudenberger (1980), an American psychiatrist, was the first person who defined job burnout according to the observation made by him and his colleagues. It is a state of being discouraged or frustrated toward the work as it cannot produce desired output as expected. However, the definition which has been most recognised is the one given by Maslach and Jackson (1981: 99-113) who defined job burnout into 3 components as follows:

1st Component it means emotional exhaustion manifesting by loss of spirit and motivation in one's work due to excessive fatigue and resulting in avoidance of seeing other person, coming to work late, absence, low performance or resigning from work at the end.

2nd Component it involves depersonalisation meaning looking at other person seeking for service as material and thus interacting with rigid manner, loss of willing to provide service, having negative attitude to colleagues; which will then cause negative reaction by service recipient. Such symptoms are such as looking down upon other persons or neglecting request of service recipient or providing services impolitely. Depersonalisation can also cause the feeling of disassociation.

Last Component is the lack of personal accomplishment. Such person may view that he/she has decreasing capacity and has no future in his/her career with negative attitude or reaction against service recipient. One may feel of incompetence in interpersonal relation, of failure and lose self-respect. This can lead to depression and seeking for new job and resignation.

The above 3 components occur along the 4 processes of burnout as demonstrated in figure 2.6 as follows:

1st process; Maslach and Jackson (1981: 99-113) said that when the operators have been facing stress and pressure for a long time, they will have emotional exhaustion for work and less response to work. They will try to detach themselves from work and service recipient following by depersonalisation. When the operators find that they cannot achieve what they expect such as to cure patient or to contribute to the society or the nation, such depersonalisation will be triggered.

2nd process; Lee and Ashforth (1993a: 388) found that emotional exhaustion and depersonalisation does not correlate with the feeling of lack of personal accomplishment.

3rd process; Leiter (1988: 111-128, 1991: 123-144) Lee and Ashforth (1993b: 369-398) proposed that emotional exhaustion can result in depersonalisation but the feeling of lack of accomplishment is not the result of other components and for the last process; Golembiewski and Munzenrider (1988: 369-388) said that depersonalisation is the precedent component causing the feeling of lack of personal accomplishment and then emotional exhaustion.

1st process

Emotional exhaustion → Depersonalisation → Lack of
personal accomplishment

2nd process

Emotional exhaustion → Depersonalisation
↓
Lack of personal accomplishment

3rd process

Emotional exhaustion → Depersonalisation
Lack of personal accomplishment occurs independently.

4th process

Depersonalisation → Lack of personal accomplishment →
Emotional exhaustion

Figure 2.6 Processes of Job Burnout

Job burnout can be measured by various methods such as questionnaire or interview etc. The most popular ones are a questionnaire with multiple questions, Maslach Burnout Inventory (MBI) developed by Maslach, Jackson and Leiter (1996: 247-285) consisting of 22 questions designed to investigate emotional exhaustion for 9 questions, depersonalisation for 5 questions and feeling of lack of personal accomplishment for 8 questions and Burnout Measure (BM) developed by Schaufeli, Enzman and Girault (1993) measuring on one dimension with Likert scale consisting of 21 questions offering 7 choices each ranging from 1 (never) to 7 (always)

Having considered the cause of job burnout under the model of Leiter (1988: 111-128) by examining causal relationship sort by 3 components as shown in figure 2.7, it appeared that:

1) Emotional exhaustion component is a result of interpersonal conflict, excessive workload, problem solution method, skill usage and routine nature of work

2) Depersonalisation component is mainly resulted from job burnout, support from supervisor and colleagues.

3) Lack of personal accomplishment component is a result of working autonomy, support from supervisor and colleagues, problem solution method, skill usage and cooperation from service recipient.

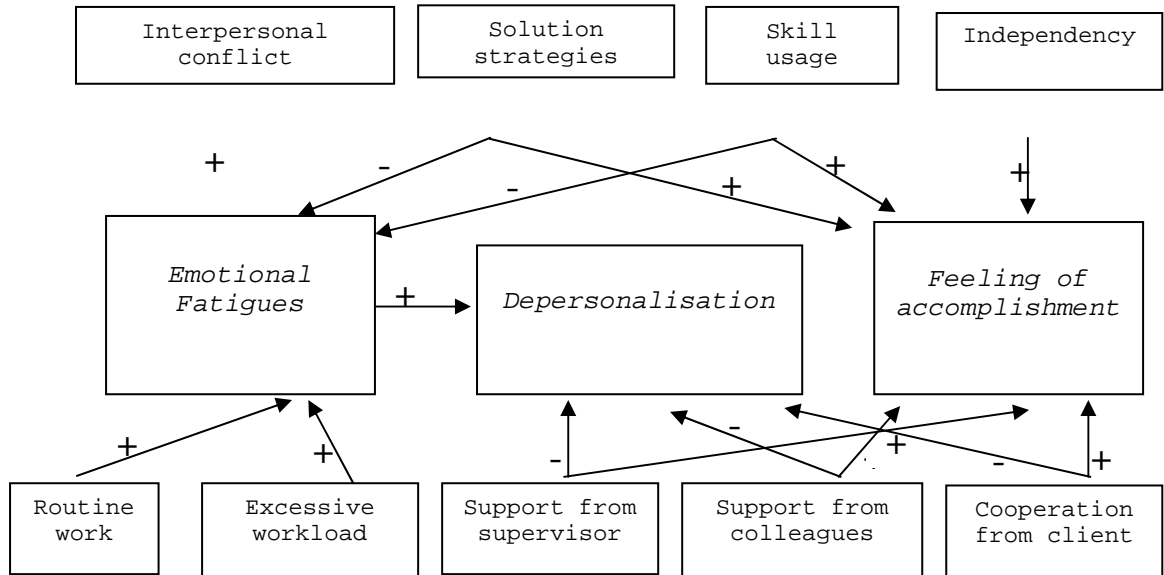


Figure 2.7 Model of Job Burnout

Note: +/- Represents direction of relation.

2.4.2 Causes of Job Burnout

They can be categorised into 5 groups (Sanguan Luakrietbandit, 1999: 168-178):

1) Job Stressors

(1) Pattern of relationship between service provider and service recipient and excessive workload, that is, the result of direct interaction with numerous service recipients which has occurred repeatedly and frequently during work.

(2) Role conflict and role ambiguity: role conflict means conflict of expectations by people from the operator or role actor while ambiguity occurs when the operator has inadequate information about one's role or scope of work.

2) Reinforcement means giving reinforcement or reward or other punishment by adhering to performance and ability.

3) Job characteristics mean skill utilisation at work, autonomy, job variety and routine nature of work.

4) Social support includes supports from an organisation, supervisor and colleagues.

5) Personal expectation, gender, career path, age, marital status, Personal characteristics, self efficacy and coping method.

2.4.3 Impact from Job Burnout

1) Physical and mental impacts: fatigue, insomnia, backache, headache and abnormality of alimentary system etc. Burnout also relates mental health problem e.g. loss of self respect, depression, restlessness and anxiety (Kahill, 1988: 284-297).

2) Relation impact: with family member and friends (Maslach and Jackson, 1984: 133-154)

3) Attitude impact: negative attitude toward service recipient, job, oneself and general aspect of life (Kahill, 1988: 284-297).

4) Behavioural impact: job dissatisfaction, low level of organisation commitment (Maslach and Leiter, 1997: 263-284), frequent absence (Parker and Kulick, 1995: 581-599), low performance (Maslach and Jackson, 1984: 133-154) and turnover (Leiter, Harvie and Frizzel, 1998: 1161-1167).

From the synthesis of factors of job burnout, job satisfaction and organisation commitment; it indicates that all variables correlate with willing to resign and turnover. Therefore, with respect to the analysis of causal relation with willing to resign and turnover, it is necessary to consider the abovementioned 3 factors.

Factors influencing job burnout, job satisfaction and organisation commitment are somewhat relative to one another.

1) Factor of attitude to the job of employee can lead to willing to resign and turnover such as job burnout, job satisfaction and organisation commitment.

2) Factor of job characteristics includes variety/routine of work, work of skill and knowledge, challenging work, scope of work, self-completed work, perceived significant work, work with autonomy and work with feedback.

3) Factor of role includes role with workload, role conflict and ambiguity.

4) Factor of organisation includes role obviousness, career path, feedback, support, formalisation,

centralisation, role conflict, interpersonal conflict, decision making, leader, communication, compensation and welfare, fairness and pressure.

5) Factor of expectation and trust e.g. individual expectation, self confidence in one's ability, strategies for solving problems

6) Factor of personal characteristics comprises age, gender, marital status, educational level and job position experience.

In short, from the above concepts and theories, job stress, job satisfaction, motivation, organisation commitment and job burnout and turnover all inevitably relate to stress resulted from workload, responsibility, working environment, role ambiguity & conflict, compensation, job security, relation at work between supervisor and subordinates or between colleagues. These are indicator of the performance of each individual and organisation. The operator's requirement has to be responded internally and externally to attain efficient work, reduce job stress and turnover (Vandenberg, 1998; Starkweather, 1998; Herzberg, 2008) which can be summarised as shown in Figure 2.8 below:

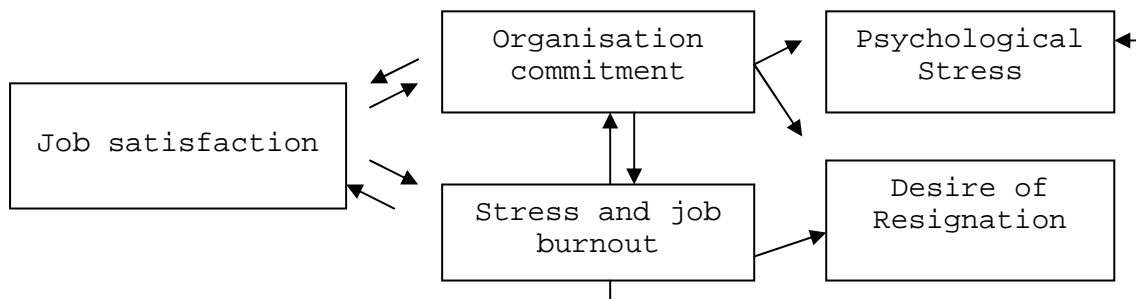


Figure 2.8 Relation of Job Stress, Job Satisfaction, Job Burnout, Organisation Commitment and Resignation

2.5 Review of Related Literatures

Job stress has given rise to adverse impact upon health of population and economic of each country to the greatest extent for the past three decades (Cooper, 1998: 71-84; Perrewe and Ganster, 2002; Landsbergis, 2003: 61-72; Jian, Wenjie, and Sung-il, 2005: 1066-1077). Most literatures about job stress in doctors have been continually studied only in western countries and the US while there are not many studies on this matters in Asia only in Korea (Jhun, Cho, and Park, 2004: 363-367; Chang et al., 2005: 25-37), Taiwan (Cheng, Guo, and Yeh, 2001: 495-504), Japan (A. Tsutsumi, Kayaba, K. Tsutsumi and Igarashi, 2001: 367-373; Irie, Tsutsumi, Shioji, and Kobayashi, 2004: 409-417) and China (Xin, Gu and Gao, 2001: 1110-2; Xu et al., 2004: 31-46). Number of papers about job stress is still limited.

Age and gender are sociodemographic factors correlated to job stress, job satisfaction, anxiety and job burnout of doctors (Matt and Dean, 1993: 187-200; Mirowsky, 1996: 362-380; Firth-Cozens, 1998: 1647-51; Schattner and Coman, 1998: 133-137; Kushnir, Cohen and Kitai, 2000: 430-436; Barnes_Farrell, Rumery and Swody, 2002: 87-98; Davidson, Lambert, Goldacre and Parkhouse, 2002: 685-686; Grembowski et al., 2003: 383-393; Sobreques et al., 2003: 227-233; Vanagas, Axelsson and Vanagiene, 2004: 1014-18) where age and work load work together in increasing considerable risk of stress among doctors (Stirling, Wilson and McConnachie, 2001: 456-460).

From the study, it reveals that doctors being 40 years of age or above show two times higher degree of job

burnout and job stress than those of young staffs. This stress will increase until the age of retirement for both genders (Mirowsky, 1996: 362-380; Sobreques et al., 2003: 227-233). Conversely, some studies support that young staffs may have higher degree of job stress than that of senior doctors as the former does not hold absolute discretion and has limited experiences as well as communication skill with patient especially when number of patient is excessive, job stress will increase accordingly (Mirowsky, 1996: 362-380; Firth-Cozens, 1998: 1647-51; Vanagas, Bihari-Axelsson and Vanagiene, 2004: 1014-1018).

According to the study of Vanagas (2005) done by collecting data from 197 doctors in Lithuania and applying questionnaire developed from the notion of Karasek, Reeder and Quality of Life Scales, it indicates that senior doctors will be the group of doctor having lowest degree of job stress. Critical factors of stress include job decision latitude and job demands.

Job stress can affect male and female differently according to many studies about overall job stress which found that female will face job stress in workplace more than male (Richardson and Burke, 1991: 1179-1187; Lewis, Barnhart, Howard, Carson and Nace, 1993: 62-67; Wall et al., 1997: 519) especially on the matter of "career path", "promotion", "job security" and "lower job control". In addition, there are conflicts about career and traditional gender role which tends to favour male and allow them to have better career path than female. This has caused female to have frustration and stress to a higher degree than male (Bowman and Alen, 1985: 302-331; Cartwright, 1987: 203-235; Matthews, Hertzman, Ostry

and Power, 1998: 1417-1424; Vermeulen and Mustard, 2000: 428-440; Bildt and Michelsen, 2002: 252-258; Nelson and Burke, 2002: 275-292; Peter, Siegrist, Hallqvist, Reuterwall, Theorell and SHEEP Study Group, 2002: 294-300; Bond, Punnett, Pyle, Cazeca, and Cooperman, 2004: 28-45).

Further, relation with female colleagues and high self esteem has led to problems in team working. Imbalance of time for work and family and family matters are more likely to affect works of married female doctors as it causes anxiety and may force certain amount of doctors to face with depression (Cooper, Rout, and Faragher, 1989: 366-370; Winefield and Anstey, 1991: 140-4; Mirowsky, 1996: 362-380; Williams, Barefoot, Blumenthal, and Helms, 1997: 543-548; Mesler and Capobianco, 2001: 13; Wilhelmsson, Foldevi, Akerlind and Faresjo, 2002: 74-84).

On the contrary, there are many studies asserting that male has higher degree of job stress than that of female (Cooper, Rout, and Faragher, 1989: 366-370; Dua, 1997: 97-102), that is, male has more workload and conflict in workplace than female saved for the ambition and responsibility resulted from higher social expectation on gender role; key factors creating job stress (Karasek, 1998: 322-355; Nelson and Burke, 2002: 275-292; Siegrist, 2004: 1483-1499). And if it also involves unfairness in an organisation, male tends to have more stress than female especially on unfair workload and power and duty in decision making (Sutinen, Kivimaki, Elovainio and Virtanen, 2002: 209-214).

Under highly competitive economic environment, higher cost of living, daily emergence of new technology

and dramatic change in working system of this globalization age, reward has been a critical factor for our today living. Either male or female gives priority to it and pays a lot of attention to how to increase salary and income. In respect of the study on job stress, DCS Model (Demand-Control-Support) and ERI Model (Effort-Reward imbalance) are the two favorite models for testing relation between gender and job stress. The studies show that ERI can give accurate prediction on health impact on workmen and indicate that either male or female indifferently has expectation on income and compensation.

Furthermore, job stress and remuneration can cause health problem and hinder work achievement for both male and female which may lead to physical and mental disease and deteriorate quality of life (Kivimaki, Elovainio and Vahtera, 2000: 656-60; Calnan, Wainwright, Forsythe, Wall and Almond, 2001: 499-507; Pikhart, 2001: 55-120; Peter et al., 2002: 294-300; Li, Yang and Cho, 2005: 1066-1077).

With respect to gender and job satisfaction in developed countries such as Canada and Switzerland etc., it is found that there is no difference between gender toward job satisfaction where both male and female doctors have satisfaction on interpersonal relation with their colleagues and patients, on management in an organisation regarding facilities, income security and professional standard. These are among significant factors for high degree of job satisfaction (Richardson and Burke, 1991: 1179-1187; Bovier and Perneger, 2003: 299-305). The Medical Association of USA conducted research on a sample group of 2,000 doctors all over the country in 2004 and found that female doctors had more

job satisfaction than that of male doctor and female doctor can also better balance between job and family life with less working hours (female = 54 hours/week, male = 59 hours/week). Female doctor also showed higher emotional flexibility and patience. (Keeton, Fenner, Johnson and Hayward, 2007: 949-954).

In Asian country like China, Jian Li, Wenjee Yang and Sung-il Cho (2005: 1066-1077) studied on the difference between genders toward job stress which could affect doctor's health and job satisfaction in China by randomly selecting sample of 256 male doctors and 266 female doctors. The study results were different from most of the studies done in western countries, that is, female doctors could earn more "remuneration" than male doctors and also had better job security. In Taiwan, on the contrary, there was no significant difference between genders on "remuneration" (Tseng and Cheng, 2002: 420-432).

