

DETERMINING THE EFFECT OF TECHNO STRESS AMONG HEALTH WORKERS:

MOUNT MERU REGIONAL REFERRAL HOSPITAL IN ARUSHA

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Abstract

The objective of the study was to determine the effect of techno stress among health workers a case of Mount Meru Regional Referral Hospital in Arusha with the objective of exploring the causes, symptoms and effect of techno stress.

The study used non probability sampling technique and convenience sampling technique and the method of data collection was the survey method whereby a quantitative approach was used for data analysis. The major research instrument used for the research was the Questionnaire and data was analysed by using SPSS following the research questions and the analysed data was presented in tables with frequencies and percentages.

The factors that were strongly agreed by many respondents as a cause of techno stress at MRRH staff as shown in table 3 above, include poor internet connectivity 22(73 %) and unreliable power supply 19(63%), lack of qualified IT/ICT specialists for troubleshooting and technical support 15(50%), technical problems 14(47%), lack of knowledge about new technology and computers among MRRH staff 12(40%), negative attitude towards computer use among MRRH staff 10(33%). Some respondents agreed that lack of policies to guide IT application 19(63%), lack of enough involvement in the decision making process related to technology 18(60%), insufficient training 15(50%), insufficient equipment 11(37%) and outdated equipment 10(33%) are the major factors causing techno stress among Mount Meru Regional Referral Hospital.

From the study findings and the reviewed literature it can be recommended that there are various factors that are causing techno stress among MRRH staff, some of which are considered to be major factors and some not. These factors can be grouped into three categories including human resource factors concerned with the capacity of the qualified IT staff, management factors concerned with all administrative issues including financial resources, decision making, rewards and training and lastly the factors related to technology itself including complexity of IT terminologies, pace of technological change and technical support.

Keywords: Technostress, Mount Meru Regional Referral Hospital, Information and Communication Technology and computers,

1.0 Introduction

Healthcare professionals have increased likelihood of experiencing techno stress at work. Since knowledge about the causes and severity of techno stress and about the strategies used to handle it is limited (Florkowski, 2019)

Occupational stress is the most common type of stress in American workers (American Institute of Stress 2015). The American Psychological Association reports that 41% of American workers feel stressed during the workday (APA 2012). The World Health Organization estimates that the cost of occupational stress to American businesses is \$300 billion a year, and considers occupational stress a "health epidemic of the 21st century" (Kozlowski 2018)

Many aspects of our lives have been digitalized as we have moved from an industrialized culture to the information age. The rising usage of information and communication technologies (ICTs) in modern times has had a big impact on education (Henderson, Selwyn & Aston, 2015). The 2018 European Commission Digital Learning Action Plan outlines how the European Union can help educational institutions and systems adjust to the quick technological developments of the modern era. The European Commission's 2016 Communication on upgrading and modernizing education also highlights the advantages of digital technologies as a tool and opportunity for delivering high-quality education to the public.

Additionally, research has revealed a connection between stress and the growing usage of ICTs in education (Berg-Beckhoff et al., 2017). The term "technostress" (Chiappetta, 2017), which is frequently used in studies to describe this phenomena of stress associated to technology, is used to describe the state of stress that can be brought on by information overload and continual connectivity in this way. There are presumptions and expectations that university students can use digital technology without difficulty and that there is no technological stress in the population. The majority of university students, however, come from a variety of backgrounds and have a wide range of "digital competence," learning styles, interests, and propensities. While some students may be "digital natives," others may only be conversant in the fundamentals (Eynon & Malmberg, 2018).

Job stress is related to negative outcomes not only for organizations but also for individuals, manifesting as depression, a sense of failure, fatigue or a loss of motivation (Bakker, Van Der Zee, Lewig & Dollard, 2006). Several international organizations, such as the International Labor Organization and the World Health Organization, have concerns about how the stress generated by ICT use affects employees' health (Krishnan, S, 2017).

2.0 Literature Review

Transaction theory of stress describes the issue of stress as a combination of stimulating conditions and individuals' responses to them (Lazarus and Folkman, 1984). According to this theory, the emergence of techno stress seems to be a linear process, from stressors and situational factors to strain and outcomes. Studies based on this theory have mostly followed a reductionist approach in which technostress creators and inhibitors are differentiated and singled out to examine this issue (Cao, X.F et al., 2019).

