Anxiety and Mental Health of Software Professionals and Mechanical Professionals

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ABSTRACT: *The present study aims at understanding the dimensions contributing to the well-being of software professionals and mechanical professionals. The study aims to find out the level of anxiety and mental health of software and mechanical professionals. And as we know high level of anxiety may lead to mental illnesses.Software professionals' environment of job is highly time-bound, client-concerned and technology concentrated. The trends in turn, attached with many factors, contribute to high anxiety. These factors are extremely diverse, including change of technology, client communication, fear of uselessness, family support, long working hours, and work overload etc. This study explores the nature of anxiety amongst software professionals and Mechanical professionals, and activities to identify the key factors responsible for producing anxiety amongst professionals, which limit their job functionality and overall efficiency. It will be earnest for us to study the level of anxiety experienced by software professionals so that we can detect the mental illnesses early and provide better intervention programmes. The sample for the present study includes 100 professionals 50 software and 50 mechanical professionals of both sexes. The sample of software professionals is drawn from Bangalore IT companies and bank such as Cambridge Investments Services, Fidelity, ANZ SONATA, Exultant and i-Flex. On the other hand the sample of mechanical professionals was drawn from Jindal Industry Hospet, and Railway workshop Hubli Karnataka State, India. The age of the sample group was between 23 to 30 years.The results revealed that software professionals differed in the level of anxiety when compared with mechanical professionals. But significant relations were found in only psychological dimension of mental health not in physical dimension. The obtained 't' value for SCAT (anxiety) was 2.26 and 'p' value was 0.02 which is significant at 0.01 level and on the other hand the 't' value for PGI Health Questionnaire N.1is 1.15 for physical dimension and 1.97 for psychological dimension, and 'p' value is 0.25 which is significant at 0.01 level for psychological dimension but 'p' value of 0.12 for physical dimension is not significant.*

KEY WORDS : *anxiety, mental health, mechanical professionals' and software professionals,*

I. INTRODUCTION

Occupational anxieties such as severe resentment, impractical expectations from superiors, being achievement oriented, lack of job safety, and the inability to accept failure have led to a host of psychological difficulties among software professionals. Clinical psychologists say that, people working in the field of information technology (IT) go through a lot of anxiety, depression and loneliness because of their work environment and often display feelings of inadequacy, lowered self-esteem and dissatisfaction. This reflects itself in the form of social, marital and sexual problems. Distinctly from working with the individual to treat the psychological concerns of IT professionals, it is also essential to address the organization of a company.Some of the methods that can be used to help professionals overcome stress and help them lead a balanced life are relaxation training, cognitive therapy, and assertiveness training. Long working hours, stress and pressure at work, night shifts, and lack of sleep can lead to various mental health and physical problems. Anxiety is an unpleasant state of inner turmoil, often accompanied by nervous behavior, such as pacing back and forth, somatic complaints and rumination. It is the subjectively unpleasant feelings of dread over something unlikely to happen, such as the feeling of imminent death. Anxiety is not the same as fear, which is felt about something realistically intimidating or dangerous and is an appropriate response to a perceived threat; anxiety is a feeling of fear, worry, and uneasiness, usually generalized and unfocused as an overreaction to a situation that is only subjectively seen as threatening. It is often accompanied by restlessness, fatigue, problems in concentration, and muscular tension. Anxiety is not considered to be a normal reaction to a perceived stressor although many feel it occasionally. Anxiety disorders are psychological disorders that feature motor tension (jumpiness, trembling, inability to relax), hyperactivity (dizziness, racing heart, or possible perspiration), and expectations and thoughts. The most common five types of anxiety disorders are generalized anxiety disorder, panic disorder, phobic disorders, obsessive compulsive disorder and post-traumatic stress disorder.