Job satisfaction, Zuger (2004: 69-75) stated in "New England Journal of Medicine" that irrespective of empirical or anecdotal studies, it has been widely recognized that "job satisfaction" of doctors are constantly being decreased. This is a critical thing as "job satisfaction" will involve level of stress and burnout of doctors which may bring about the decrease of efficacy of public health personnel and patient care quality, conflict between patient and doctor and doctor suing, job stress, depression and resignation at the end (Dimatteo et al., 1993: 93-102; Kerr et al., 1997: 278; Kassirer, 1998: 1543; Konrad et al., 1999: 1174-1182; Haas et al., 2000: 122-158; Epstein, 2000: 517; Linzer et al., 2000: 441-450; Edwards, Kornackl and Silversin,

2002: 835-838; Visser, Smets, Oort and Haes, 2003: 271-275).

The studies on "Stress of Doctor" in the past focused on "job characteristics and current working condition" influencing on "job satisfaction" of doctor (Bovier and Perneger, 2003: 299-305).

For instance, organisational policy and factors including availability of medical devices play a key role in supporting the doctor to achieve one's working target (Nirel, Shirom, and Ismail, 2004: 779-84; Maslach, Schaufeli and Leiter, 2001: 397-422; Goehring, Bouvier, Künzi and Bovier, 2005: 101-8). The Dutch researchers, Visser et al. (2003: 271-275) collected data from 2400 doctors nationwide to explore their job satisfaction and burnout and found that organisation policy on equal job assignment and well-equipped facilities could reduce job stress and increase job satisfaction.

In addition, this is the same for doctor's autonomy or on the other hands, the condition that doctor can freely manipulate and screen patients and their numbers, fix working hours and design treatment procedures including patient refer by himself (Baker and Cantor, 1993: 258-270; Kassirer, 1998: 1543-1545; Barr, 1995: 353-356; Epstein, 2000: 517; Linzer et al., 2000: 441-450; Edwards, Kornackl and Silversin, 2002: 835-838; Poussette and Hanse, 2002: 229-250). From the study on 608 doctors in Ohio, USA by sending questionnaire by mail, it appeared that the most important thing being able to create job satisfaction was autonomy on one's task which could effectively decrease burnout (Freeborn, 2001: 13-18).

In addition to autonomy, compensation and income is also among the top priorities having an impact on job satisfaction of doctors (Deckard, 1995: 40-46; Warren, Weitz and Kulis, 1998: 356-367; Linzer et al., 2000: 441-450; Edwards, Kornacki and Silversin, 2002: 835-838; Williams et al., 2002: 121-143; Grembowski et al., 2003: 383-392) as it was found, for an instance, in the survey on job satisfaction of doctors in Seattle, USA, totalling 252 subjects done by Dr. Grembowski et al. (2003: 383-393) who found that the most significant factor causing low level of job satisfaction in doctors was the income. This survey reflected the fact that doctors have changed their working nature from an entrepreneur to be an employee in organisation due to highly competitive nature of this business emerging during 1990s.

From the study on 1,904 doctors in Geneva, Switzerland about job satisfaction done by sending a questionnaire by mail, it was found that from 5 major aspects of job satisfaction, there were only 3 aspects that were in good level i.e. 1) patient care 2) other compensation and 3) interpersonal relation while the other 2 aspects, namely, 4) workload and 5) income gained low level of satisfaction (Patrick and Thomas, 2003: 299-305) especially for those working in government agencies who had too much workload, long working hours, too many patients and inadequate holiday all of which giving rise to decreasing efficacy, burnout, emotional exhaustion and low job satisfaction and unavoidable turnover (Williams et al., 2001: 7-19; Yost, Eshelma, Raoufi and Abouljoud, 2005: 1399-1401; Ozyurt, Hayran and Sur, 2006: 161-169).

Workload can consume the time for academic review, decrease working efficiency and cause physical fatigue

(Schaufeli and Enzman, 1998: 144-165; Freeborn, 2001: 13-18; Visser et al., 2003: 271-275; Nirel, Shirom and Ismail, 2004: 779-784). Research results on stress among medical personnel in Canada indicated that two third of doctors admitted that they had too much workload and 48% of them felt of job burnout and desiration for resignation (National Institute for Occupational Safety and Health, 2006).

Prof. Dr. Somsak Lohlekha, MD, President of the Medical Council of Thailand said that some hospitals only have 2 doctors being responsible for 200 patients a day. They have to perform all medical treatment and procedures including examination, diagnosis and operation etc. and to sometime work 24 hours a day ultimately causing fatigue. The rule has been issued to limit working time for doctor to not exceeding 10 hours a day in the US and 16 hours a day in Australia as it is considered that doctor and patient may be exposed to risks from error in treatment. Furthermore, doctors are also exposed to risk of car accident due to inadequate sleep 6 times higher than other careers and car accident is ranked as the 3rd cause of death of doctor (Somsak Lohlekha, 2008).

According to workload, it will unavoidably affect personal life of doctor leading to job-personal life conflict. Less time for family and friends and too short rest period and stress can all affect job satisfaction of doctors (Dugdale, Epstein and Pantilat, 1999: 34-40; Linzer et al., 2000: 441-450; Freeborn, 2001: 13-18; Shearer and Toedt, 2001: 751; Murray et al., 2001: 452-456; Elit et al., 2004: 134-139; Yost et al., 2005: 1399-1401). From the survey on job satisfaction of doctors in Geneva, Switzerland by sending questionnaire via the

mail, total number of respondents was equal to 1,184 or 59%. The results showed that positive factors for job satisfaction were relation at work and chance of further study and negative factors were income or compensation, workload, inadequate personal time for family and friend or even for travel and sport resulting in low level of job satisfaction and job stress (Bovier and Perneger, 2003: 299-304).

The situation will be worsened if such doctor is married and has children as conflict between job and family life will be intensified (work-home interference) and if time management is poorly done most of which will happen to female doctors than male doctors requiring the former to reduce working hours to relief such conflict and job stress (Lazarus, 1999: 3-13; Evans, Goldacre and Lambert, 2000: 355-362; Gjerberg, 2003: 1327-41; Rovik et al., 2007: 662-671).

Relation at work with others such as supervisor, other doctors and nurses, if there is conflict in relation at work; job satisfaction of doctor will be lowered and at the same time stress will be accumulated before turning out to desiration of resignation or work change. On the contrary, if colleagues give support to each other, it can reduce job stress (Richardson and Burke, 1991: 1179-87; Matt and Dean, 1993: 187-200; Persaud, 2002: 1-3; Cooper, Dewe, and O'Driscoll, 2003: 61; Patrick and Thomas, 2003: 299-305). Moreover, doctors with job stress can lose their motive and wrongly make decision on works and have poor communication and cooperation with colleagues. It may result in frequent leaves and affect the overall system of such organisation while colleagues will have to take charge of more

patients and finally result in worsened situation as the same as domino effect (Quine, 1998: 36-41; Newbury-Birch and Kamali, 2001: 109-111; Quine, 2002: 878-879).

From the research on Occupational Stress and Job Satisfaction of doctors in Canada where totalling 2,584 doctors were randomly selected, it appeared that the factor causing job stress was time pressure on the job while factor causing job satisfaction was relation with colleagues and patients (Richardson and Burke, 1991: 1179-87).

Government policy can play a significant role in creating job stress among doctors and lowering job satisfaction (Herrmann, 2001: 709-715; Bovier and Perneger, 2003: 299-305). In Switzerland, for instance, the implementation of the policy on "Compulsory Basic Health Insurance Coverage" has caused doctors to encounter certain problems where their organisations had to bear higher cost and they had to work harder due to higher ratio of the elderly leading to higher workload. Such has caused stress to doctors and reduced their job satisfaction (Office Federal De La Statistique, 2000 quoted in Patrick and Thomas, 2003: 299-305; Bovier and Perneger, 2003: 299-305).

The government policy imposed on each organisation can directly affect the work of the doctor and may result in higher rate of turnover (Moorman, 1991; Shapiro and Brett, 1993: 1167-1177; Cropanzano, **Byrne and Bobocel**, 2001: 164-209; Grembowski et al., 2003: 383-392). The above seems not different from the situation in Thailand where 3 types of health coverage system are adopted, namely, 1) universal health coverage 2) social security

and 3) civil servant's welfare system. Dr. Churdchoo Ariyasriwatana, M.D. (2009) noted that:

Those 3 health coverage systems have clearly caused inequality in the society. Those in the social security system, whether rich or poor, have to pay contribution to the fund to get their health coverage while those in universal coverage system, whether rich or poor, have to pay none to get the same. For civil servants, they have to accept lower amount of salary to get health coverage in return. The national health security system has also unnecessary drug use and medical treatment as some people do not realize the value and price of medical service (just demanding it for free). It also troubles some hospital with lack of liquidity.

In addition, health coverage system has also led to excessive amount of patient because people will pay less care to their health and disease prevention as they donot have to pay and also not have adequate knowledge to deal with simple illness by themselves and this will ultimately increase burden on existing doctors in government sector. They have to work at the average of 80-122 hours a week and have only 2-4 minutes for each patient as there are more than 100 patients¹ in the line waiting for them and accept compensation which does not match their workload. It is therefore quite clear why there are many doctors resigning from government sector

to a lesser workload and higher income job in private sector (Manager Online, 2008).

Excessive amount of patient will cause doctors to have inadequate time for rest and for examination and care for patient. This can ultimately impose risk on the public as doctors do not have enough time to reasonably and prudently use their professional knowledge and experience for diagnosing and curing the patient. Doctor will be then unimmunized to consequence of adverse effect of their practices and be more likely to be subject to misunderstanding by the public due to poor communication under limited time. We have witnessed more cases charged against doctors evidenced by constantly increasing complaints for initial help from 99 cases to 221 and 443 cases in 2004, 2005 and 2006, respectively.

According to the Secretariat Office of the Medical Council of Thailand, such complaints and allegations on ethical issue partly are the result of too much expectation by the patient from the doctor to the extent that doctors should cure their illness or save their lives without any complications. In fact, there are many cases that undesired results of treatment may be the consequences of severity or complication of the underlying disease or poor or abnormal response from individual patient or otherwise adverse effect from drug or treatment.

Working under workload for a long time of consecutive 24-36 hour will result in fatigue, stress and impaired discretion. Such doctors can appear to be frustrated, moody and impolite person and are likely to have conflict with colleagues and other persons and these

will pose risk of being sued or complained against (Churdchoo Ariyasriwatana, 2009).

Moreover, the inequality in geographic distribution of doctors has also been a persisting problem of health service found in all area of the world especially those countries where shortage of doctor number is an existing problem. This will affect both areas of loose and high density regarding efficiency and fairness of health care system. In Thailand, distribution of doctor is a critical factor for success or failure of the coverage of health security system. It has been currently estimated that there are around 25,600 doctors working in health care system. Having compared with the demand before implementation of universal coverage scheme, the shortage amount is still around 4,500 doctors. Taking into account the existing capacity for producing doctor, the balance number will be achieved around 2015 - 2016.

There are, however, at least 3 key factors influencing the increase of doctor demand nationwide including universal coverage scheme, campaign for promoting Thailand to be medical hub of the region and pilot project for HIV drug. It can be seen that the situation of geographic distribution has not shown any obvious positive tendency although number of doctor has been increased remarkably. From the three increases of productivity for the past 20 years (1987-1997) under the current situation posing threat to policy and measures addressing doctor distribution problem including economic recovery and growth of business and service in private sector and lack of proper control on the overall human resource in public health, we then witness the phenomenon

of massive resignation by doctor during the past several years (Health systems research institute, 2005).

Job Stress and Job Satisfaction have been systematically examined in empirical studies to demonstrate theoretical relation that job stress can result in job dissatisfaction. The studies showed that there were significant correlation between "stress" and "job satisfaction" (Lazarus and Folkman, 1984: 7-19; Kahn and Byosiere, 1992: 365-388; Lee and Ashforth, 1993b: 369-398; Williams et al., 2001: 7-19).

Job stress can have impact on both physical health and mental health (Falkum, 2000: 1122-1128). In fact, study on stress at the earlier stage focused on its impact on physical condition. For instance, the researches allow us to know substantial relation between stress and physiological reactions in 3 aspects including 1) cardiovascular system 2) biochemistry system and 3) alimentary system. In addition, high degree of stress can also increase hypertension (Lee and Ashforth, 1993a: 3-20; Fried et al., 1984 quoted in Williams et al., 2001: 7-19).

In respect of mental health, many papers focused on the impact of stress on mental health in terms of anxiety, depression and burnout (Billings and Moos, 1982: 99-117; Revicki, Whitley and Gallery, 1993: 74-81; Falkum, 2000: 1122-1128; Elit et al., 2004: 134-139; Moss, Lambert, Goldacre and Lee, 2004: 1263-1280)

In Thailand in 2003, for instance, health condition of Thai doctor was surveyed and it indicated that 36.2% of doctors in Thailand had physical health problem e.g. allergy, hypertension, asthma, diabetes and cancer, respectively. Concerning mental health, the overall

prevalence among Thai doctors was equal to 7.4% higher than normal population (Wattanasirichaigoon, Raksakom, Polboon, Sithisarankul and Visanuyothin 2004: 1-4.; Sithisarankul, Raksakom, Polboon, Boonthaaim, Visanuyothin and Wattanasirichaigoon 2004: 9-13) especially for those working in the three deep southern provinces. By applying depression screening test (CES-D), it was found that the prevalence among doctors was as high as as 52.4% (Surawat Niyamanont, 2004: 23-50).

In addition, job stress may lead doctors to drug abuse, alcoholism, self-injury or even suicide. From the study, it was found that proportion of suicide in male doctor was as much as 40% higher than male in other careers while the figure for female doctor was 130% higher than female in other career (Schernhammer and Colditz, 2004: 2295-2302). Single doctors or doctors with no children are more likely to commit suicide and many of them are single or divorced due to excessive work and tension between work and family life.

Furthermore, doctors are frequently prevented from proper care due to their own belief that they can diagnose and cure themselves and thus making them to neglect their health and allow themselves to encounter with emotional stress for too long. Doctors are more likely to blame themselves when they are ill and also deny seeing psychiatrists (Marzuk, 1987: 1409-1411; Mandell and Spiro, 1998: 152-154; Kirsling and Kochar, 1989: 951-959; Shernhammer, 2005: 2473-2476).

2.6 Conclusion and Conceptual Framework

It can be seen that such routine working environment including workload, colleagues, long working hours, expectation from patients, illness and death of people, inadequate rest, stressful policy and mismatch compensation, can cause accumulating job stress, low level of job satisfaction and ultimate psychological stress (Pathman, Williams and Konrad, 1996: 366-377; Grant, 2004: 1123; Kaarna et al., 2004: 253-261; Goehring, Bouvier, Künzi, and Bovier, 2005: 101-108; Al-Eisa, Al-Mutar and AL-Abduljalil, 2005: 1-5). Therefore, it has been accepted that job satisfaction is a significant factor that can prevent doctors from psychological stress in the long term (Ramirez, Graham, Richards, Cull and Gregory, 1996: 724-728; Visser et al., 2003: 168).

During the last decade, there has been widely studied about job stress, job satisfaction and burnout. The results of these studies have demonstrated relation between economic loss resulted from absence, sick leave, resignation, poor physical and mental health of workmen and decreasing efficiency of productivity (Prosser et al., 1997:51-9; Prosser et al., 1999: 295-300; Koic, Muzinic-Masle, Dordevic, Vondracek and Car-Markovic, 2001: 259-71; Gigantesco, Picardi, Chiaia, Balbi and Morosini, 2003: 349-55; Hudek-Knezevic, Krapic and Kardum, 2006: 65-73; Friscic, 2006: 347-70).

In addition, intrinsic factor of an organisation and inter personal relation can directly affect job satisfaction and job stress (Schaufeli and Enzman, 1998: 144-165; Ozyurt, Hayran and Sur, 2006: 161-169). It was

also empirically confirmed that low level of job satisfaction can significant affect job stress (Burisch, 2002: 1-17; Kalliath and Morris, 2002: 648-54; Faragher, Cass and Cooper, 2005: 105-12; Shirom, Nirel and Vinokur, 2006: 328-42).

This is in line with the conclusions from the studies in Great Britain (Moore, Ball and Kuipers, 1992: 28-34), the Netherlands (Visser et al., 2003: 271-275), USA (Grembowski et al., 2003: 383-393), Canada (Saindon-Larose and Rainville, 1993: 47-50), New Zealand (Dowell, Westcott, McLeod and Hamilton, 2001: 540-543), Australia (Gardiner, Lovell and Williamson, 2003: 545-551) and China (Jian et al., 2005: 1066-1077) where job stress (occupational stress) has caused physical and psychological stress and then affect job satisfaction occurring in vicious cycle (Bennett, Evans and Tattersall, 1993: 31-44; Nirel, Shirom and Ismail, 2004: 779-84; Coyle, Edwards, Hannigan, Fothergill and Burnard, 2005: 201-11; Ozyurt, Hayran and Sur, 2006: 161-9).