There is no way one can discuss techno stress as a general term because techno stress is a specific type of stress. Stress comprises a complex interaction between a person and his or her life causing physical, mental and emotional reactions to various conditions, changes and demands of life (Lehnert, 2017), It is a pressure perceived by an individual physiologically and psychologically placing him or her in a risk both physically and mentally (Tarafdar, M, 2019).

According to Ragu-Nathan et al (2018) being under stress is "a state experienced by an individual when there is an environmental situation that is perceived as presenting a demand which threatens to exceed the person's capabilities and resources for meeting it under conditions where he/she expects a substantial differential in the rewards and costs from meeting the demand versus not meeting it".

According to Werner (2011), stress is one of the major identified causes of poor health at workplaces which can result from many factors such as unhealthy lifestyles, lack of appropriate resources and prevalence of illness in the workplaces. Werner says that the mentioned factors have a great impact on the performance of an organization as a whole because they cause low productivity, high rate of production errors and accidents, high labor turnover, increased absenteeism high medical costs, coming to workplace very late, a lot of excuses by employees, ineffective participation in performing activities, regular sickness and sick-leave and moving of employees from one organization to another.

According to Ajala (2011) techno stress is a common phenomenon in almost all hospitals describing the stress due to the development and application of information technologies among the Mount Meru Regional Referral Hospital and information professionals due to rapid change in computer hardware and software

Tarafdar, Tu and Ragu-Nathan (2017) describe techno stress as the stresses that patients experience as a result of application of multitasking, constant connectivity, information overload, frequent system updates and consequent uncertainty, continue relearning and consequent job-related insecurities and technical problems associated with the organizational use of ICTs.

Tarafdar, Tu and Ragu-Nathan (2011). It is described as “a problem of adaptation wherein individuals are unable to cope with requirements related to the use of ICTs including adjustments to constantly evolving ICT and the changing physical, social and cognitive requirements related to ICT use”

Pirkkalainen, H, (2020) Techno stress is described as individuals' inability to effectively cope and deal with ICTs

Okebaram and Moses, (2018). Despite of several definitions given to the concept 'techno stress' since it was first coined by Brod, one definition has been obtained that encompasses the major aspects of its predecessors “Techno stress is seen as a reflection of one's discomposure, fear, tenseness and anxiety when one is using computer technology directly or indirectly that ultimately ends in psychological and emotional repulsion and prevents one from further learning or using computer technology.

Odigbo and Onwumere (2018) associate techno stress with the problems of human nature towards new innovation, viewing it as human resistance to change and an outcome of human negative reaction towards technology application. It is the negative response for those who are not willing to change and who find it difficult to adapt new technological changes (Prabhakaran and Mishra, 2012)

3.0 Methodology

The study used descriptive research design for the reason that it allowed the researcher to describe the state of unknown noticeable facts on effects of techno stress among Health workers at MRRH .The design also allowed generalization of study findings about a study population, The descriptive research design is preferred for the study because it allowed the researcher to collect needed data, describe it, analyze and establish evidence on the effects of techno stress to allow gathering of the detailed information about the study from individuals (Kothari 2011)

Non-probability non probability (purposive) sampling technique and convenience sampling technique and convenient sampling methods were used to select research participants from MRRH staff.

Questionnaire were used as instruments for data collection because questionnaires was preferred as a main data collection method for the study because it guarantees privacy of the source of information through anonymity along with ensuring standardization was used to collect quantitative data from MRRH staffs

The quantitative data was analysed by using frequencies with descriptive statistics. The SPSS version 16 was used as a tool for analysing the data.

4.0 Findings

The study targeted a sample size of 30 respondents from which all 30 filled in and returned the questionnaires making a response rate of 100%. The response rate was reasonable to make conclusions for the study.

