

Techno Stress: A Study Among Academic and Non Academic Staff

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Abstract. In the 21st century, the technological momentum has increased far beyond our expectations. Thus, there is a growing perception that rapid advancements in technology are responsible for inducing stress into our lives. Reuters Business Information Services conducted a study of 1300 managers throughout United States, England, Australia, Hong Kong and Singapore, and found out that 33% reported ill-health as a result of information overload and 66% reported increased tension with work colleagues and diminished job satisfaction caused by information overload. The literature suggests that while new technologies may offer many benefits, they may also contribute to increased job stress and strain. Information overloads and multitasking, both associated with ICT (Paoli [1]), may create stress by contributing to work overload. The adoption, rapid diffusion and evolution of ICT have introduced a number of new demands into workplace that leads to job stress. Technology stress (Techno Stress) can be defined as a modern disease of adaptation caused by an inability to cope with new computer technologies in a healthy manner. Clear symptoms of Techno Stress include inability to concentrate on a single issue, increased irritability and feeling of loss of control. The study was conducted among academic and non academic staff in order to measure the level of their stress. Besides, it aims to identify the difference of stress level between academic and non academic staff, and the difference of gender in term of stress. Looking at the negative impact of ICT, this study is very important that enables the researcher to identify the stress related its usage. Furthermore, findings might be used to guide psychologist, counselor and other professional to outline strategic planning dealing with Techno Stress. 80 respondents from Pulau Pinang and Terengganu completed questionnaires comprises demographic section (8 items) and 47 items on Personnel Techno Stress Inventory (PTSI) previously used by Weil & Rosen [2] with reliability 0.71. Domains of Techno Stress can be classified as learning, border, communication, time, family, workplace and community. The instrument was revised, simplified and finalized according to the result of pilot test. The result reliability using Cronbach's reliability was 0.61. Result shows a moderate level of stress among the respondents. There is no significant difference of stress in term of gender and occupation (academic and non academic staff). Limitations of the study and suggestions for further research are discussed.

Keywords: Technology, Stress, Academic, Non Academic, Staff.

1 Introduction

In this information technology era, computer acted as an important tool in our daily life. Advance technology and computers ease our daily activities and life without it seems so troublesome. Schwerm and Benedict [3] state that 50-70 % of job in US are related with computer use and no doubt the figures double in 21 century.

However, working with computer can sometimes be stressful. Selye [4] states that stress is unavoidable in life and no individual will spare from stress. Much of our stress in life comes from conflicts and interpersonal difficulties we encounter with other people. While the computer world may give us the illusion of working alone and isolating ourselves from others, this is not really the case. There are many types of computer related conflicts and stress could arise on any of these conflicts. Symptom of stress may vary and numerous studies showed that used of computer would definitely cause stress. Besides, Ekman, Andersson, Hagberg & Toomingas [5] found that computer use was associated with both physical and psychological complaints. For instance, increase report in depression has been found among internet users, Kraut et al [6].

1.1 Definition of Techno Stress

Craig Brod [7], a psychologist consultant in new technology adaptation field, introduced a new terminology related to stress due to computer use. It is call techno stress. In his book, entitle Techno Stress: The Human Cost of the Computer Revolution, techno stress is defined as a “modern disease of adaptation cause by an ability to cope with computer technologies in healthy manners”. Symptoms of techno stress start with apprehensive feeling toward computer use that may lead to anxiety and stress. Unattended, anxiety may evokes psychosomatic symptoms such as muscle cramp, headache, joint pain, insomnia and other physical well being.

Furthermore, Arnetz & Wikholm [8] described techno stress as the state of mental and physiological arousal observed in persons who are heavily dependent on computers in their work. The term ICT stress also has been used in related study (Johansson Hiden et al [9]) to describe the stressor related to ICT that is information overload.

1.2 Definition of ICT

The term ICT consists of a variety of technologies, techniques and equipment. Bakker [10] defined technologies are among the most widely diffused, commonly employed and fastest growing media such as cellular telephones, computer, electronic mail, and internet, However, this study focuses primarily on the using of computers during the work.

1.3 Objectives of the Study

This study aimed to:

- i) Examine the level of stress among non academic and academic staff in dealing with computer in their daily work

- ii) Examine the difference of stress level between non academic and academic staff
- iii) Identify the difference of stress level among male and female respondents.

2 Materials and Methods

Subjects

The data for this study were collected from 63 non academic staff but fully involved with information and technology task and 30 respondents are IT lecturers. The study adopted random sampling approach. Both respondents fulfilled the research criteria which needs the respondents that exposed to technology in their daily work.

Research Instruments

Data was collected by using closed ended questionnaire comprises of two sections. The first section includes 8 items on demographic background of the respondents such as gender, age, educational status, and tenure. The second section aimed to measure technology and stress correlation. The technology stress questionnaire was adapted from Personal Techno Stress Inventory, Weil & Rosen [2] with reliability of 0.71. This section contains 47 items from 7 different domains such as learning, border, communication, time, family, workplace and community. A pilot test was conducted to 50 staff. The questionnaires was revised, simplified and finalized according to the result of pilot test. The result reliability using Cronbach's reliability was 0.61.