From this study on **Professional Characteristics and Psychological Stress among Physicians in Thailand**, it can be summarized as to the relation and conceptual framework of the research as follows:

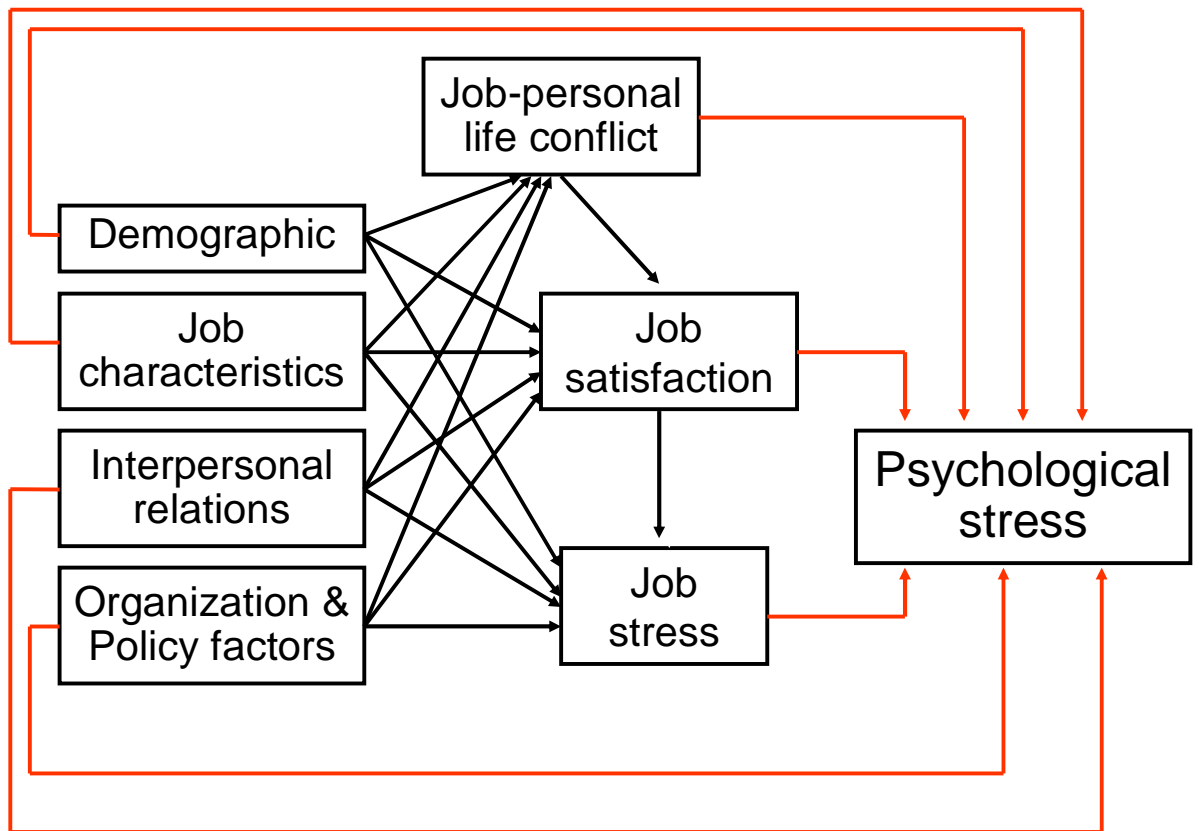


Figure 2.9 Conceptual Framework of the Study

2.7 Operational Definition

In this study on Professional Characteristics and Psychological Stress among Physicians in Thailand, variables used are as follows:

1) Demographic variables are demographic data relating to gender, age, job tenure, marital status, income, working place in urban/rural area, public/private organisation etc.

2) Job Characteristics means nature of works done by doctors and also circumstances encountered during work e.g. working hours, workload, number of patient per day,

autonomy in medical treatment and management including remuneration etc.

3) Organisational and Government Policy Factors means organisation commitment, satisfaction toward management, fairness of compensation and punishment, acknowledgement from colleagues, and government policy affecting work etc.

4) Interpersonal Relation means relation with other doctors, nurses and other staffs including patients.

5) Job-Personal Life Conflict includes working hour and workload to the extent that whether they have an impact on personal life and whether one can enjoy other recreational activities and also difficulties in balancing work and personal life etc.

6) Job Satisfaction, in this research in particular means satisfaction toward treatment standard, workload assignment, compensation and overall works (0=lowest degree of satisfaction, 10= highest degree of satisfaction).

7) Job Stress reflects pressures directly caused by work to the extent that whether work efficiency and job interest are decreased due to stress, resignation idea, attitude to medical profession and overall stress perceived by doctor.

8) Psychological Stress refers to symptom of stress which can express physically and mentally and lead to imbalance of body and mind. This research applies stress test Thai GHQ - 28 and the result will show the overall stress to consider that whether and to what extent Thai doctors have psychological stress.

9) Major Ward means medical specialty having more sub-specialities than Minor Ward and thus account for

more patients and workload than Minor Ward. Major Ward includes internal medicine, surgery, obstetrics-gynaecology and paediatrics. Minor Ward includes orthopaedics, ophthalmology and otolaryngology, psychiatry, general practice (GP) and other field of specialties (family clinical practice, rehabilitation medicine, anaesthesiology and radiology).

CHAPTER 3

RESEARCH METHODOLOGY

This research is a cross sectional, descriptive and inferential study conducting via national survey having the following details:

- 3.1 Target population
- 3.2 Sample size
- 3.3 Instruments
- 3.4 Data Analysis

3.1 Target Population

The target group includes specialized doctors in government and private medical facilities countrywide covering the following fields:

- 1) Major ward includes:
 - (1) Internal Medicine
 - (2) Surgery
 - (3) Obstetrics and Gynecology
 - (4) Pediatrics
- 2) Minor ward includes:
 - (1) Psychiatry
 - (2) Orthopedics
 - (3) Ophthalmology and Otolaryngology
 - (4) General Practice
 - (5) Others (family medicine, rehabilitation medicine, anesthesiology and radiology)

3.2 Sample Size

Sample group was randomly selected by Convenience Sample calculated by referring to number of doctors granted license in Thailand excluding those whose license were withdrawn or the deceased which was totally equal to 28,920 doctors in 2003 where 21,106 of which were working in official medical facilities (Ministry of Public Health, 2003. copied document). Sample size for analysis was determined by applying Yamane formula (referred to in Suchart Prasitratthasin, 2001: 278-296) where the researcher wished to limit sampling error at 5% (0.05), therefore, the sample size used in this study was equal to:

$$\begin{aligned}
 n &= \frac{N}{1 + Ne^2} \\
 &= \frac{28,920}{1 + 28,920 (.05)^2} \\
 &= 394.54 \text{ persons}
 \end{aligned}$$

3.3 Instruments

Tools used in the study include self administered questionnaires, both scale and open-ended questions which can be separated into 3 parts as follows:

3.3.1. Demographic Data

It covers demographic data such as gender, age, job tenure, marital status, income, place of work: urban or rural area etc. (12 items).

3.3.2. Second Part of Questionnaire Consists of:

1) Job Characteristics (Items 1-8) e.g. working hours, workload, income, work independency, capacity building etc.

2) Interpersonal Relation at Work (Items 9-12) comprises relationship with colleague e.g. doctor, nurse and other staff, relationship with patient, patient's relative, and patient's expectation etc.

3) Organization & Policy factors (Items 13-20): the questions relate to support from an organization against suing, health risk, fairness, attitude to an organization and public health system in Thailand etc.

4) Job-Personal life Conflict (Items 21-25): the questions relate to adequacy of personal time of doctor, time for family, interference with personal life and impact of work upon family etc.

5) Job Satisfaction (Items 26-29): the questions relate to overall job satisfaction of doctor in terms of medical care standard, task and income etc.

6) Job Stress (Items 30-34): the questions relate to overall job stress e.g. work performance, work interest, resignation idea as to whether such were driven by job stress including level of job stress resulted from current works etc.

7) Future Plan and Recommendations (open questions) (Items 35-37): the questions allow the respondent to answer freely about the future plan and likeliness to continue working or to resign and if it were to be the latter, within how many year, to change to private practice or to other career including the questions on the view toward an organization the

respondent is working for and toward public health system in Thailand etc.

The questionnaire for both 2 major parts provides scales ranging from:

1 = most dissatisfactory to 10 = most satisfactory or
1 = none stressful to 10 = most stressful

3.3.3 Assessment of Psychological Stress

Thai GHQ - 28 is applied for screening mental health problem. It is developed by Thana Nilchaikowit, Jaggrit Sukying and Chatchawan Silpakit, based on GHQ of Goldberg (1972), one of the most worldwide recognized mental health screening tests. This is intended to initially screen mental health problems and psychiatric condition by only indicating whether there is a mental health problem or not within diagnosis and covering only not longer than the last 3 weeks from the present status (Department of Mental Health, 2003).

Score will reflect stress which will have an impact on mental health status as follows:

Group 1 Items 1 - 7: Somatic symptoms

Group 2 Items 8 - 14: Anxiety and insomnia

Group 3 Items 15 - 21: Social dysfunction

Group 4 Items 22 - 28: Severe depression

Thai GHQ - 28 provides reliability and validity in good level range i.e. its internal consistency reflects Cronbach's alpha coefficient at the range of 0.84 to 0.94 and its sensitivity varies from 78.1% to 85.3% and its specificity is in the range of 84.4% to 89.7%.

1) Scoring: Scoring by GHQ-28 applies GHQ score (0-0-1-1) which is convenient and not different

from the method of Likert score (0-1-2-3) and correlation of these 2 methods is in the range of 0.92-0.94.

2) Interpreting results: Thai GHQ - 28 marks its threshold at 5/6 and score of 6 or above will be deemed abnormal.

3) Verifying completeness and correctness of questionnaire: Content validity was tested by submitting it to 4 experts to review its detail and appropriateness and the reviewed questionnaire was then tested with the same sample group for 60 subjects.

3.4 Data Analysis

From Table 3.1, it indicates that Cronbach's alpha of the tool is higher than 70 and it can be concluded that the tool has somewhat high reliability for being used as a tool for the research.

Table 3.1 Reliability Test

Instrument	Cronbach's Coefficient Alpha
Job Characteristic	.794
Interpersonal Relationship	.855
Organization Policy	.709
Job - Personal conflict	.787
Job Satisfaction	.798
Job Stress	.865
Psychological Stress	.941

Data analysis techniques used in the study are Descriptive Statistics apply to analyze demographic data, to determine prevalence of stress and level of job stress at national level and by comparing between government and private sector and Bangkok and provincial area. Then, Factor Analysis analyze variables correlation and to group those variables. Path Analysis is used for testing correlation between different factors and job stress, job satisfaction and psychological stress. And t-test is used for comparing between doctors in government hospital and private hospital and between those working in Bangkok and in provincial area.

CHAPTER 4

DATA ANALYSIS AND RESEARCH RESULTS

Results of analysis on variables relating job characteristics, relationship in work place, organization factor and policy, job-personal life conflict, job satisfaction, job stress and psychological stress including demographic profile are categorized as follows:

4.1 Demographic profile of sample group

4.2 Results of comparative analysis between doctors in Bangkok and provincial area

4.3 Means of Job Satisfaction, Job Stress, Psychological Stress and Job-Personal life Conflict

4.4 Results of comparative analysis between doctors in government hospital and private hospital

4.5 Correlation and Path analysis

4.6 Conclusion

4.6.1 Overall picture and Future Plan: career planning as a doctor

4.6.2 Perspective of doctor toward organization policy and public health system in Thailand (open ended question)

4.1 Demographic Profile of Sample Group

Questionnaires are returned for 439 copies or 71.38%. Most of respondents are male for 253 persons (57.63%) and number of female respondent is 186 persons (42.73%). Most of respondents are in the age range of 30-35 years (28.93%) followed by less than 30 years of age

(21.41%) and in the age range of 36-40 years (30.73%), respectively. With respect to marital status, most of respondents are single for 243 persons (55.35%) followed by married for 189 persons (42.37%) and divorced/widow for 10 persons (2.28%), respectively. Most of married respondents have 2 children (38.17%) followed by 1 child (30.11%) and no child for 40 persons (21.51%), respectively. At the average, the respondent has 1.37 children (Table 4.1).

Table 4.1 Demographic Variables (N=439)

Variables	Number	Percent
sex		
Male	253	57.63
Female	186	42.37
Total	439	100.00
age		
below 30 year	94	21.41
30-35 year	127	28.93
36-40 year	91	20.73
41-45 year	53	12.07
46-50 year	29	6.61
51- 55 year	22	5.01
55 year or above	23	5.24
Total	439	100.00
Status		
Single	243	55.35
Married	186	42.37
Divorce	10	2.28
Total	439	100.00
Number of child		
none	40	21.51
1 person	56	30.11
2 persons	71	38.17
3 persons	19	10.22
Total	186	100.00
Mean	1.37	
SD	0.934	

According to Table 4.2, most of respondents are those physicians specialized in psychiatry for 119 persons (27.11%) followed by internal medicine for 77 persons (17.54%) and general practice (GP) for 53 persons (12.07%), respectively. Majority of respondents for 62.19% are physicians working in hospitals in Bangkok and 37.81% are those working in provincial hospitals. If considering sector the respondents work with, most of them work in government sector for 83.60% and the rest work in private sector for 16.40%

Table 4.2 Number of Physician Divided by Specialty, Location and Organization

Variables	Number	Percent
Specialty		
Internal Medicine	77	17.54
Surgery	49	11.16
Obstetrics-Gynecology	22	5.01
Orthopedics	33	7.52
Pediatrics	29	6.61
Ophthalmology-Otolaryngology	39	8.88
Psychiatry	119	27.11
General Practice (GP)	53	12.07
Other	18	4.10
Total	439	100.00
Location of Workplace (Bangkok / provincial)		
Working in Bangkok area	273	62.19
Working in provincial area	166	37.81
Total	439	100
Type of an Organization (Government / Private Sector)		
Government Hospital	367	83.60
Private Hospital	72	16.40
Total	439	100

Almost all respondents (431 person or 98.18%) work as doctor both full time and part time job and there are only 8 respondents who do not work part time job. From Table 4.3, most of respondents working as full time doctor (23.29%) earn 40,001 - 55,000 Baht/month followed by 25,001 - 40,000 Baht/month (22.55%) and 55,001 - 70,000 Baht/month (15.03%), respectively. Most of respondents doing part time job (26.45%) can earn from such part time job for 25,001 - 40,000 Baht/month followed by less than 25,000 Baht/month (24.59%) and 40,001 - 55,000 Baht/month (13.93%), respectively.

Table 4.3 Number of Physician Working in Full Time and Part Time including Current Income per Month

Variables	Number	Percent
Job description		
Working both Full Time and Part Time	431	98.18
Full Time only	8	1.82
Total	439	100
Income per month (Full Time)		
below 25,000	60	13.67
25,001 - 40,000	99	22.55
40,001 - 55,000	105	23.92
55,001 - 70,000	66	15.03
70,001 - 85,000	27	6.15
85,001 - 100,000	22	5.01
100,001 - 150,000	25	5.69
150,001 - 200,000	15	3.42
200,001 or above	20	4.56
Total	439	100.00

Table 4.3 (Continued)

Variables	Number	Percent
Income per month (Part Time)		
below 25,000	106	24.59
25,001 - 40,000	114	26.45
40,001 - 55,000	59	13.69
55,001 - 70,000	59	13.69
70,001 - 85,000	37	8.58
85001 - 100,000	25	5.80
100,001 - 150,000	14	3.25
150,001 - 200,000	11	2.55
200,001 or above	6	1.39
Total	431	100.00

From Table 4.4 demonstrating number of working hours per week, it indicates that most of full time physicians (41.69%) work 26-40 hours per week and for those also doing part time job (39.64%) will additionally work for not exceeding 25 hours per week. Most of respondents for 138 persons or 31.44% have job tenure for less than 6 years and most of respondents for 72.44% (318 persons) have a time for rest 6-8 hours per day.

Table 4.4 Number of Working Hours of Full Time and Part Time Job, Average Sleeping Hour per Day and Job Tenure

Variables	Number	Percent
Full Time		
Number of Actual Working Hours (Per Week)		
Not exceeding 25 hrs	23	5.24
26-40 hrs	183	41.69
41-55 hrs	120	27.33
56-70 hrs	74	16.86
71-85 hrs	14	3.19
86-100 hrs	7	1.59
More than 100 hrs	10	2.28
Total	431	98.18

Table 4.4 (Continued)

Variables	Number	Percent
Part Time		
Number of Actual Working Hours (Per Week)		
Not exceeding 25 hrs	174	39.64
26-40 hrs	109	24.83
41-55 hrs	33	7.52
56-70 hrs	4	0.91
71-85 hrs	3	0.68
86-100 hrs	2	0.46
More than 100 hrs	2	0.46
Total	327	74.49
Average Sleeping Hour (per day)		
Not exceeding 5 hrs	110	25.06
6 - 8 hrs	318	72.44
More than 8 hrs	11	2.51
Total	439	100.00
Job Tenure		
less than 6 yrs	138	31.44
6 - 10 yrs	126	28.70
11 - 15 yrs	79	18.00
16 - 20 yrs	48	10.93
21 - 25 yrs	26	5.92
More than 25 yrs	22	5.01
Total	439	100.00

Note: Total numbers in each category vary due to non-response to a question

4.2 Results of Comparative Analysis between Doctors in Bangkok and Provincial Area

From the comparative analysis on doctor's attitude towards certain factors of doctors working in Bangkok and provincial area, it indicates that attitude toward interpersonal relation, organization and policy factors, and job satisfaction of sample group are significantly different. Doctors of all specialties show overall mean

of interpersonal relation at 6.57 (scale 1 - 10) and it is further found that doctors in Bangkok (mean=6.71) have better interpersonal relation than that of doctors in provincial area (mean=6.33).