When a person is prone to sever anxiety he will be unable to perform efficiently at work. In this modern day life there is lot of anxiety at work due to pressure from higher authorities. So by measuring the level of anxiety of the professionals will help us to provide intervention programmes to them and make them feel better and perform well at their job effectively and efficiently. Mental health on the other hand is a major problem not only in the United States, but in the rest of the world as well. Mental health a state of emotional and psychological well-being in which an individual is able to use his or her cognitive and emotional capabilities, function in society, and meet the ordinary demands of everyday life. Mental health describes a level of psychological well-being, or an absence of a mental disorder. From the perspective of 'positive psychology' or 'holism', mental health may include an individual's ability to enjoy life, and create a balance between life activities and efforts to achieve psychological flexibility. Mental health can also be defined as an expression of emotions, and as signifying a successful adaptation to a range of demands. The World Health Organization defines mental health as "a state of well-being in which the individual realizes his or her own abilities, can cope with the normal stresses of life, can work productively and fruitfully, and is able to make a contribution to his or her community" In an organization or company if a person has to meet the goals of job, he should have a sound mental balance. He/she should have well-balanced emotions to deal with the pressures of the work life. A person with good mental health will perform efficiently at work and also in life as a whole.

II.   REVIEW OF LITERATURE:
The enduring streams of information technology revolutions are transforming the business world (Laudon and Laudon, 2007) from traditional work processes to IT enabled integrated environment. The impact of this change has brought many challenges to software professionals and developers, working in organizations as in-house programmers and developers. The rise in software demand to business and industry, beyond the capacity of MIS professionals, who cater to the needs of organizations, has given birth to software houses (Rajeswari and Anantharaman, 2003). These software houses are fulfilling the demand of industry and providing customized software according to the need and requirements of the client organizations, by using latest available technology and skills in the market. The technology is changing so swiftly that it is becoming difficult for the professionals to keep abreast with the upcoming technology along with the daily chores of the workplace. Software industry is a human capital intensive industry (Rajeswari and Anantharaman, 2003) and largely based on knowledge workers with technology concentrated environment. Also, the software development process is a learning and communication process (Glass, 1997); hence, it requires greater interaction with the clients, deep understanding of the nature and business processes, clear and timely communication with people involved in the development process, and insight into technological innovations. This situation puts pressure on professionals involved in the process of software development in software houses and results in anxiety among them. There is a strong reason to believe that software professionals, working either in a software house or in any organization for in-house development and maintenance, are prone to more serious risks as compared to people involved in such jobs two or three decades ago (Brod, 1984). It has been pointed out that 'high performance (requirements) with high technology can exercise a dangerous influence on the human personality ... anyone who is constantly working or playing with computers is at risk' (Kaluzniacky, 1998). The constant use of computers affects the users in terms of fatigue, eye strain, arm and shoulder pain, and backache. Khosrowpour and Culpan (1989) published a stress-related study applied to individuals working in computer-related fields. They observed: 'Information processing professionals see change in technology as a prerequisite for their existence, yet the speed of this change can have profound psychological and physiological effects.'

Shoji M, Oda S, Satoh S, Kubota H, Imai Y. (1990) examined the physical complaints, mental complaints and psychiatric disorders in software engineers.They were evaluated by a semi-structured interview. Psychiatric diagnosis was based on DSM-III (Diagnostic and Statistical Manual of Mental Disorders, third edition).The data suggest the severity of mental ill health in software engineers,

III.   METHODOLOGY
Objective:
- To study the level of anxiety and mental health of software and mechanical professionals and provide intervention programmes accordingly.

Hypothesis:
- The level of anxiety of the software professionals is significantly higher than the level of anxiety of mechanical professionals.
- The level of mental health is significantly lower among software professionals than mechanical professionals.

Sample:

The sample for the present study includes 100 professionals 50 software and 50 mechanical professionals of both sexes. The sample of software professionals is drawn from Bangalore IT companies and bank such as Cambridge Investments Services, Fidelity, ANZ SONATA, Exultant and i-Flex. On the other hand the sample of mechanical professionals was drawn from Jindal Industry Hospet, and Railway workshop Hubli Karnataka State, India. The age of the sample group was between 23 to 30 years.

Assessment tools:

[1] **Sinha's Comprehensive Anxiety Test (SCAT):** this test has been constructed by A.K.P.Sinha (Raipur) and L.N.K.Sinha (Patna). It has 90 items measuring different aspects of anxiety. The answers were taken by 'Yes' or 'No' responses. The 'yes' response indicates the proneness for anxiety. The total score obtained in the scale may vary between 0 to 90. The obtained raw scores are converted into percentiles separately for males and females interpretation is carried out. The test retest reliability of the test is 0.85 and reliability coefficient is 0.92. and the validity is 0.62 significant beyond .001 level of significance

[2] **PGI Health Questionnaire N.1:**this questionnaire has been developed by Verma N.N. Wig and D.Prasad. The test consists of 38 items having two dimensions namely, physical and psychological. The number of ticks on section 'A' and 'B' indicate the respective scores, which can be then added up to give a total score also. The test retest reliability is 0.88 split-half reliability is 0.86 and inter co-relation is 0.81.