4.1 Major causes of techno stress at Mount Meru Regional Referral Hospital with the ranking rates

The study assessed causes of techno stress at Mount Meru Regional Referral Hospital. Findings are presented in the table 1 below;

Table 1: Factors causing Techno stress among Mount Meru Regional Referral Hospital

N=30											
	Factor causing techno stress	Strongly agree		Agree		I don't know		Disagree		Strongly disagree	
		F	%	F	%	F	%	F	%	F	%
1	Lack of qualified IT/ICT specialists for troubleshooting and technical support	15	50	11	37	1	3	3	10	0	0
2	Lack of knowledge about new technology and computers	12	40	5	17	0	0	7	23	6	20
3	Lack of experience with computers and technological applications	4	13	5	17	0	0	12	40	9	30
4	Difficulties with technological language	3	10	8	27	1	3	15	50	3	10
5	Negative attitude towards computer use among MRRH staff	10	33	12	40	1	3	6	20	1	3
6	Fear to lose job due to rapid technological changes	1	3	4	13	3	10	15	50	7	23
7	Lack of enough involvement in the decision making process	4	13	18	60	5	17	2	7	1	3
8	Insufficient training	10	33	15	50	1	3	3	10	1	3
9	Lack of policies to guide IT application	1	3	19	63	7	23	1	3	2	7
10	Insufficient equipment	4	13	11	37	4	13	9	30	1	3
11	Outdated equipment	3	10	10	33	7	23	8	27	2	7
12	Technical problems	14	47	14	47	1	3	1	3	0	0
13	Unreliable power supply	19	63	11	37	0	0	0	0	0	0
14	Poor internet connectivity	22	73	8	27	0	0	0	0	0	0

Source: Field Data 2022 F =Frequency, % = Percentage

The researcher aimed at establishing the major factors that cause techno stress among Mount Meru Regional Referral Hospital. The factors that were strongly agreed by many respondents as a cause of techno stress at MRRH staff as shown in table 1 above, include poor internet connectivity 22(73 %) and unreliable power supply 19(63%), lack of qualified IT/ICT specialists for troubleshooting and technical support 15(50%), technical problems 14(47%), lack of knowledge about new technology and

computers among MRRH staff 12(40%), negative attitude towards computer use among MRRH staff 10(33%). Some respondents agreed that lack of policies to guide IT application 19(63%), lack of enough involvement in the decision making process related to technology 18(60%), insufficient training 15(50%), insufficient equipment 11(37%) and outdated equipment 10(33%) are the major factors causing techno stress among Mount Meru Regional Referral Hospital.

Table 1 also reveals that the majority of respondents disagreed that difficulty with technological language 15(50%), fear to lose their jobs due to rapid technological changes 15 (50%) and the lack of experience with computers and technological applications among MRRH staff 12(40%) are major factors causing techno stress among Mount Meru Regional Referral Hospital.

4.2 Discussion of Findings

The study findings establish that the major factors causing techno stress among Mount Meru Regional Referral Hospital staff (that were “strongly” agreed and “agreed” by the majority of respondents by >30%) are poor internet connectivity, unreliable power supply, lack of qualified IT/ICT specialists for troubleshooting and technical support, technical problems, lack of knowledge about new technology and computers among MRRH staff , negative attitude towards computer use among MRRH staff , lack of policies to guide IT applications, lack of enough involvement in the decision making process related to technology, insufficient training, insufficient equipment and outdated equipment.

Some of the responses hold opposing views with the findings by other researchers including Pirkkalainen, H. et al. (2019). For instance, while the study findings in table 1 reveal that factors like fear to lose one’s job due to rapid technological changes, lack of experience with computers and technological applications among MRRH staff , difficulties with technological language, performance worry, information overload, fast pace of change, increasing work demand and overwork, insufficient staffing and the lack of policies to guide IT application were not the major factors causing techno stress among Mount Meru Regional Referral Hospital, a study by Okebaram and Moses (2013) identified these factors to be among the major factors that cause techno stress in various organizations.

Also, while the study findings reveal that insufficient training was a major factor 15(50%) causing techno stress among Mount Meru Regional Referral Hospital, a study by Pirkkalainen, H. et al. (2019). Found that inadequate training was not a major source of techno stress. To them, introduction of new technology, sitting in front of the computer system for a long period, change in software and poorly designed workstations were found to be the major factors causing techno stress. On the other hand the study findings support Isiakpona and Adebayo (2011) who found that slow internet service 22(73 %) and poor technical support 15(50%) were as well identified as major factors causing techno stress as it was found in the study findings.