The mean of attitude toward organization and policy factors of doctors of all specialties is at 5.79 (scale 0-10) where doctors in Bangkok are satisfied with organization policy (mean=5.89) to a higher extent than those in provincial area (mean=5.64). With respect to attitude to job satisfaction of doctors of all specialties, its mean is at medium level at 6.28 and doctors in Bangkok are found to have job satisfaction at higher level than those working in provincial area (6.40 as opposed to 6.09) according to Table 4.5.

Table 4.5 Mean of All Specialties' Attitude towards factors Divided by Location of Workplace (Bangkok / provincial) (N=439)

Variables	Total		All Specialties (Bangkok)		All Specialties (provincial)		P-value
	Mean	S.D.	Mean	S.D.	Mean	S.D.	
Job Characteristics	5.51	1.498	5.60	1.549	5.35	1.404	0.097
Interpersonal Relation	6.57	1.282	6.71	1.270	6.33	1.270	0.002*
Organization and Policy Factors	5.79	1.297	5.89	1.326	5.64	1.237	0.047*
Job-Personal Life Conflict	5.33	1.556	5.30	1.686	5.38	1.320	0.603
Job Satisfaction	6.28	1.526	6.40	1.546	6.09	1.478	0.045*
Job Stress	4.54	2.055	4.50	2.104	4.59	1.977	0.657
Psychological Stress	1.71	0.362	1.70	0.358	1.74	0.367	0.266

Note: * $p < 0.05$, ** $p < 0.001$

Comparative analysis between doctors in 9 fields of specialty in Bangkok and provincial area

4.2.1 Internal Medicine

From the analysis of internists in Bangkok and provincial area, there is no difference on attitude toward variables in 7 aspects as shown in Table 4.6 as follows:

Table 4.6 Mean of Attitude toward Variables of Internists Divided by Working Location (Bangkok / Provincial) (N=439)

Variables	Total		Internists (Bangkok)		Internists (Provincial)		p-value
	Mean	S.D.	Mean	S.D.	Mean	S.D.	
Job Characteristics	5.19	1.410	5.37	1.462	4.91	1.300	0.169
Interpersonal Relation	6.00	1.153	6.04	1.359	5.95	0.721	0.746
Organization and Policy Factors	5.53	1.175	5.73	1.228	5.22	1.029	0.061
Job-Personal Life Conflict	5.50	1.465	5.45	1.679	5.59	1.070	0.686
Job Satisfaction	6.01	1.344	6.19	1.423	5.73	1.178	0.130
Job Stress	5.14	1.991	4.98	2.143	5.38	1.732	0.397
Psychological Stress	1.74	0.365	1.75	0.391	1.72	0.325	0.741

Note: * $p < 0.05$, ** $p < 0.001$

4.2.2 Surgery

From the analysis, it indicates that surgeons in Bangkok have significant difference in attitude from those in provincial area toward organization and policy factors, job-personal life conflict, job satisfaction and job stress. Surgeons in provincial area have better attitude to organization policy and job satisfaction than those working in Bangkok while surgeons in Bangkok have higher degree of job-personal life conflict and job

stress than that of surgeons in provincial area. The means are shown in Table 4.7 as follows:

Table 4.7 Mean of Attitude toward Variables of Surgeons
Divided by Working Location (Bangkok /
Provincial) (N=439)

Variables	Total		surgeons (Bangkok)		surgeons (Provincial)		p- value
	Mean	S.D.	Mean	S.D.	Mean	S.D.	
Job Characteristics	5.17	1.242	5.16	1.286	5.18	1.214	0.964
Interpersonal Relation	6.31	1.036	6.41	0.987	6.18	1.110	0.444
Organization and Policy Factors	5.46	1.251	5.18	1.439	5.84	0.810	0.048*
Job-Personal Life Conflict	6.30	1.472	6.99	1.543	5.37	0.640	0.000**
Job Satisfaction	6.01	1.480	5.64	1.641	6.49	1.094	0.047*
Job Stress	5.45	1.879	6.06	1.680	4.65	1.862	0.008*
Psychological Stress	1.85	0.457	1.90	0.504	1.79	0.390	0.434

Note: * $p < 0.05$, ** $p < 0.001$

4.2.3 Obstetrics and Gynecology

From the comparative analysis of obstetricians and gynecologists in Bangkok and provincial area, there is no difference on attitude toward variables in 7 aspects as shown in Table 4.8 as follows:

Table 4.8 Mean of Attitude toward Variables of
Obstetricians Divided by Working Location
(Bangkok / Provincial) (N=439)

Variables	Total		Obstetricians (Bangkok)		Obstetricians (Provincial)		P- value
	Mean	S.D.	Mean	S.D.	Mean	S.D.	
Job Characteristics	5.83	1.266	5.77	1.406	5.95	1.018	0.769
Interpersonal Relation	6.68	1.298	6.75	1.482	6.54	0.859	0.728
Organization and Policy Factors	5.68	1.313	5.63	1.416	5.77	1.156	0.829
Job-Personal Life Conflict	5.33	0.672	5.33	0.788	5.31	0.363	0.952
Job Satisfaction	6.68	1.291	6.98	1.262	6.04	1.185	0.111
Job Stress	4.29	2.132	3.97	2.015	4.97	2.376	0.318
Psychological Stress	1.60	0.428	1.56	0.277	1.70	0.667	0.593

Note: * $p < 0.05$, ** $p < 0.001$

4.2.4 Orthopedics

From the analysis for difference between orthopedists in Bangkok and provincial area, there is no difference on attitude toward variables in 7 aspects as shown in Table 4.9 as follows:

Table 4.9 Mean of Attitude toward Variables of
Orthopedists Divided by Working Location
(Bangkok / Provincial) (N=439)

Variables	Total		Orthopedists (Bangkok)		Orthopedists (Provincial)		P- value
	Mean	S.D.	Mean	S.D.	Mean	S.D.	
Job Characteristics	5.39	1.409	5.50	1.787	5.25	0.789	0.598
Interpersonal Relation	6.69	1.586	7.14	1.119	6.15	1.913	0.074
Organization and Policy Factors	5.92	1.240	6.13	1.448	5.68	0.924	0.316
Job-Personal Life Conflict	5.88	1.316	5.68	1.182	6.14	1.473	0.329
Job Satisfaction	5.65	1.630	5.86	1.394	5.38	1.911	0.412
Job Stress	4.52	1.839	4.16	2.220	4.99	1.094	0.178
Psychological Stress	1.60	0.290	1.64	0.346	1.56	0.197	0.380

Note: * $p < 0.05$, ** $p < 0.001$

4.2.5 Pediatrics

From the comparative analysis, it appears that there are significant differences as to attitude toward organization policy and job satisfaction between pediatricians in Bangkok and provincial area where those working in Bangkok have higher job satisfaction (mean=7.13) and better attitude toward organization policy (mean=6.02) than that of pediatricians in provincial area (Table 4.10).

Table 4.10 Mean of Attitude toward Variables of Pediatrics Divided by Working Location (Bangkok / Provincial) (N=439)

Variables	Total		Pediatrics (Bangkok)		Pediatrics (Provincial)		p-value
	Mean	S.D.	Mean	S.D.	Mean	S.D.	
Job Characteristics	5.57	1.580	5.75	1.628	4.50	0.568	0.147
Interpersonal Relation	6.72	1.301	6.69	1.377	6.94	0.747	0.731
Organization and Policy Factors	5.76	0.930	6.02	0.719	4.25	0.368	0.000**
Job-Personal Life Conflict	5.25	1.517	5.10	1.571	6.15	0.719	0.206
Job Satisfaction	6.84	1.603	7.13	1.486	5.06	1.179	0.014*
Job Stress	4.46	2.042	4.27	2.084	5.60	1.488	0.234
Psychological Stress	1.59	0.288	1.57	0.293	1.71	0.263	0.383

Note: * $p < 0.05$, ** $p < 0.001$

4.2.6 Ophthalmology and Otolaryngology (ENT)

From the analysis, it shows that there is no difference in attitude toward variables relating work in 7 aspects of ENT doctors in Bangkok and those in provincial area as detailed in Table 4.11.

Table 4.11 Mean of Attitude toward Variables of ENT
Divided by Working Location (Bangkok /
Provincial) (N=439)

Variables	Total		ENT (Bangkok)		ENT (Provincial)		p- value
	Mean	S.D.	Mean	S.D.	Mean	S.D.	
Job Characteristics	6.08	1.784	6.16	1.820	5.58	1.617	0.506
Interpersonal Relation	7.06	0.889	7.01	0.940	7.40	0.224	0.364
Organization and Policy Factors	6.18	1.247	6.12	1.230	6.58	1.443	0.455
Job-Personal Life Conflict	4.95	1.690	5.00	1.728	4.64	1.545	0.663
Job Satisfaction	6.61	1.835	6.51	1.834	7.44	1.875	0.348
Job Stress	3.62	1.875	3.61	1.925	3.70	1.604	0.926
Psychological Stress	1.63	0.409	1.65	0.422	1.50	0.312	0.463

Note: * $p < 0.05$, ** $p < 0.001$

4.2.7 Psychiatry

The overall attitude of psychiatrists toward organization and policy factors is at the mean of 6.07 and it appears that the mean for psychiatrists in Bangkok is equal to 6.34 while it is equal to 5.68 for those in provincial area. This means that psychiatrists in Bangkok have better attitude toward organization's policy that that of psychiatrists in provincial area (Table 4.12).

Table 4.12 Mean of Attitude toward Variables of Psychiatrist Divided by Working Location (Bangkok / Provincial) (N=439)

Variables	Total		Psychiatrist (Bangkok)		Psychiatrist (Provincial)		p-value
	Mean	S.D.	Mean	S.D.	Mean	S.D.	
Job Characteristics	5.66	1.566	5.80	1.559	5.46	1.571	0.254
Interpersonal Relation	6.93	1.247	7.06	1.241	6.74	1.243	0.166
Organization and Policy Factors	6.07	1.455	6.34	1.391	5.68	1.472	0.015*
Job-Personal Life Conflict	4.95	1.575	4.82	1.609	5.14	1.523	0.288
Job Satisfaction	6.61	1.444	6.64	1.435	6.56	1.472	0.788
Job Stress	4.00	2.103	3.83	1.970	4.25	2.278	0.289
Psychological Stress	1.66	0.329	1.66	0.255	1.67	0.419	0.875

Note: * $p < 0.05$, ** $p < 0.001$

4.2.8 General Practice (GP)

From the analysis for difference, it shows that GP doctors in Bangkok have the mean job stress at higher level than those GP doctors in provincial area (5.51 as opposed to 3.88) and the former have the mean of psychological stress at lower level than the latter (1.77 as opposed to 1.94) according to being tested by GHQ-28 (Table 4.13).

Table 4.13 Mean of Attitude toward Variables of GP Divided by Working Location (Bangkok / Provincial) (N=439)

Variables	Total		GP (Bangkok)		GP (Provincial)		P-value
	Mean	S.D.	Mean	S.D.	Mean	S.D.	
Job Characteristics	5.51	1.573	5.29	1.467	5.67	1.646	0.398
Interpersonal Relation	6.43	1.451	6.90	1.339	6.13	1.460	0.063
Organization and Policy Factors	5.72	1.317	5.46	1.326	5.88	1.306	0.273
Job-Personal Life Conflict	4.90	1.726	4.47	1.947	5.18	1.536	0.177
Job Satisfaction	6.01	1.564	6.29	1.646	5.83	1.505	0.308
Job Stress	4.55	1.999	5.51	1.931	3.88	1.790	0.004*
Psychological Stress	1.87	0.266	1.77	0.315	1.94	0.207	0.041*

Note: * $p < 0.05$, ** $p < 0.001$

4.2.9 Other Specialties

Results of analysis on doctors of other specialties (family medicine, rehabilitation medicine, anesthesiology and radiology), it indicates that the mean of attitude toward interpersonal relation is significantly different between doctors working in Bangkok and in provincial area where doctors of other specialties show better interpersonal relation that the same in provincial area (6.19 versus 5.10) as shown in Table 4.14.

Table 4.14 Mean of Attitude toward Variables of Other Specialties Divided by Working Location (Bangkok / Provincial) (N=439)

Variables	Total		Other specialties (Bangkok)		Other specialties (Provincial)		P-value
	Mean	S.D.	Mean	S.D.	Mean	S.D.	
Job Characteristics	5.26	1.105	5.08	1.025	5.75	1.275	0.259
Interpersonal Relation	5.89	1.040	6.19	1.021	5.10	0.627	0.042*
Organization and Policy Factors	5.35	1.011	5.40	1.008	5.23	1.126	0.748
Job-Personal Life Conflict	5.67	0.975	5.62	0.950	5.80	1.140	0.731
Job Satisfaction	5.81	1.216	5.94	1.061	5.44	1.737	0.495
Job Stress	5.30	1.657	5.29	1.392	5.32	2.419	0.976
Psychological Stress	1.81	0.261	1.80	0.247	1.82	0.326	0.879

Note: * $p < 0.05$, ** $p < 0.001$

4.3 Means of Job Satisfaction, Job Stress, Psychological Stress and Job-Personal Life Conflict

4.3.1 Mean of Job Satisfaction

From Table 4.15, it demonstrates the mean of attitude toward job satisfaction among sample group of doctor of all specialties at the overall of 6.28 (scale 0-10) where pediatricians show highest job satisfaction at the mean of 6.84 followed by obstetricians and gynecologists (mean=6.68), ophthalmologists and otolaryngologists or ENT (mean=6.61) and psychiatrists (mean=6.61), respectively. And orthopedists show lowest job satisfaction (mean= 5.65).

Table 4.15 Mean of Job Satisfaction in Order

Specialties	Mean	SD
Pediatrics	6.84	0.298
Obstetrics and Gynecology	6.68	0.275
Ophthalmology and Otolaryngology(ENT)	6.61	0.298
Psychiatry	6.61	0.298
Internal Medicine	6.01	0.153
Surgery	6.01	0.211
General Practice (GP)	6.01	0.217
Other specialties	5.81	0.304
Orthopedics	5.65	0.288
Total	6.28	1.526

4.3.2 Mean of Job Stress

From Table 4.16, it demonstrates the overall mean of attitude toward job stress among doctors is equal to 4.54 (scale 0-10) where surgeons show highest job stress (mean=5.45 at the mean of 6.84 followed by other

specialties (mean=5.30) and internist (mean=5.14). Ophthalmologists and otolaryngologists or ENT show lowest job stress (mean=3.62) and psychiatrists (mean=3.62) etc.

Table 4.16 Mean of Job Stress in Order

Specialties	Mean	SD
Surgery	5.45	0.268
Other specialties	5.30	0.390
Internal Medicine	5.14	0.227
General Practice (GP)	4.55	0.286
Orthopedics	4.52	0.325
Pediatrics	4.46	0.386
Obstetrics and Gynecology	4.29	0.455
Ophthalmology and Otolaryngology(ENT)	3.62	0.304
Psychiatry	3.62	0.304
Total	4.54	2.055

4.3.3 Psychological Stress Measured by Thai GHQ 28

With respect to analysis on GHQ scores, doctors of all specialties show the mean at 0.09 (applying threshold at 5/6 where score 6 or above shall be deemed abnormal). This means that Thai doctors show normal mental status. Surgeons are the group gaining highest score (0.16) followed by internists (0.11), other specialties (0.11) and obstetricians and gynecologists (0.10), respectively. Orthopedists show lowest mean at 0.05 as detailed in Table 4.17.

Table 4.17 Mean of Psychological Stress in Order

Specialties	Mean	SD
Surgery	0.16	0.034
Internal Medicine	0.11	0.019
Other specialties	0.11	0.032
Obstetrics and Gynecology	0.10	0.040
Ophthalmology and Otolaryngology(ENT)	0.09	0.029
Psychiatry	0.09	0.029
Pediatrics	0.06	0.020
General Practice (GP)	0.06	0.016
Orthopedics	0.05	0.017
Total	0.09	0.163

4.3.4 Mean of Job-Personal Life Conflict

From Table 4.18, it indicates that the mean of attitude toward job-personal life conflict of doctor of all specialties is equal to 5.33 (scale 0-10) where those having highest job-personal life conflict is surgeon at the mean of 6.30 followed by orthopedists at 5.88 where psychiatrists and general practitioners (GP) show lowest job-personal life conflict as demonstrated in Table 4.18.