Analysis

The Statistical Package for Social Sciences (SPSS) was used to analyze the data. Descriptive statistics were used to provide respondents' profile. The correlation was applied to look at the relationship between chosen demographic variables such as education with stress working with information technology. Besides, t-test was conducted to look at the difference on stress level in term of job category (academic and non academic) and gender.

3 Results and Discussion

3.1 Demographic Data

Table 1 revealed the demographic data of the respondents. It indicates that 32.5% (N=26), were male and 67.5% (N=54) were female. The age of respondents, 42.5% (N=34) of them are between 23 to 30 years, 32.5% (N=26) between 31 to 38 years, 6.3% (N=5) between 39 to 46 years, 17.5% (N=14) between 47 to 54 years and 1.3% (N=1) were between 55 years and above. In term of marital status, 77.5% (N=62) were married and 22.5% (N=18) were single. Majority of the respondents (48.8%) passed their Malaysian Certificate Exam (MCE), 3.8% (N=3) were certificate holder,

11.3% (N=9), 8.8% (N=7), 27.5 % (N=22) were diploma, degree and master respectively. Most of the respondents involved in the study had joined their profession 5 years and above (78.8%). 8.8% (N=7) between 1 to 2 years, 6.3% (N=5) between 3 to 4 years and 1.3% (N=1) between 4 to 5 years. 70% (N= 56) were non academic respondents and the rest 30% (N= 24) were lecturers.

Table 1. Composition of respondents with respect to gender, age, marital status, educational background, tenure and job category

Variable	Percentage (%)	Number of respondents (N)
Gender		
Male	32.5	26
Female	67.5	54
Age		
23-30	42.5	34
31-38	32.5	26
39-46	6.3	5
47-54	17.5	14
55 and above	1.3	1
Marital Status		
Married	77.5	62
Single	22.5	18
Educational Background		
MCE	48.8	39
Certificate	3.8	3
Diploma	11.3	9
Degree	8.8	7
Master	27.5	22
Tenure		
Below 1 year	5	4
1-2	8.8	7
3-4	6.3	5
4-5	1.3	1
Above 5	78.8	63
Job Category		
Non Academic	70	56
Academic	30	24

3.2 Level of Stress Among the Respondents

Table 2 illustrates the level of stress among non academic respondents. Majority of respondent, 66.1% (N=37) reported having moderate level of stress. 8.9% (N=5) of non academic staff have low stress level and the rest 25% (N=14) with high stress level. As same as non academic respondents, majority of academic staff, 79.2% (N=19) also demonstrates moderate level of stress. Whereas, 8.3% (N=2) and 12.5% (N=3) reported having low and high level of stress respectively.

Table 2. Stress Level for academic and non-academic respondents

Stress Level (non academic)	Percentage (%)	Number of respondents (N)
Low	8.9	5
Moderate	66.1	37
High	25	14
Stress Level (academic)		
Low	8.3	2
Moderate	79.2	19
High	12.5	3

3.3 Difference of Stress Level Among Male and Female Respondents

Result shows that there is no significant difference on stress level among non academic and academic staff, $t=1.627$, $p>.05$. This study was not consistent with Sonya [11] stated that there was weak correlation between the stress level and computer expertise showed that individuals with computer skills tended to have low level of stress.

Besides, researchers have taken a keen interest in identifying the respondents' stress level in term of gender. The study found that there is no significant on respondents' stress level with respect to gender, $t=-1.635$, $p>.05$. The study consistent with Anthony [12] found that techno stress did not imply any difference in term of gender. Furthermore, the result was supported by Sonya [11] stated that there were no significant differences between males and females in term of techno stress. In contrast with the study by Wijk & Kolk [13][14] reported that in several health survey there were gender differences. Women described themselves as having higher symptoms such as stress.

3.4 Correlation of Stress Level with Respondents' Tenure

With respect to tenure, result indicated that there was a moderate correlation between the level of stress and non academic tenure, $r = 0.423$, $p < .05$. In contrary, there was no correlation among the academic staff. Consistent with Sonya [11] found that techno stress and tenure do not differ significantly among the respondents.

4 Limitation of the Study

Researchers could not generalize the study concerned to all non academic and academic staff. It was limited to one university and one non academic organization. Besides, the number of respondents was not persuaded for generalization.

Furthermore, the study depend solely on questionnaires on Personal Techno Stress Inventory that unable the researchers to explore in depth other related stress factors experienced by the respondents.

Finally, as state earlier there are broad aspects of technology, however, this study deliberately focus on computer technology and techno stress.

5 Suggestions for Future Research

There are several suggestions that could be undertaken for future research.

Firstly, a study could be performed to examine the different personalities of the respondents dealing with techno stress. Further explore the type of personality that successfully copes with stress and vice versa.

Secondly, future research could be done by conducting interviews with respondents to identify other variable that might relate to techno stress. The use of semi structured interview also might help the researcher to enhance the standardized questionnaires.

Finally, researcher might focus on other psychological health effects related to techno stress such as anxiety, phobia and depression.

6 Conclusion

The main findings in this study found that the computer use may contribute unhealthy psychological impact particularly stress. Although, there was a moderate level of stress among both academic and non academic staff, it is essential to identify risk and health factors in relating with ICT to enable preventive and intervening approaches. Employers and organizations concerned have to handle this matter seriously by providing training to staff that equip them with ICT exploration. Understanding techno stress and the ways in which computer affects a person individually might decrease the potential physical and psychological harm.

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