Statistical Analysis:

Table no 1.1 showing the scores obtained by software and mechanical professional on Sinha's Comprehensive Anxiety Scale:

Variables	N	Mean	SD	't' value	'P' value	Significance
SP	50	22.58	14.38	2.26	0.02	S*
MP	50	16.80	10.85			

SP- Software Professionals
MP- Mechanical Professionals

A "t" value of 2.26 for this group shows that these two groups differ significantly at 0.1 level. This shows that software professionals experience a high level of anxiety than mechanical professionals. Software professionals have to complete a quota given by the employees, which creates severe anxiety. The introspective report obtained by the researcher also supports this view. In their studies, Kleiner and Geil (1985), Natalie (1995), and Fujigaki (1993) argued that it is important to measure the stress among computer professionals and their articles summarize and report the presence of stress among these professionals. Hoonakker (2005) argued about different factors associated with quality of working life and turnover. He pointed out that work and family life, if spill over to each other, create different psychological demands and cause stress, anxiety and depression. Another explanation would be that software field is a very competitive one and fast changing. Software professional should be alert and adapt to fast changing software language structure which creates a great amount of anxiety.

Table no 1.2 showing the scores obtained by software and mechanical professional on PGI Health Questionnaire:

Mental Health Dimensions	Sample Groups	Mean	SD	't' value	Significance
Physical	SP	2.90	2.80	1.15	NS
	MP	2.32	2.15	P=0.1265	
Psychological	SP	4.88	4.11	1.97*	S*
	MP	3.54	2.46	P=0.0258	

The 't' value for psychological dimension is 1.97 which is significant at 0.1 level. This shows that these two groups differ significantly. But there was no significant difference found in the dimension of 'Physical'. As most of the software professional work more mentally than physically there might not be much significant difference concerned with the physical work.According to Acton and Golden (2002), 'The satisfaction of employee and its retention in general is important; however, the retention of software personnel is vital for business successes.' This is also verified by the studies of MacDonald (2000). In fact, software development is a human-intensive industry and farsighted project managers recognize that the greatest impediments to success are often related to people and their mental health rather than to information, technology, and systems (Roepke, Agarwal et al., 2000). Considering the high costs associated with replacing IT staff and their experience, it

makes sense for companies to invest in mechanisms designed to keep IT staff longer (Mak and Sockel, 1999; Moore, 2000). This may involve keeping their job more relaxed stress free and free from anxiety. Hence, understanding the mechanism of their job and complexities is vital to optimize the performance and retention.

IV.   CONCLUSION:

[1]   The anxiety level of software professionals is high than that of mechanical professionals.

[2]   There was no significant difference found between software and mechanical professionals related to 'psychological dimension of mental health.

Significance of the study

   The present study was conducted with the basic objective of analyzing and understanding the difference between software and mechanical fields of engineering occupation. In this study an attempt was made to compare Mental Health and anxiety between software and mechanical professional. The object of the study was to ascertain whether software professional really experience higher level of anxiety and low mental health as compared to mechanical professional. Software field is relatively new field therefore it is necessary to understand their field in comparison with a relatively more stable field of mechanical engineering. The age group of 21 to 28 years has the highest anxiety as compared to their senior colleagues. The reason revealed through discussion with different professionals is that they are working for long hours, are fresh and energetic, and interested to work for longer hours in groups and friendship circles, usually formed when a project starts because they do not have much responsibility at their homes. This age group is also involved in pursuing further education, hence the added pressure of studies along with their jobs'.The prominent section, which reported the highest anxiety, is unmarried males in the age group of 25 to 28 years, and the probable reasons found through the discussion are: they are hypothetical to learn newer technology along with their daily job tasks which puts a lot of burden. They are more involved in client interaction, and satisfying the client is considered the most difficult part in software projects. Also, most of the time, clients themselves are not clear about their necessities, hence, they do not freeze their requirements, which causes trouble and delays in the project and puts burden on all other members working on the project. Therefore, it is concluded that the software professionals working in different software organizations and companies of Karnatakastate, India are experiencing anxietyat their job.

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