Table 4.18 Mean of Job-Personal Life Conflict in Order

Specialties	Mean	SD
Surgery	6.30	1.47
Orthopedics	5.88	1.32
Other specialties	5.67	0.97
Internal Medicine	5.50	1.47
Obstetrics and Gynecology	5.33	0.67
Pediatrics	5.25	1.52
Ophthalmology and Otolaryngology(ENT)	4.95	1.69
Psychiatry	4.95	1.58
General Practice (GP)	4.90	1.73
Total	5.33	1.56

4.4 Results of Comparative Analysis between Doctors in Government Hospital and Private Hospital

From the comparative analysis of attitude of doctors toward different factors by grouping them into 2 groups, namely government hospital and private hospital, it indicates that the 2 groups have significantly differences in attitude toward job characteristics, interpersonal relation, organization and policy factors, job satisfaction, job stress and psychological stress.

Doctors in private hospital show greater satisfaction toward job characteristic, better interpersonal relation, greater satisfaction toward organization and policy and better job satisfaction than those of doctors in government hospital as described in Table 4.19.

It should be noted that doctors in government sector have higher level of job stress than that of doctors in private sector (4.71 against 3.64) and higher level of psychological stress than that of doctors in private sector as well (1.74 against 1.58) as shown in Table 4.19.

Table 4.19 Mean of All Specialties' Attitude towards Factors Divided by Type of Organization (Government / Private Hospital) (N=439)

Variables	Total		Working in Government Hospital		Working in Private Hospital		p-value
	Mean	S.D.	Mean	S.D.	Mean	S.D.	
Job Characteristics	5.51	1.498	5.30	1.433	6.57	1.379	0.000**
Interpersonal Relation	6.57	1.282	6.51	1.290	6.84	1.213	0.044*
Organization and Policy Factors	5.79	1.297	5.66	1.274	6.49	1.193	0.000**
Job-Personal Life Conflict	5.33	1.556	5.36	1.598	5.17	1.315	0.333
Job Satisfaction	6.28	1.526	6.11	1.488	7.15	1.423	0.000**
Job Stress	4.54	2.055	4.71	2.053	3.64	1.832	0.000**
Psychological Stress	1.71	0.362	1.74	0.369	1.58	0.289	0.000**

Note: * p<0.05, ** p<0.001

Analysis sort by 9 areas of specialty in government and private hospitals

4.4.1 Internal Medicine

From Table 4.20, internists working in government hospitals show significantly different attitude toward

job characteristics, organization and policy factors and job satisfaction as opposed to the same working in private hospitals where the latter has better attitude toward job characteristics (mean=6.14), organization and policy factors (mean=6.39) and job satisfaction (mean=6.92) than those of the former.

Table 4.20 Mean of Attitude toward Variables of Internists Divided by Type of Organization (Government / Private Hospital) (N=439)

Variables	Total		Internists (Government Hospital)		Internists (Private Hospital)		p-value
	Mean	S.D.	Mean	S.D.	Mean	S.D.	
Job Characteristics	5.19	1.410	5.03	1.373	6.14	1.300	0.015*
Interpersonal Relation	6.00	1.153	5.93	1.138	6.40	1.203	0.201
Organization and Policy Factors	5.53	1.175	5.38	1.146	6.39	0.981	0.006*
Job-Personal Life Conflict	5.50	1.465	5.44	1.548	5.85	0.858	0.373
Job Satisfaction	6.01	1.344	5.85	1.372	6.92	0.685	0.000**
Job Stress	5.14	1.991	5.24	2.001	4.60	1.928	0.312
Psychological Stress	1.74	0.365	1.76	0.382	1.65	0.241	0.328

Note: * $p < 0.05$, ** $p < 0.001$

4.4.2 Surgery

Result of analysis indicates that surgeons in government and private sector have no difference in attitude toward 7 variables as detailed in Table 4.21.

Table 4.21 Mean of Attitude toward Variables of Surgeons
Divided by Type of Organization (Government /
Private Hospital) (N=439)

Variables	Total		surgeons (Government Hospital)		surgeons (Private Hospital)		p- value
	Mean	S.D.	Mean	S.D.	Mean	S.D.	
Job Characteristics	5.17	1.242	5.15	1.259	5.69	0.795	0.552
Interpersonal Relation	6.31	1.036	6.26	1.037	7.08	0.804	0.186
Organization and Policy Factors	5.46	1.251	5.38	1.254	6.58	0.382	0.107
Job-Personal Life Conflict	6.30	1.472	6.39	1.465	4.87	0.643	0.082
Job Satisfaction	6.01	1.480	5.98	1.519	6.33	0.722	0.696
Job Stress	5.45	1.879	5.50	1.908	4.80	1.442	0.540
Psychological Stress	1.85	0.457	1.85	0.451	1.82	0.661	0.911

Note: * $p < 0.05$, ** $p < 0.001$

4.4.3 Obstetrics and Gynecology

Obstetricians and gynecologists in government sector and in private sector show significant difference in attitude to job satisfaction as it appears that obstetricians and gynecologists working in private sector have better job satisfaction than that of those working in government sector (7.33 as opposed to 6.15) as demonstrated in Table 4.22.

Table 4.22 Mean of Attitude toward Variables of Obstetricians and Gynecologists Divided by Type of Organization (Government / Private Hospital) (N=439)

Variables	Total		Obstetricians (Government Hospital)		Obstetricians (Private Hospital)		p- value
	Mean	S.D.	Mean	S.D.	Mean	S.D.	
Job Characteristics	5.83	1.266	5.39	1.261	6.31	1.140	0.095
Interpersonal Relation	6.68	1.298	6.27	0.815	7.18	1.620	0.105
Organization and Policy Factors	5.68	1.313	5.33	1.126	6.09	1.458	0.186
Job-Personal Life Conflict	5.33	0.672	5.43	0.697	5.20	0.653	0.431
Job Satisfaction	6.68	1.291	6.15	0.980	7.33	1.370	0.029*
Job Stress	4.29	2.132	4.90	1.975	3.56	2.180	0.146
Psychological Stress	1.60	0.428	1.71	0.493	1.48	0.311	0.205

Note: * $p < 0.05$, ** $p < 0.001$

4.4.4 Orthopedics

Orthopedists working in government hospitals show significantly different attitude toward job characteristics, interpersonal relation and organization and policy factors as opposed to the same working in private hospitals where the latter has better attitude toward job characteristics (mean=6.78), interpersonal relation (mean=7.45) and organization and policy factors (mean=7.55) than those of the former. In addition, orthopedists in government sector also have higher level of job stress than that of those working in private sector as shown in Table 4.23.

Table 4.23 Mean of Attitude toward Variables of
Orthopedists Divided by Type of Organization
(Government / Private Hospital) (N=439)

Variables	Total		Orthopedists (Government Hospital)		Orthopedists (Private Hospital)		p- value
	Mean	S.D.	Mean	S.D.	Mean	S.D.	
Job Characteristics	5.39	1.409	5.14	1.265	6.78	1.496	0.014*
Interpersonal Relation	6.69	1.586	6.55	1.681	7.45	0.447	0.025*
Organization and Policy Factors	5.92	1.240	5.63	0.965	7.55	1.454	0.001*
Job-Personal Life Conflict	5.88	1.316	6.00	1.332	5.24	1.126	0.242
Job Satisfaction	5.65	1.630	5.54	1.630	6.25	1.668	0.378
Job Stress	4.52	1.839	4.89	1.639	2.52	1.677	0.006*
Psychological Stress	1.60	0.290	1.64	0.288	1.42	0.247	0.125

Note: * $p < 0.05$, ** $p < 0.001$

4.4.5 Pediatrics

Result of analysis indicates that there is no difference in attitude toward 7 variables between pediatricians in government sector and in private sector as shown in the following Table (Table 4.24).

Table 4.24 Mean of Attitude toward Variables of
Pediatricians Divided by Type of Organization
(Government / Private Hospital) (N=439)

Variables	Total		Pediatricians (Government Hospital)		Pediatricians (Private Hospital)		p- value
	Mean	S.D.	Mean	S.D.	Mean	S.D.	
Job Characteristics	5.57	1.580	5.41	1.643	6.00	1.411	0.379
Interpersonal Relation	6.72	1.301	6.68	1.314	6.84	1.349	0.766
Organization and Policy Factors	5.76	0.930	5.70	0.930	5.93	0.979	0.586
Job-Personal Life Conflict	5.25	1.517	5.29	1.602	5.15	1.376	0.830
Job Satisfaction	6.84	1.603	6.62	1.578	7.44	1.613	0.225
Job Stress	4.46	2.042	4.68	2.012	3.80	2.145	0.335
Psychological Stress	1.59	0.288	1.62	0.322	1.49	0.143	0.124

Note: * $p < 0.05$, ** $p < 0.001$

4.4.6 Ophthalmology and Otolaryngology (ENT)

From Table 4.25, ophthalmologists and otolaryngologists working in government hospitals show significantly different attitude toward job characteristics and organization and policy factors as opposed to the same working in private hospitals where the latter has better attitude toward job characteristics (6.99 against 5.21) and organization and policy factors (6.78 against 5.66) than those of the former.

Table 4.25 Mean of Attitude toward Variables of ENT
Divided by Type of Organization (Government /
Private Hospital) (N=439)

Variables	Total		ENT (Government Hospital)		ENT (Private Hospital)		p-value
	Mean	S.D.	Mean	S.D.	Mean	S.D.	
Job Characteristics	6.08	1.784	5.21	1.667	6.99	1.439	0.001*
Interpersonal Relation	7.06	0.889	7.06	0.869	7.06	0.938	0.989
Organization and Policy Factors	6.18	1.247	5.66	1.052	6.78	1.206	0.004*
Job-Personal Life Conflict	4.95	1.690	5.04	1.485	4.85	1.956	0.734
Job Satisfaction	6.61	1.835	6.10	1.714	7.18	1.843	0.069
Job Stress	3.62	1.875	4.10	2.058	3.08	1.528	0.094
Psychological Stress	1.63	0.409	1.71	0.506	1.53	0.232	0.162

Note: * $p < 0.05$, ** $p < 0.001$

4.4.7 Psychiatry

Result of analysis shows that psychiatrists working in private sector have better level of attitude toward job characteristics that that of those working in government sector (mean=7.16 as opposed to 5.57) and the former also has higher level of job satisfaction than

that of the latter (8.25 as opposed to 6.5) as shown in Table 4.26.

Table 4.26 Mean of Attitude toward Variables of Psychiatrists Divided by Type of Organization (Government / Private Hospital) (N=439)

Variables	Total		Psychiatrist (Government Hospital)		Psychiatrist (Private Hospital)		P- value
	Mean	S.D.	Mean	S.D.	Mean	S.D.	
Job Characteristics	5.66	1.566	5.57	1.499	7.16	1.968	0.008*
Interpersonal Relation	6.93	1.247	6.91	1.244	7.25	1.354	0.490
Organization and Policy Factors	6.07	1.455	6.02	1.467	6.82	1.058	0.161
Job-Personal Life Conflict	4.95	1.575	4.98	1.595	4.46	1.204	0.395
Job Satisfaction	6.61	1.444	6.50	1.386	8.25	1.422	0.002*
Job Stress	4.00	2.103	4.04	2.121	3.37	1.809	0.416
Psychological Stress	1.66	0.329	1.67	0.331	1.58	0.304	0.495

Note: * $p < 0.05$, ** $p < 0.001$

4.4.8 General Practice (GP)

From Table 4.27, it shows that GPs in government sector and private sector have significantly different attitude toward job characteristics where the former has show the mean at 5.33 as opposed to 6.92 of those working in private sector. Such means that GPs in private sector have better satisfaction in job characteristics that that of those working in government sector.

Table 4.27 Mean of Attitude toward Variables of GP
Divided by Type of Organization (Government /
Private Hospital) (N=439)

Variables	Total		GP (Government Hospital)		GP (Private Hospital)		p- value
	Mean	S.D.	Mean	S.D.	Mean	S.D.	
Job Characteristics	5.51	1.573	5.33	1.536	6.92	1.145	0.018*
Interpersonal Relation	6.43	1.451	6.53	1.480	5.71	1.030	0.197
Organization and Policy Factors	5.72	1.317	5.70	1.335	5.85	1.286	0.786
Job-Personal Life Conflict	4.90	1.726	4.84	1.788	5.37	1.169	0.488
Job Satisfaction	6.01	1.564	5.91	1.622	6.79	0.660	0.198
Job Stress	4.55	1.999	4.63	2.059	3.93	1.500	0.428
Psychological Stress	1.87	0.266	1.88	0.274	1.84	0.213	0.756

Note: * $p < 0.05$, ** $p < 0.001$

4.4.9 Other Specialties

Doctors in other fields of specialty (family medicine, rehabilitation medicine, anesthesiology and radiology) working in private sector are satisfied with job characteristics and organization policy to a significantly higher extent than the same group in public sector.

The attitude toward job characteristics reflected by doctors in other specialties in government sector is at the mean of 5.08 as opposed to 6.21 of the same working in private sector while the mean of attitude toward organization and policy factors of the former is at 5.13 as opposed to 6.46 of the latter (Table 4.28).

Table 4.28 Mean of Attitude toward Variables of Other Specialties Divided by Type of Organization (Government / Private Hospital) (N=439)

Variables	Total		Other specialties (Government Hospital)		Other specialties (Private Hospital)		P-value
	Mean	S.D.	Mean	S.D.	Mean	S.D.	
Job Characteristics	5.26	1.105	5.08	1.114	6.21	0.289	0.004
Interpersonal Relation	5.89	1.040	5.80	1.032	6.33	1.181	0.434
Organization and Policy Factors	5.35	1.011	5.13	0.911	6.46	0.832	0.034
Job-Personal Life Conflict	5.67	0.975	5.67	1.041	5.67	0.702	1.000
Job Satisfaction	5.81	1.216	5.63	1.176	7.13	0.530	0.060
Job Stress	5.30	1.657	5.59	1.463	3.87	2.157	0.102
Psychological Stress	1.81	0.261	1.81	0.237	1.76	0.429	0.762

Note: * $p < 0.05$, ** $p < 0.001$

4.5 Correlation and Path Analysis

Table 4.29 Correlation of Variables

	jobcha	intper	orgpol	jobper	jobsat	jobstr	psysr	Male	age0_40	age41_50	age51up	single	minorw	province
interper	0.531	1.000												
	0.000													
orgpol	0.629	0.490	1.000											
	0.000	0.000												
jobper	-0.440	-0.404	-0.470	1.000										
	0.000	0.000	0.000											
jobsat	0.426	0.424	0.538	-0.447	1.000									
	0.000	0.000	0.000	0.000										
jobstr	-0.616	-0.444	-0.597	0.490	-0.422	1.000								
	0.000	0.000	0.000	0.000	0.000									
psysr	-0.344	-0.269	-0.302	0.312	-0.300	0.470	1.000							
	0.000	0.000	0.000	0.000	0.000	0.000								
Male	-0.008	0.005	0.012	0.092	0.003	0.011	0.016	1.000						
	0.870	0.919	0.805	0.056	0.955	0.828	0.741							
age0_40	-0.209	-0.179	-0.194	0.162	-0.165	0.093	0.120	-0.059	1.000					
	0.000	0.000	0.000	0.001	0.001	0.054	0.012	0.217						
age41_50	0.113	0.041	0.097	-0.047	0.065	-0.070	-0.095	0.092	-0.751	1.000				
	0.019	0.392	0.043	0.329	0.179	0.150	0.048	0.055	0.000					
age51	0.167	0.217	0.164	-0.182	0.164	-0.049	-0.058	-0.029	-0.530	-0.162	1.000			
	0.000	0.000	0.001	0.000	0.001	0.308	0.231	0.539	0.000	0.001				
single	-0.110	-0.153	-0.074	0.041	-0.086	0.032	0.126	-0.130	0.397	-0.263	-0.255	1.000		
	0.022	0.001	0.124	0.392	0.075	0.505	0.009	0.006	0.000	0.000	0.000			
minorw	0.099	0.116	0.145	-0.175	0.028	-0.193	-0.035	-0.056	0.008	-0.011	0.002	0.093	1.000	
	0.039	0.015	0.002	0.000	0.567	0.000	0.463	0.239	0.865	0.815	0.963	0.051		
province	-0.080	-0.167	-0.096	0.024	-0.097	0.022	0.053	0.022	0.114	0.000	-0.171	0.039	0.047	1.000
	0.097	0.000	0.047	0.624	0.045	0.657	0.266	0.643	0.017	0.999	0.000	0.417	0.324	
Private	0.313	0.177	0.239	-0.047	0.255	-0.194	-0.163	-0.056	-0.057	0.072	-0.008	0.014	-0.050	-0.219
	0.000	0.000	0.000	0.333	0.000	0.000	0.001	0.242	0.237	0.133	0.872	0.767	0.298	0.000

The table showing correlation between variables used in Multiple Regression Analysis shows that there is no pair of variables having correlation coefficient higher than .75 which means that these variables can be used for Multiple Regression Analysis.