The study findings concur with a study by Tarafdar, M (2018) who reported the lack of technical support, the use of outdated equipment and the insufficient training to be the major causes of techno stress. Other major factors causing techno stress among health workers reported by Pirkkalainen, H. et al. (2019) are quick pace of technological change and poor patients interface. Also, the study findings concur with (Yao, J.J et al, 2017) who pointed out that the lack of training, lack of participatory management styles, ineffectiveness of communication and inadequate of employees’ involvement were the major causes of techno stress.

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Since the core mission of MRRH is achieving the goals and mission of the hospital is to give a better care services to its clients even having all the mentioned effects of techno stress MRRH staff are expected that in this age of ICTs, are providing services in a technological way, but with all these effects, it is not possible for MRRH staff to achieve this. The idea above is supported by what was stated by Isiakpona and Adebayo (2011) who said high productivity is achieved with minimal level of techno stress especially on the part of diagnosis. However, MRRH management should make effort to initiate strategies for minimizing techno stress so as to enhance smooth application of ICTs at MRRH According to Tams et al. (2018), the strategies used to control techno stress include the following: use of appropriate software with simple usage; creation of a suitable environment for connection between employees and technologies; creation of a stable and secure environment; and training employees on new technologies. Shi (2020) suggests buying adequate user-friendly hardware and software and the use of biofeedback software.

Ma and Turel (2019) suggested that in order to minimize techno stress, focus should be on employees in the company to avoid employees having feelings that their job security is threatened or that they are negatively judged because of their feelings, concerns, and beliefs about technology. For instance, the resisters and those who are doubtful about using technology should be given the opportunity to voice their concerns and share their feelings. Also, it should be ensured that a lot of time is adequately invested in thoroughly investing all options when there is a need to establish a new technology (Ma & Turel, 2019).

Pirkkalainen et al. (2019) revealed that the challenge with techno stress is not the new technology involved in carrying out the activity but the ability of the personnel to adapt to this change, and thus they suggest that in order to manage techno stress, the management should properly manage technological changes and not the technology itself.

Other strategies for reducing techno stress, as suggested by Pirkkalainen et al. (2019), must be encouraged to modernize their services and obtain adequate funds that should be utilized properly for their development and functions.

For organizations to benefit from information technology, administrators and staff should develop the ability to identify techno-stress symptoms, maintain awareness of these symptoms among staff, learn effective coping strategies and techniques, and do as much as possible to manage techno-stress levels in the organizations (Okebaram and Moses, 2013).

5.0 Conclusion and Recommendations

The findings revealed in this study as shown in (table 1 above) as major factors that cause techno stress concur with what was identified by Marchiori, D. M et al (2019) in his study investigating the effect of technology on health settings. AL-Qallaf identified that insufficient technology-related formal training programmes, inadequate technical support services, lack of sufficient professional at MRRH staff in ICT at the workplace, insufficient equipment and the lack of enough workstations and printers to meet patrons 'needs were the major factors causing techno stress among health workers.

From the study findings and the reviewed literature it is recommended that there are various factors that are causing techno stress among MRRH staff, some of which are considered to be major factors and some not. These factors can be grouped into three categories including human resource factors concerned with the capacity of the qualified IT staff, management factors concerned with all administrative issues including financial resources, decision making, rewards and training and lastly the factors related to technology itself including complexity of IT terminologies, pace of technological change and technical support.

The Ministry of Health as well as the MRRH management should make sure that staff are empowered to cope with the changing technology so that technostress among health workers are reduced if not eliminated at all.

It can be summarized by saying that avoiding techno-stress completely among Mount Meru Regional Referral Hospital staff is an impossible practice because their daily duties involve the use of computers and applications of ICTs, which are constantly changing. Therefore, what is expected is for MRRH to apply various strategies. However, there is no single strategy used for coping with technological stress in organizations; instead, several strategies should be applied. Most of the mentioned strategies have already been used by others, so MRRH staff should adopt and apply them

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