From Conceptual Framework, it can be written in structural equations as follows:

$$\begin{aligned} \text{PsyStr} = & \beta_1 \text{JobChar} + \beta_2 \text{IntPer} + \beta_3 \text{OrgPol} + \beta_4 \text{JobPer} + \beta_5 \text{JobSat} + \beta_6 \text{JobStr} \\ & + \beta_7 \text{Male} + \beta_8 \text{age0_40} + \beta_9 \text{age41_50} + \beta_{10} \text{age51up} + \beta_{11} \text{single} \\ & + \beta_{12} \text{minorw} + \beta_{13} \text{province} + \beta_{14} \text{Private} \dots\dots\dots 1 \end{aligned}$$

$$\begin{aligned} \text{JobStr} = & \beta_{15} \text{JobChar} + \beta_{16} \text{IntPer} + \beta_{17} \text{OrgPol} + \beta_{18} \text{JobPer} + \beta_{19} \text{JobSat} + \beta_{20} \text{Male} \\ & + \beta_{21} \text{age0_40} + \beta_{22} \text{age41_50} + \beta_{23} \text{age51up} + \beta_{24} \text{single} \\ & + \beta_{25} \text{minorw} + \beta_{26} \text{province} + \beta_{27} \text{Private} \dots\dots\dots 2 \end{aligned}$$

$$\begin{aligned} \text{JobSat} = & \beta_{28} \text{JobChar} + \beta_{29} \text{IntPer} + \beta_{30} \text{OrgPol} + \beta_{31} \text{JobPer} + \beta_{32} \text{Male} \\ & + \beta_{33} \text{age0_40} + \beta_{34} \text{age41_50} + \beta_{35} \text{age51up} + \beta_{36} \text{single} + \beta_{37} \text{minorw} \\ & + \beta_{38} \text{province} + \beta_{39} \text{Private} \dots\dots\dots 3 \end{aligned}$$

$$\begin{aligned} \text{JobPer} = & \beta_{40} \text{JobChar} + \beta_{41} \text{IntPer} + \beta_{42} \text{OrgPol} + \beta_{43} \text{Male} \\ & + \beta_{44} \text{age0_40} + \beta_{45} \text{age41_50} + \beta_{46} \text{age51up} + \beta_{47} \text{single} + \beta_{48} \text{minorw} \\ & + \beta_{49} \text{province} + \beta_{50} \text{Private} \dots\dots\dots 4 \end{aligned}$$

Where β_j are standardized coefficients.

From the above equations, when being processed by SPSS program by Linear Regression, Stepwise method, the following equations can be developed:

$$\begin{aligned} \text{PsyStr} = & 0.421 \text{JobStr} - 0.106 \text{JobSat} + .114 \text{Single} \dots\dots\dots 5 \\ & (8.863) \quad (-2.221) \quad (2.637) \\ & R = 0.496 \quad R^2 = 0.246 \quad \text{SEE} = .312 \quad F = 44.368 \quad \text{Sig.} = 0.000 \end{aligned}$$

$$\begin{aligned} \text{JobStr} = & -0.357 \text{JobChar} - 0.286 \text{OrgPol} + 0.183 \text{JobPer} - 0.202 \text{IntPer} + .094 \text{Age51} - .082 \text{Minorw} \dots 6 \\ & (-7.696) \quad (-6.049) \quad (4.905) \quad (-2.595) \quad (2.621) \quad (-2.311) \\ & R = 0.708 \quad R^2 = .0501 \quad \text{SEE} = 1.468 \quad F = 81.961 \quad \text{Sig.} = 0.000 \end{aligned}$$

$$\text{JobSat} = 0.321 \text{ OrgPol} - .229 \text{ JobPer} + .155 \text{ IntPer} + .135 \text{ Private} \dots\dots\dots 7$$

(6.623) (-5.037) (3.351) (3.339)

R = 0.614 R² = 0.377 SEE = 1.219 F = 62.443 Sig. = 0.000

$$\text{JobPer} = -5.060 \text{ OrgPol} - 3.506 \text{ IntPer} - 3.495 \text{ JobCha} + 2.458 \text{ Private} + 2.109 \text{ Sex} - 2.067 \text{ Minorw} \dots\dots 8$$

(-.277) (-.174) (-.199) (.107) (.087) (-.086)

R = 0.553 R² = 0.306 SEE = 1.316 F = 30.447 Sig. = 0.000

5th equation: This suggests that 24.6% of the variability of PsyStress variable can be explained by JobStress, JobSat and Single variables.

6th equation: It shows 50.1% of the variability of JobStress variable can be illustrated by JobChar, OrgPol, JobPer, IntPer, Age51, and Minorw variables.

7th equation: This indicates that 37.7% of the variability of JobSat variable can be explained by OrgPol, JobPer, IntPer, and OrgG variables.

8th equation: This suggests that 30.6% of the variability of JobPer variable can be described by variables OrgPol, IntPer, JobCha, Private, Sex, and Minorw.

which are able to be used for path analysis as follows:

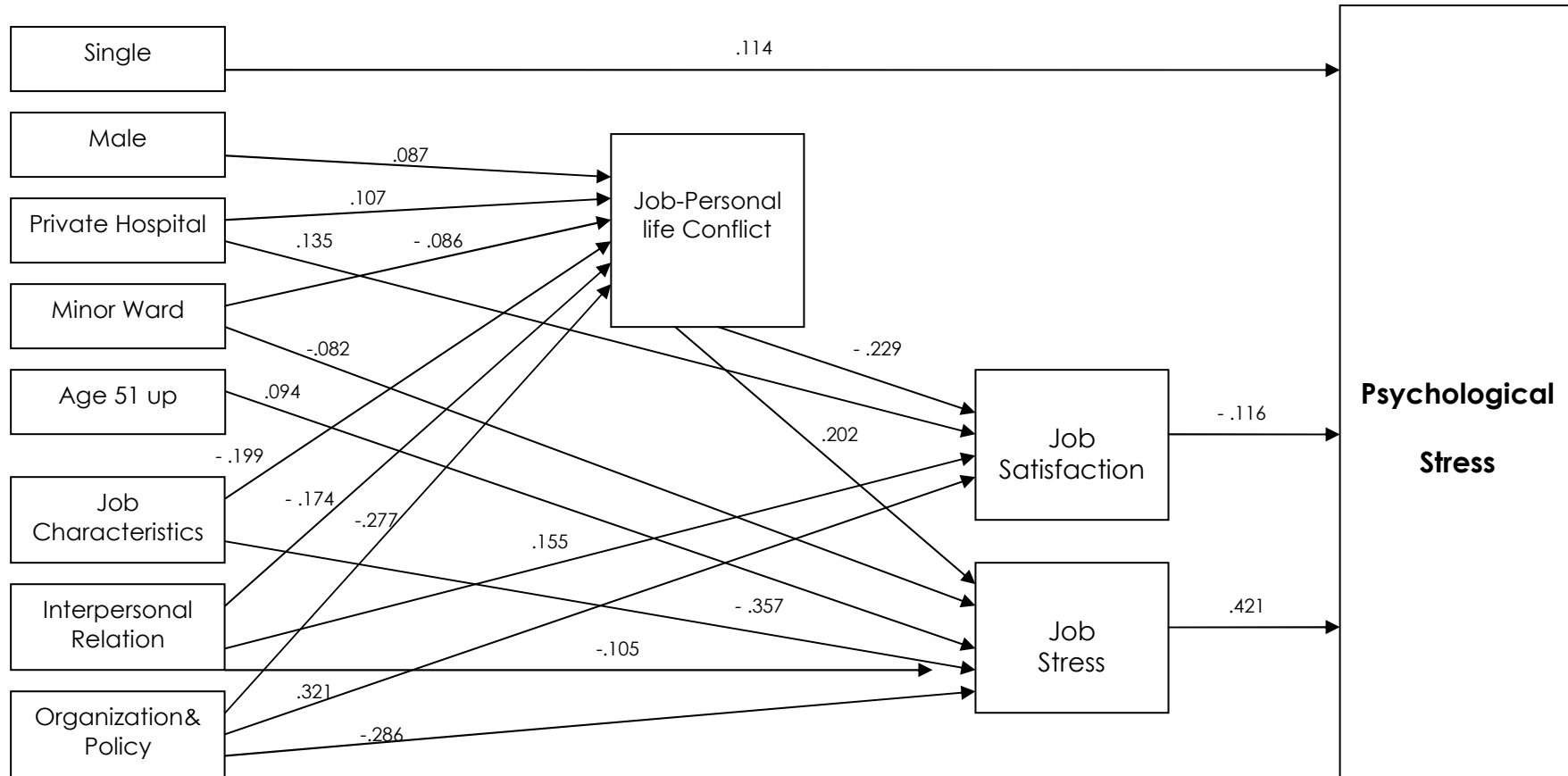


Figure 4.1 Path Analysis

Table 4.30 Direct Effect, Indirect Effect and Total Effect of Path Analysis

	Job-personal Conf.			Job Satisfaction			Job Stress			Psychological Stress		
	DE	IE	TE	DE	IE	TE	DE	IE	TE	DE	IE	TE
Single										0.114		0.114
Male	0.087		0.087		-0.020	-0.020		0.018	0.018		0.010	0.010
Private	0.107		0.107	0.135	-0.025	0.110		0.022	0.022		0.012	0.012
Minor Ward	-0.086		-0.086		0.020	0.020	-0.082	-0.017	-0.099		-0.044	-0.044
Age 51 Up							0.094		0.094		0.040	0.040
Job Characteristic	-0.199		-0.199		0.046	0.046	-0.357	-0.401	-0.758		-0.324	-0.324
Inter-personal Rel.	-0.174		-0.174	0.155	0.040	0.195	-0.105	-0.035	-0.140		-0.080	-0.080
Org. Policy	-0.277		-0.277	0.321	0.063	0.384	-0.286	-0.056	-0.342		-0.185	-0.185
Job-personal Conf.				-0.229		-0.229	0.202		0.202		0.109	0.109
Job Satisfaction										-0.106		-0.106
Job Stress										0.421		0.421
R ²		0.306			0.377			0.501			0.426	

Note: DE = Direct Effect, IE = Indirect Effect, TE = Total Effect

Conclusion from Path Analysis can be described as follows: (Figure 4.1 and Table 4.30)

From Path Analysis, there are 4 variables having direct effect on job satisfaction and 6 variables having indirect effect on job satisfaction. The total effect is equal to 0.377 affecting job satisfaction of doctors which can be put in order as follows:

Direct Effect: 1) organization and policy may increase job satisfaction of doctors (0.321) 2) job-personal life conflict probably increase job satisfaction of doctors (-0.229) 3) interpersonal relation possibly increase job satisfaction (0.155) and 4) doctors working in private hospitals show higher level of job satisfaction than that of doctors working in government hospitals (0.135).

Moreover, job satisfaction has direct effect on psychological stress to the extent that higher degree of job satisfaction can reduce psychological stress of doctors (-0.116).

Factors affecting job stress: From Path Analysis, there are 6 variables having direct effect and another 6 variables having indirect effect on job stress. The total effect is equal to 0.501 and can be put in order as follows: (Figure 4.1 and Table 4.30) 1) good job characteristics likely reduce job stress of doctors (-0.357) 2) good organization and policy tends to reduce job stress (-0.286) 3) job-personal life conflict may increase job stress (0.202) 4) good interpersonal relation tends to reduce job stress (-0.105) 5) age factor: doctors with 51 years of age or above show higher degree of job stress than that of those younger than 51-year-old doctors (0.094) and 6) doctors of minor wards

show lower degree of job stress than those working in major wards (-0.082). More importantly, job stress is the factor having most direct influence on psychological stress of doctors (0.421).

Factor influencing job-personal life conflict: From Path Analysis, this factor is another one directly influenced by certain variables and leading to problems in personal and family life. This factor itself is an intervening factor having an influence on job stress and job satisfaction and indirect effect on psychological stress (0.109). From the study, it indicates that the significant variables having an effect on job-personal life conflict can be sort out as follows: organization and policy, job characteristics, interpersonal relation, working in private hospital, male and minor ward.

It means that if doctors are working in good organization and policy (-0.277), with good job characteristics (-0.199) and good interpersonal relation (-0.174), these seemingly reduce job-personal life conflict. It is further found that doctors working in private hospital have higher degree of job-personal life conflict than that of those working in government hospitals and doctors of minor ward show lower degree of job-personal life conflict than that of those working in major ward and male doctors have higher degree of job-personal life conflict than that of female doctors.

In addition, job-personal life conflict also has direct effect on increasing of job stress (.202) and reducing job satisfaction (-.229).

4.6 Conclusion

4.6.1 Overall Picture and Future Plan: Career Planning as a Doctor

1) Demographic Profile: The sample group covers Thai physicians in all specialties both working in Bangkok and provincial area. From Table 4.1, the sample group consists of 253 male doctors (57.63%) and 186 female doctors (42.37%); most of which are in the age range of 30-35 year (28.93%), single 243 persons (55.35%), working in Bangkok 273 persons (62.19%) and provincial area 166 persons (37.18%), working in government sector 367 persons (83.59%) and in private sector 72 persons (16.40%).

The amount of income of most full time doctors (38.95%) is in the range of 40,001 - 70,000 Baht/month and most of those working part time (51.04%) can earn from part time works not exceeding 40,000 Baht/month. Further, about 13.67% of doctors can earn income from full time works more than one hundred thousand Baht/month while there are 7.19% of doctors that can earn income from part time works more than one hundred thousand Baht.

When working hour is taken into account, it indicates that 90% of full time doctor will work not more than 70 hours per week and 60.47% of doctors will additionally work part time for not exceeding 40 hours per week. Therefore, it is possible that most doctors work more than 100 hours per week if both of those working fulltime and part time are taken into account.

2) Job Satisfaction Mean: Questions with respect to "job satisfaction" (items 26.-29.), scale 1-

10, are as follows: 1) you are satisfied with your standard of patient care 2) you are satisfied with your current workload 3) you are satisfied with your current income 4) from the overall picture, you are satisfied with your current job. It is found that the mean for doctor of all specialties nationwide is equal to 6.28 (from the total of 10) which is in the medium level. Doctors having highest level of job satisfaction are pediatricians (6.84) and orthopedists are the group of doctors having lowest degree of job satisfaction (5.65) which is rather in the low level (Figure 4.2).

3) Job Stress Mean: Questions with respect to "job stress" (items 30. - 34.), scale 1-10, are such as: 1) your job interest is reduced by job stress 2) you cannot work efficiently due to job stress 3) you are thinking of resigning your work due to job stress 4) from the overall picture, you are stressful with your current job and 5) if you were able to flash back to the past, you would have not chosen to be a medical student etc. It is found that the mean of job stress of doctors of all specialties nationwide is equal to 4.54 where surgeons show highest score at 5.45 and psychiatrists show lowest score at 3.62 (Figure 4.2).

4) Job-Personal Life Conflict: The mean of all specialties is equal to 5.33 (scale 0-10) where surgeons show highest mean of job-personal life conflict (6.30) followed by orthopedists (5.88) and doctors of other filed of specialties (5.67). General practitioners show lowest mean of job-personal life conflict (4.90). The overall mean is therefore not considered high level which means that most doctors can moderately balance between job and personal matter (Figure 4.2).

5) Psychological Stress: is tested by applying Thai GHQ 28, a questionnaire consisting of 28 questions with total score at 28. Score will be marked as 0-0-1-1, that is, if, for each question, it is answered by choosing item 1 or 2, the score for that question is 0 and score 1 will be marked if otherwise choosing item 3 or 4. The threshold is 5/6 where score 6 or above will be deemed as abnormal. From the analysis, it indicates that the mean of psychological stress of all specialties nationwide is equal to 0.09 which is considered in normal level and it is also found that doctors of each specialty show that their psychological stress is within normal limit (Figure 4.2).

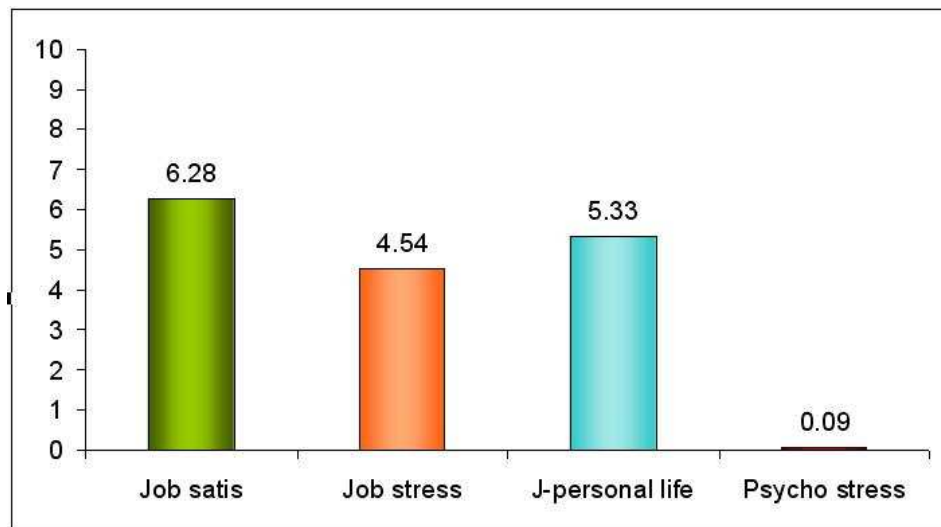


Figure 4.2 Mean of Job Satisfaction, Job Stress, Job-Personal Life Conflict and Psychological Stress

6) Government Sector VS Private Sector: From t-test analysis between doctors working in government sector and private sector, it appears that the former has lower degree of job satisfaction (mean=6.11) as opposed

to the latter (mean = 7.15) and the former also shows higher level of job stress and psychological stress than the latter (4.71 compared with 3.64) and (1.74 compared with 1.58), respectively (Figure 4.3).

In addition, it is also found that doctors working in government sector have different attitude from those working in private sector at a significant level toward the following: doctors working in private sector, as opposed to those working in government sector, show better attitude toward 1) job characteristics and salary 2) interpersonal relation and 3) organization and policy (Figure 4.3).

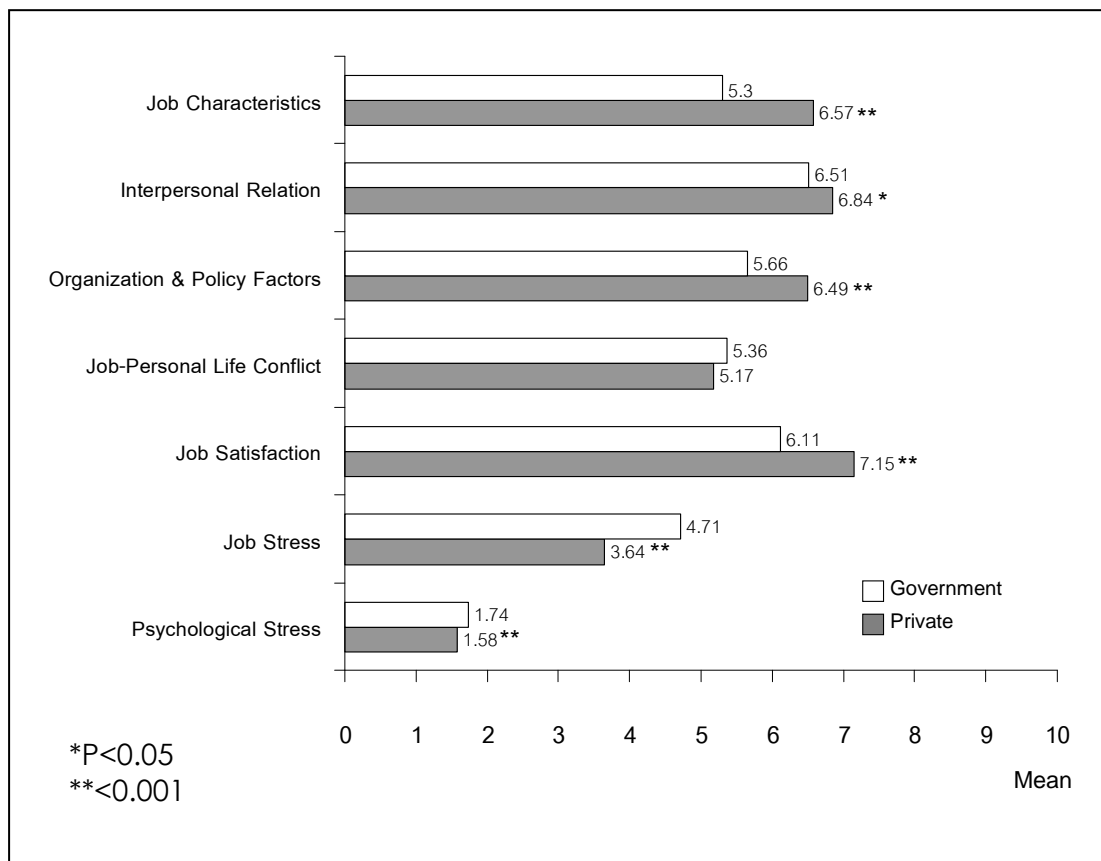


Figure 4.3 A Comparison between Physicians Working in Government and Private Hospitals (All Specialties)

If sorting by field of specialty, it is found that doctors working in private hospitals as internists, orthopedists, ophthalmologists and otolaryngologists, psychiatrists, GP and other specialties show better attitude toward job characteristics than those of the same field of specialty working in government hospitals.

The internists, obstetricians and gynecologists and psychiatrists working in private hospitals show higher degree of job satisfaction than that of the same working in government hospitals. The internists, orthopedists, ophthalmologists and otolaryngologists working in private hospitals show better attitude toward organization and policy than that of the same working in government hospitals while orthopedists in government hospitals have higher degree of job stress and interpersonal conflict with colleagues and patients than that of the same in private hospital (Figure 4.4).

Variables	MED	SUR	OBS	PED	ORTHO	EENT	PSY	GP	Other
Job Characteristics	G<P	-	-	-	G<P	G<P	G<P	G<P	G<P
Interpersonal relation	-	-	-	-	G<P	-	-	-	-
Organization & policy	G<P	-	-	-	G<P	G<P	-	-	-
Job-personal life conflict	-	-	-	-	-	-	-	-	-
Job satisfaction	G<P	G<P	-	-	-	-	-	G<P	-
Job stress	-	-	-	-	G>P	-	-	-	-
Psycho stress	-	-	-	-	-	-	-	-	-

Figure 4.4 A Comparison between Government Physicians and Private Physicians Divided by Specialty

Note: G = working in Government Hospital

P = working in Private Hospital
 EENT = Ophthalmology and Otolaryngology
 Psy = Psychiatry
 Sur = Surgery
 Other = family clinical practice, rehabilitation medicine,
 anesthesiology and radiology
 Med = Internal Medicine
 GP = General Practice
 Ortho = Orthopedics
 Ped = Pediatrics
 OBS = Obstetrics and Gynecology

7) Bangkok and Provincial Area: From t-test analysis between doctors working in Bangkok and provincial area, it is found that doctors working in Bangkok show higher degree of job satisfaction (mean =6.4) than that of those working in provincial area (mean=6.09) with statistical significance (p<0.05) while there is no difference between the two groups with respect to job stress and psychological stress. It is further found that the two groups show significant difference in attitude toward interpersonal relation and organization and policy (p<0.05) which means that doctors working in Bangkok have better interpersonal relation and better attitude toward organization and policy than those of doctors working in provincial area (Figure 4.5).

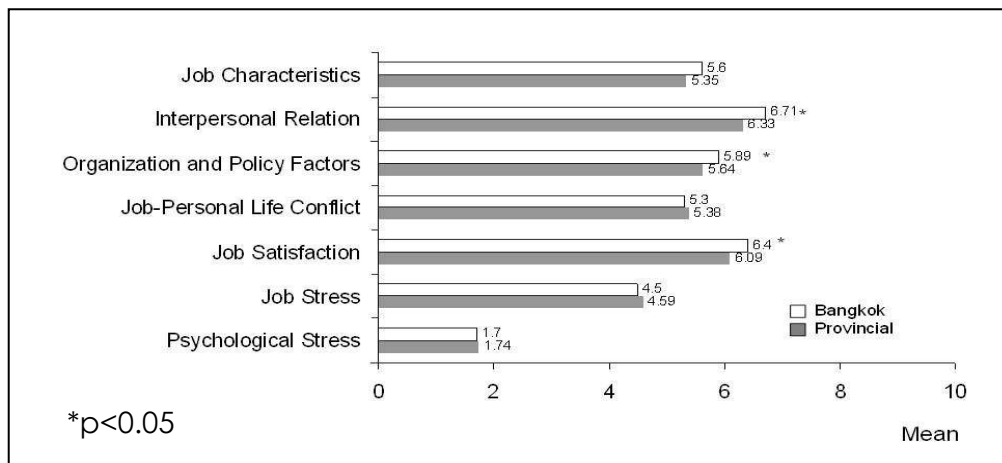


Figure 4.5 A Comparison between Physicians Working in Bangkok and Provincial Areas (All Specialties)

The study done by focusing on each specialty shows that surgeons in Bangkok have higher degree of job stress and job-personal life conflict than that of those working in provincial area at a significant level and at the same time, show lower degree of job satisfaction and poorer attitude toward organization and policy than those of doctors working in provincial area.

Pediatricians in Bangkok have higher degree of job satisfaction and better attitude toward organization and policy than those of the same working in provincial area while psychiatrists in Bangkok show higher level of satisfaction toward organization and policy than that of those working in provincial area (Figure 4.6).

Variables	MED	SUR	OBS	PED	ORTHO	EENT	PSY	GP	Other
Job Characteristics	-	-	-	-	-	-	-	-	-
Interpersonal relation	-	-	-	-	-	-	-	-	B>P
Organization & policy	-	B<P	-	B>P	-	-	B>P	-	-
Job-personal life conflict	-	B>P	-	-	-	-	-	-	-
Job satisfaction	-	B<P	-	B>P	-	-	-	-	-
Job stress	-	B>P	-	-	-	-	-	B>P	-
Psycho stress	-	-	-	-	-	-	-	B<P	-

Figure 4.6 A Comparison between Physicians Working in Bangkok and Provincial Areas Divided by Specialties

Note: B = working in Bangkok Area
P = working in Provincial Area

EENT = Ophthalmology and Otolaryngology
 Psy = Psychiatry
 Sur = Surgery
 Other = Family Medicine, rehabilitation medicine, anesthesiology and radiology
 Med = Internal Medicine
 GP = General Practice
 Ortho = Orthopedics
 Ped = Pediatrics
 OBS = Obstetrics and Gynecology

8) Job Planning: It is found that most doctors do not have a plan for changing their job (40.55%) and also desire to work in their organization for the entire job tenure (30.75%). However, certain number of doctors (28.70%) has a plan to resign from their job e.g. leaving for work in private sector or other career etc. (Table 4.13).

Table 4.31 Table Demonstrating Number and Percentage of Doctors with Their Career Plan

Alternatives	Number	Percentage
1. currently not intend to change work place	178	40.55
2. intend to work here for the entire job tenure	135	30.75
3. will resign some time	64	14.58
4. will resign for working in private sector	18	4.1
5. others	17	3.87
6. will resign within 3 years	14	3.19
7. will change to other career other than doctor	13	2.96
Total	439	100.00

9) Path Analysis: According to Path Analysis, it can be summarized as follows:

Single doctors have higher degree of stress than non-single doctors which include married and divorced doctors. Male doctors have higher degree of job-

personal life conflict than female doctors and doctors being 51 years of age or above have higher level of job stress than those of younger age.

Doctors working in private hospitals show higher degree of job-personal life conflict than that of those working in government hospitals but the former has higher level of job satisfaction than that of the latter.

Doctors of minor ward have lower degree of job-personal life conflict and job stress than those of doctors of major ward.

Good job characteristics will reduce job-personal life conflict and job stress of doctors.

Good interpersonal relation can reduce job-personal life conflict and job stress of doctors and also increase their job satisfaction.

Good organization and policy will reduce job-personal life conflict and job stress of doctors and also increase their job satisfaction.

Job-personal life conflict can increase job stress and on the contrary, decrease job satisfaction.

Job satisfaction will decrease psychological stress of doctors and on the contrary, job stress can increase their psychological stress.

4.6.2 Doctors' Opinion toward Organizational Policy and Public Health System of Thailand (Open-Ended Question)

From the questions freely responded by doctors, problems in organization and public system of Thailand have been reflected as follows:

1) Government policy: Doctors are confronting problems from 30 Baht for All Diseases Scheme and of the

view that this free medical care should be canceled and it should turn back to the previous system "Social Welfare System". This is because the new scheme has created wrong attitude among the patient by neglecting their personal health care and disease prevention as they think that they can go to the doctor for free. As a result, the hospital that should be secondary and tertiary medical facilities has become a place giving primary health care and thus led to unnecessary burden on doctors. Respondents gave the view that public sector should pay more attention to preventive system than curative system. Public should be educated with personal health care and partly responsible for their illness. That is, co-payment system should be adopted according to each patient's status where doctor will be allowed to properly choose drugs or medical procedures. Furthermore, disease resulted from the own fault of the patient such as accident from intoxication, cirrhosis from alcoholism, diseases resulted from smoking etc. should be partly responsible by the patient in terms of medical expenses in order to reduce burden on unnecessary medical care, to use only necessary drugs and to encourage personal health awareness.

Some respondents said that the government should specifically introduce health tax system where all citizens in the country are required to pay health tax according to one's income amount that can help fill the gap between the rich and the poor. They also wish to see all health insurance systems including social security system, civil service system and social welfare system or 30 Baht Scheme equally providing the same coverage in terms of standard of treatment and patient care, drug

list and availability for all diseases. Family or community doctor system should be encouraged for the purpose of primary care and health promotion before patient are referred to hospitals which are supposed to be in tertiary care system. If the former system can effectively screen patient, this will help relieve the burden of doctors from the overall perspective. In addition, doctors also suggested that the government should provide protection measures for fairly preventing doctors from being sued as well as professional insurance and statutory provisions to assure those doctors who have reasonably and professionally applied medical practices but there is unavoidable force majeure etc.

This current public health system in Thailand has caused frustration and stress or even resistance among doctors toward civil service system as this system unnecessarily increases their workload. Many respondents noted that "if this universal coverage system is really an answer why there are so many complaints from both patients and doctor in this system and if this system really works, why the government does not allow patients to access proper treatment and drugs for their diseases without limiting medical expenses per visit at 700 Baht". Many doctors said that public health system in Thailand has been exploited too much for political purpose by politicians without adequate study before implementing the policy as to its cost effectiveness or feasibility while the organization still has injustice and prejudice. The government should focus on increasing number of doctor of quality and morality. Distribution of doctors has to be done fairly and income should be increased in proportionate to workload.

2) Internal system of an organization: Doctors have feeling of lack of independency in their work or decision making as to method of providing medical treatment or drug choice etc. They also view that the organization is lack of "justice" and full of favouritism and connection. Young staffs have not been adequately heard. The respondents wish to see that doctors at all levels participate in making decision about works and organizational matters such as promotion or transfer, career path, patient transfer, drug prescription and fair workload etc.

Doctors also mentioned about modification to administrative system where those who are not a doctor may participate in administrative works as doctor has to provide treatment for patient and may be not good at such administrative works. The organization is urged to give adequate care for welfare to be provided for doctor e.g. doctor's room or house etc.

3) Conflict in workplace: Favouritism in an organization has led to conflict among doctors. Many said that they would like their professional fellows to have respect for each other's right and field of specialty. They should work in team. More importantly, they wish to see the one who is really determined and just to be their leader. One of the respondents said that "good leader should be able to create concrete motivation for one's subordinates and not only by words or paper. Spirit should be contributed by all including the one giving command."

4) Job characteristics: Workload and income are the two issues mostly concerned by doctors. Many respondents are in the agreement that salary should be

increased to reduce gap between government sector and private sector and it should be adequate for living expenses in order that they do not have to work part time. With respect to workload and working hours, they think that they are too much and wish public sector and organization should have regulation to limit working hours per day for doctors and any doctor having worked for overnight shift should be allowed to rest for the next day.

5) Job-personal life conflict: Because of too much workload, the time for family and personal life is depleted. The respondents stated that "rest time should be the real vacation not just a waiting time for work call". Many said that they have to work overtime which exploits their personal time and leads to stress. This situation will continue as long as steps have not been taken by the authority.

On the contrary, some physicians said that physicians should realize who they are and what profession they have honoured. They should adapt their attitude, pay more attention to their works and not look at the patient as if they are begging for service. These should help physicians to enjoy more with their works.

CHAPTER 5

CONCLUSION, DISCUSSION AND RECOMMENDATIONS

This chapter involves conclusion of research on Professional Characteristics and Psychological Stress among Physicians in Thailand. This research is both qualitative and quantitative study mainly aiming at 1) exploring prevalence of psychological stress, job stress, job satisfaction and job-personal life conflict of Thai doctors from the overall picture and sort by area of specialty 2) comparing job attitude and psychological stress between doctors working public and private sector and working in Bangkok and provincial area 3) finding relation between factors affecting job-personal life conflict, job satisfaction, job stress and psychological stress of doctors details of which are as follows:

5.1 Conclusion

5.2 Discussion and Recommendation

5.1 Conclusion

The research result on prevalence of psychological stress indicates that there is no psychological stress among doctors which means that Thai doctors have their mental health within normal limit while job stress is found to be in medium level (45.4%). Surgeons show highest level of job stress and psychiatrists and ophthalmologists and otolaryngologists show lowest level of job stress. With respect to job satisfaction, the

overall is within medium level (62.8%) and job-personal life conflict lies in medium level (53.3%).

Factor most affecting job stress is job characteristics followed by organisation and policy, job-personal life conflict, interpersonal relation, age and specialty, respectively. Factor mainly influencing job satisfaction is organisation and policy and job-personal life conflict followed by interpersonal relation and working in private hospital, respectively. Organisation and policy has an influence upon job-personal life conflict to the highest extent followed by job characteristics and interpersonal relation while variables on demographic profile e.g. gender, nature of organisation (public/private) and field of specialty show less respective influence. Moreover, job stress has significant effect on psychological stress to the extent that if job stress is high, it will create psychological stress and tends to cause stress but job satisfaction has negative impact to such psychological stress, that is, doctors with high level of job satisfaction will have low level of psychological stress.

Doctors working in public sector have higher level of job stress and psychological stress than those working in private sector and at the same time doctors working in private sector have higher level of job satisfaction than those working in public sector and also show better attitude toward job characteristics and organisation and policy and enjoy better relation with colleagues and patients than those working in public sector. As far as the place of work is concerned between those working in Bangkok and provincial area, it appears that there is no difference of job stress and psychological stress between

doctors working in Bangkok and provincial area. The former shows better job satisfaction than the latter and it is also the same for relation with colleagues and patients and attitude toward organisation policy.

5.2 Discussion and Recommendations

From the research results obtained from the sample group of Thai doctors, it is found that Demographic variables i.e. age, gender, marital status, field of specialty and original affiliation (public/private) can have an impact on job-personal life conflict, job stress, psychological stress and job satisfaction of doctors. Results from Path Analysis indicate that male tends to have greater job-personal life conflict than female and this conflict can directly have an effect on job stress and job satisfaction. From this research, the fact that male has greater job-personal life conflict than female is the result of working system and cultures in Thailand where male is encouraged to be a family leader to take charge of cost of living and family matters and thus is driven to earn adequate income for cost of living and for one's status.

Working nature of doctor in Thailand also tends to place more responsibility on male doctor than female one in terms of administrative works. Due to workload and long working hour affecting job-personal life conflict, it is not beyond expectation that why male has to face with conflict on time allocation more than female. When disproportionate remuneration is also taken into account from doctor's perspective, this situation is more likely to significantly cause stress which is in line with the

study done by Dowell, Westcott, McLeod and Hamilton (2001: 540-543). However, many papers differently found that female show greater job-personal life conflict than male (Bovier and Perneger, 2003: 299; Gjerberg, 2003: 1327-41; Rovik et al., 2007: 662-671) as they have to play two roles, at home and at work, at the same time especially those having a child or being married will be more likely to experience job-personal life conflict than male doctors.

Single or divorced doctors suffer higher degree of psychological stress than married doctors. This is in line with a study done in Great Britain which found that single or divorced doctors had 2 times higher degree of psychological stress than married doctors or those living in couple (Calnan et al., 2001: 499-507) as the latter has another person to share problems with and will feel of more psychological safety. These characteristics can be varied due to culture of each society. It also depends on how long such stress has been accumulated at which degree. If it has not reached critical level, family can still mentally support them. The result in Thailand seems to be different from most papers (Rennert, Hagoel, Epstein and Shifroni, 1990: 96-99; Mira, Vitaller, Buil, Aranaz and Rodriguez-Marin, 1994: 1134-40; Preston, 1995: 149-65; Mirowsky, 1996: 362-80; Firth-Cozens, 1998: 1647-51; Chambers, George, McNeill and Campbell, 1998: 1501-4) as it finds that married person has greater stress than single one due to role conflict between job and family especially married female will be even more likely to suffer from stress.

Age can significantly have an effect on job stress for those being 50 years of age or above due to responsibility in both medical service and administrative works or paper works. As a senior staffs, they still have to work hard with more responsibility according to their seniority and position and thus are kept under stressful condition of work. This corresponds with the study done by Mirowsky and Sobreques J showing that doctors being at the average age of 40 years old or above will develop job burnout and job stress at 2 times greater extent than young staff. This stress will increase continuously until retirement for both male and female doctors (Mirowsky, 1996: 362-380; Sobreques et al., 2003: 227-233). In particular, age and workload are co-factors in increasing remarkable risk for stress (Stirling, Wilson and McConnachie, 2001: 456-460).

Results from an analysis indicates difference between doctors working in public sector and private sector and doctors working in Bangkok and provincial area that doctors working in public sectors tend to significantly have higher degree of job stress and psychological stress than those working in private sector while job satisfaction of the former is also found to be less than that of the latter as the former has to work for a longer working hour with night shift, on-call shift and has to be responsible for larger number of patient while an income is significantly lesser than that of those working in private sector. This is another cause of brain drain from public sector to private sector. The Ministry of Public Health (National News Bureau of Thailand, Public Relations Department, 2008) analysed that if doctors resign for working in private sector,

they will gain additional income of 50,000 baht/month. In 2008 there were 500 doctors leaving their jobs which was 4 times higher than the figure in 2002 and doctors working in provincial area shared such a greater number than those working in Bangkok. It is in line with studies done in Turkey (Ozyurt, hayran and Sur, 2006: 1-9) and in Finland (Olkinuora, Asp, Juntunen, Kauttu, Strid and Aarimaa, 1990: 81-86) focusing on comparison of job satisfaction and stress of doctors working in government hospital and in private hospital.

Doctors in Bangkok has greater job satisfaction than doctors working in provincial area. This is not mainly resulted from medical system issue but rather inequality existing in the society. When capitalism has become dominate, it has changed people's way of life and attitude. From the qualitative data, doctors admitted that no one would like to stay far away from their home or civilization. No one would like to live rural area. Some may follow their favoured life style in living in the city. These are the reasons why there is less number of doctors in provincial area while number of population has become larger. And therefore number of doctors is not adequate while workload has become greater, it will therefore cause unavoidable stress among doctors. In this regard, the measure requiring medical student to reimburse financial subsidy by working in provincial area for 3 year may be not a long term solution. Chairman of the Rural Doctor Club (Khom Chud Luek, 2008) suggested that salary for doctors working in rural area should be more than those working in the city to provide incentive. However, the researcher is of the view that monetary incentive is not the sole factor for appropriate

geographic distribution of doctors if social development has been unequally done. This crisis needs educational and economic system to participate in adequately and equally distributing development and education opportunity to all over the country.

Job satisfaction of all fields of specialty in public and private sector and in Bangkok and provincial area is found to be in medium low level (62.80%) where doctors in provincial area show lower satisfaction (60.90%) than those working in Bangkok (64%) and doctors working in public sector show lower satisfaction (61.10%) than those working in private sector (71.5%); which are not different from many countries in the world where job satisfaction has always been in not a high level (Asch, Jedrziwski and Christakis, 1997: 1129-36; Pousette and Hanse, 2002: 229-250; Bovier and Perneger, 2003: 299; Visser et al., 2003: 271-275; McManus, Keeling and Paice, 2004: 29). However, analysis on job satisfaction involves complex and related variables (multi-dimension) and cannot be done in isolated aspect. This research shows that job-personal life conflict has a direct impact on job satisfaction resulted from other 6 predictors considered as direct effect.

Researches done in various countries underlined non-monetary incentives e.g. autonomy, decision making, organisation and government policy in favour of work of doctor, promotion, fairness in organisation, job security, opportunity for further study or study visit etc. which play more important role than monetary incentives (Fottler, Shewehuk and O'Connor, 1998: 223-247; Janus, Amelung, Michael, Gaitanides and Schwartz, 2007: 357-365). However, other papers supported that

monetary incentives has greater influence upon job satisfaction and job stress (Hemenway et al., 1990: 1059-63; Hillman, 1991: 138-46; Hadley and Mitchell, 1997: 99-111; Hillman, Pauly and Kerstein, 1998: 86-92; Grumbach et al., 1998: 1516-21). This research done among doctors support both approaches, monetary and non-monetary incentives where the top third predictors influencing job stress are as follows:

1) Job Characteristics (means workload, income, work autonomy, chance of further knowledge and skill development, working obstacles)

2) Organisation and Policy (means support from organisation, job security, health insurance scheme, fear of being sued, organisational fairness, treatment standard, good attitude toward organisation and public health system of Thailand) and

3) Job-personal life conflict (means adequate personal time, family time and vacation without interference, impact of work on family life) followed by

4) Interpersonal relation (means satisfaction toward interpersonal relation with doctor and non-doctor, with patients and relatives, patient's expectation) and this research also corresponds with Model of Job Demand Control of Karasek stating that these factors have an effect on job satisfaction and physical and mental health of workforce (Karasek, 1979: 28-307).

From the open ended question and qualitative data, it positively reveals that monetary incentives alone cannot establish job satisfaction among doctors if non-monetary incentives are not adequately introduced especially in terms of organisation and government policy and relation at work which play a key role against job

satisfaction of doctors. This is in line with researches done in other countries (Richardson and Burke, 1991: 1179-87; Freeborn, 2001: 13-19; Bovier and Perneger, 2003: 299; Janus, Amelung, Gaitanides and Schwartz, 2007: 357-365) which found that doctors will give priority to non-monetary incentives at the same level as monetary incentives especially those relating to good relationship with colleagues and patients, autonomy, fairness, participation in important matters, recognition from supervisor, knowledge sharing which all lead to sound working environment and benefit to public health service as a whole.

Doctors in the sample group are also of the view that they feel of job insecurity and fear of being sued and thus are reluctant to make critical decision in treating the patient. Patients may be treated in delay and transferred more or even denied due to such fear. Doctor sue will cause more difficulty for doctor and partly result in job stress. Many doctors wish to have them under professional insurance coverage and urge the government to seriously deal with this problem by enacting the law that can protect doctors to allow them to work more flexibly and safely. This is in harmony with the study on job satisfaction of doctors in USA (Pathman, Konrad, Williams, Scheckler, Linzer and Douglas, 2002: 593) and other studies (Konrad et al., 1999: 1174-82; Williams et al., 1999: 1140-54; Visser et al., 2003: 271-275) that requires the government to take step in dealing with this matter as well.

The researcher views that medical fallacy will always make the public to be in favoured of the patient side rather than doctor's, although in fact, both doctors

and patients are all victims of the failed public health system. Although the government has tried to provide statutory protection but it will not solve the original problems. Certainly, treatment error will reasonably cause doctor to feel guilty and isolated saved for the fear of being sued, this can significantly create stress against doctors today. The research also finds that almost 30% of doctors have a plan for resignation.

Job-personal life conflict this factor is remarkably interesting as the analysis surprisingly shows relationship with other predictors. The author views that if doctors can balance between job and personal life appropriately, job satisfaction should be increased and no stress would be anticipated as this factor has direct impact on stress and job satisfaction at statistically significant level. If doctors have adequate personal time and are not called during their rest while their works do not disturb family matters and time, it would help reducing job stress. Good administration and policy and appropriate job characteristics can also help relieving this stress. This research results are in line with those papers internationally published (Wah and Fong, 1990: 667-72; Richardsen and Burke, 1991: 1179-87; Vanagas, Bihari-Axelsson and Vanagiene, 2004: 1014-18) that supported that every workmen has to have adequate time for rest or for personal matters to maintain good quality of life. Inability to balance job and personal life of doctor will ultimately be a major cause of job stress.

This research also find difference between doctors working in public sector and private sector that the latter shows greater job-personal conflict than the

former due to nature of their works especially requirement on providing services which is among the top priorities of private hospital. Patient can specifically ask for certain doctor and such doctor will be on 24-hour call although he/she is not being on the shift or is off the work. On the contrary patient cannot specifically choose doctor and the latter works on shift schedule basis. This is the reason doctors working in private sector will be more disturbed than those working in government hospital during their personal time.

Predictor affecting job satisfaction of doctor is nature of an organisation (public /private) and Predictor influences job stress is Age and Specialty shows not significant impact compared with other factors. From the analysis, doctors working in public sector show lower job satisfaction while job stress and psychological stress are higher than those of doctors working in private sector. This corresponds with the survey done in Switzerland (Bovier and Perneger, 2003: 299-305) and New Zealand (Dowell et al., 2001: 540-544). Speciality also has an effect on job stress as those working in major word with greater number of sub-specialties have to deal with larger amount of patients and workload and thus are more likely to suffer from job stress than those working in minor word with less number of sub-specialties and patients and workload. This is the same for the study done in USA showing that surgeons showed higher degree of stress than other specialists (Yost, Eshelma, Raoufi and Abouljoud 2005: 1399-401).

Limitations of this research are about different job characteristics of doctor in each specialty, difference among organisations and place. It is also a cross

sectional study where the answer to self-reported questionnaire, THAI GHQ-28, will only be focused on basic mental health of the last three weeks. This requires analysis be done prudently. From the results of analysis of GHQ-28 or basic psychiatric problems screening test, although Thai doctors are found to have normal mental health and the average value of job stress is about 45.4%, it is possible that although job satisfaction of doctors is at medium level (62.8%) it can still maintain spirit of them in work and if the government and organisation can promote such spirit to a higher level, it may be able to reduce job stress and turnover of doctors.

In fact although mental health of Thai doctors was within normal limit during the time of survey but job satisfaction was not that high and job stress inevitably tends to increase according to an analysis on qualitative data. The doctors themselves are well aware that they have various tasks to deal with while error is not acceptable. The excessive workload and job stress will still exist and their lives will go on in such a routine manner and if the government fails to seriously and frankly address these problems, it will be possible that job stress will accumulate and the overall public health system will be ultimately affected.

Therefore, this research is intended to encourage public sector to place emphasis on monetary and non-monetary incentives in order to create motivation for medical professional. To the least extent, this research finds that the government should pay more attention to how to decrease working hour, relieve excessive workload, increase income, promote participation in organisation

development and allow doctors to be heard as to administration of patient and public health system which will bring about job satisfaction of doctors. If doctors feel of non-secured in their career and developed job stress, it will not adversely affect only on the doctor but also on the public to the extent that they may start to view that hospital is not safe anymore. These are critical for new generation of doctors to come into the system and for saving human resource by decreasing brain drain or turnover that may result in indefinite shortage of professional workforce.

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APPENDIX

* Job Nature, Interpersonal Relation, Organization's Policy and Job Satisfaction*

Please answer the following by marking ✓ 1 = Totally disagree 10 = Totally agree										
1. You think you get too small amount of salary.	1	2	3	4	5	6	7	8	9	10
2. You think your workload per week is too much .	1	2	3	4	5	6	7	8	9	10
3. You think your paper works including article, research, lecture are too much .	1	2	3	4	5	6	7	8	9	10
4. You think number of patient in your responsibility is too many .	1	2	3	4	5	6	7	8	9	10
5. You face problem in referring patient.	1	2	3	4	5	6	7	8	9	10
6. You don't have independency in choosing mode of treatment and/or prescription.	1	2	3	4	5	6	7	8	9	10
7. Nature of your work prevents you from developing your professional knowledge.	1	2	3	4	5	6	7	8	9	10
8. You fear pitfall in your treatment.	1	2	3	4	5	6	7	8	9	10
9. You are satisfied with your relationship with doctor colleagues.	1	2	3	4	5	6	7	8	9	10
10. You are satisfied with your relationship with other colleagues e.g. nurse, pharmacist and other hospital staffs.	1	2	3	4	5	6	7	8	9	10
11. You are satisfied with your relationship with patients and their relatives	1	2	3	4	5	6	7	8	9	10
12. You think patients expect too much for treatment result.	1	2	3	4	5	6	7	8	9	10
13. You fear being sued by patient resulted from your treatment (as there is no appropriate policy and just statutory provision.)	1	2	3	4	5	6	7	8	9	10
14. Your organization does not provide support for your further study.	1	2	3	4	5	6	7	8	9	10
15. Job nature and working environment pose risks on your health.	1	2	3	4	5	6	7	8	9	10
16. Universal health coverage (30 Baht for All Diseases Scheme) has caused more workload.	1	2	3	4	5	6	7	8	9	10
17. Your hospital has fair working system (e.g. compensation, promotion etc.)	1	2	3	4	5	6	7	8	9	10
18. Your hospital has standards for rendering medical services.	1	2	3	4	5	6	7	8	9	10
19. In general, you have good attitude to your hospital.	1	2	3	4	5	6	7	8	9	10
20. In general, you have good attitude to public health system in Thailand.	1	2	3	4	5	6	7	8	9	10

Please answer the following by marking ✓ 1 = Totally disagree 10 = Totally agree										
21. You have adequate personal time (e.g. hobby, social life).	1	2	3	4	5	6	7	8	9	10
22. You have enough time for your family.	1	2	3	4	5	6	7	8	9	10
23. You have adequate vacation.	1	2	3	4	5	6	7	8	9	10
24. You are bothered by work matter (e.g. emergency call) even in your personal time.	1	2	3	4	5	6	7	8	9	10
25. Your family is affected from your too much working.	1	2	3	4	5	6	7	8	9	10
26. You are satisfied with your standards of patient care.	1	2	3	4	5	6	7	8	9	10
27. You are satisfied with your current workload.	1	2	3	4	5	6	7	8	9	10
28. You are satisfied with your current income.	1	2	3	4	5	6	7	8	9	10
29. <i>In general</i> , you are satisfied with your current job.	1	2	3	4	5	6	7	8	9	10
30. Your interest in work decrease due to job stress.	1	2	3	4	5	6	7	8	9	10
31. You cannot work at full performance due to job stress.	1	2	3	4	5	6	7	8	9	10
32. You think of resignation due to job stress.	1	2	3	4	5	6	7	8	9	10
33. <i>In general</i> , you feel stressful with your current job.	1	2	3	4	5	6	7	8	9	10
34. If you have a time machine, you would have not chosen to be a medical student	1	2	3	4	5	6	7	8	9	10

35. How is your plan to work in “Doctor” career?
 1. Intend to work here for the entire job tenure 2. Will resign within 3 years
 3. Will resign some day 4. Still don't have an idea of changing work place
 5. To change to other career 6. To resign to work in private practice within.....years
 7. Other, please specify.....

36. If you can change your current **organization's policy** or **public health policy** of Thailand for **1 thing**, what do you want to change the most?.....

37. Recommendations (please describe freely)

BIOGRAPHY

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B.A. Bachelor of Arts (English)
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