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Techno-stress among library professionals at the workplace in ICT era: An overview

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Abstract

In ICT Era, technologies are so common that many organizations faced with intimate problems of how to introduce these technologies. One major problem faced by them is impact of the new technology on the work processes and productivity of employees. Implementing a new technology at the workplace is a multidimensional problem. The technological revolution has undoubtedly brought along many changes at the workplace. No doubt it has allowed work to be carried out faster and more efficient but many employees are not comfortable with the implementation of technology as it involves change and uncertainty. As a result, they experience additional stress known as techno stress which may have negative consequences in the organization. Stress is the changes which our bodies experience as we adjust to our continually changing environment. Stress at the workplace is a growing concern where employees are increasingly facing conditions of workload, job insecurity, low levels of job satisfaction, and lack of autonomy. Work place stresses have a harmful effect on the health and well being of employees, as well as a negative impact on workplace productivity and profits. This conceptual paper highlights the issues related to techno stress, particularly in the library setting. This paper examines techno stress, its effects, stress related issues and measures taken to avoid it among library professionals.

Keywords: Technology change, Techno stress, Stress related issues, library Professionals Stress reduction

1. Introduction

Information and communication technologies (ICTs) swamp the daily work and personal lives of people today. The current working environment continues to change due to the increased use of ICTs (Ayyagari *et al.* 2011).^[1] Employees have to make efforts to cope up with new software and hardware releases. They may also be afraid that ICTs will eventually replace humans in certain workplaces. Individuals experience stress when they use ICTs in the working environment.

Today everyone is experiencing technological transformation in both the social and work environments. Computers appear in every field; in businesses, schools, universities, and in our lives. The advent of information technology such as computers, mobile phones, smart phones, computer networks etc have been introduced as the key issues of the digital world. Many problems arise with the advent of any new technology. Changes are evident in role definitions, tasks, organizational structures, user expectations, vendor relations, and campus perceptions of academic library/learning resources personnel. Though ICTs offer indefinite benefits, the fact that the ICTs also cause stress cannot be ignored. Since the advent of this progression in technology, many people dreaded the anticipated consequences of this technological advancement such as unemployment leading to stress.

During the last two decades changes in technology and communication have left libraries dramatically changed, work roles altered, required skill sets diversified, and prospects for the future of libraries and library services increasingly uncertain. These can be highly stressful times for library employees. Advances in technology have brought about increasingly complicated ways of doing work in the workplace, more so than at any other time in human history. The rapid advances and changes in new technology have caused businesses, industries, and the government to introduce employees to updated technology and software programs several times each year, in an attempt to stay technologically current. The rapid introduction of technology at the workplace may cause organizations to suffer from a "combination of technology fatigue and aversion" (Fisher & Wesolkowski, 1999)^[2]

Librarianship also has changed dramatically, and the majority of that change is due to

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automation Earlier, Online Public Access Catalogs (OPACs) were virtually unheard of, and OCLC and Dialog were among the few computerized databases that librarians had contact with. Now, some libraries are on their second automation system, most are automated, and the few remaining are contemplating automation for the first time. Yet, it is not just the computerized catalogs and integrated systems that cause techno stress.

2. Techno stress:

New technologies are constantly being introduced, and those systems are becoming more and more complicated. The changes are also more and more frequent. The uses of ICTs appear to be creating stress in some individuals known as "techno stress". Such stress is experienced by individuals who are unable to cope with the demands of organizational ICT usage.

Brod (1984)^[3] a pioneer in the field, defined techno stress as "a modern disease of adaptation caused by an inability to cope with the new computer technologies in a healthy manner. It manifests itself in two distinct but related ways: in the struggle to accept computer technology, and in the more specialized form of over-identification with computer technology."

Clark and Kalin (1996)^[4] the real definition of techno stress is "resistance to change". They claimed that technology is not the culprit because computer and technologies are just tools and stress is a natural reaction. Thus, they suggested that in order to manage techno stress, it is the change that has to be managed not the technology.

Davis-Millis (1998)^[5] identified techno stress as a condition whereby a person has to adapt to new technology especially when there is inadequacy of the equipment, support, or the technology itself.

Sahin and Coklar (2009)^[6] Techno stress is a specific type of stress related to the use of ICT, mostly resulting from the high speed at which technological change takes place.

From the above cited definition it is concluded that techno stress is stress caused by working with multiple and rapidly changing computer systems, and mediating between these systems and the demands of one's organization, staff, customers, and personal life. It is the negative psychological link between people and the introduction of new technologies. It is a result of altered habits of work and collaboration that are being brought about due to the use of modern information technologies at workplace. It is not always technological in nature. It may not be the computer at all that creates fear or stress in the individual. Change in itself is frightening and powerlessness may be at the root of many resistors. As such, techno stress can be divided further into four distinct but related components: performance anxiety, information overload, role conflicts and organizational factors. (Kupersmith 2005)^[7] Each of these can affect the lives of librarians and other library staff.

3. Techno stress Creators:

Techno stress creators describe the factors that generate stress in the organizational environment associated with the use of ICTs. There are five conditions where ICTs users can suffer from techno stress are classified as:

- Techno-overload describes situations where employees are forced to work more and work faster or change their working habits; trying to do more in less time, and experiencing tension and anxiety due to the advanced ICT's.

- Techno-invasion describes situations where professionals can potentially be reached anywhere and anytime and feel the need to be constantly connected. Due to this kind of continual connectivity, individuals feel attached to these technologies and experience intrusion on their time and space. Therefore, they experience frustration and stress.
- Techno-complexity describes situations where the complex Information system forces professionals to spend time and effort in learning and understanding how to use new applications and update their skills. Users can find the variety of applications and functions intimidating and difficult to understand, and consequently feel stressed.
- Techno-insecurity which emerges in situations where users feel threatened about losing their jobs to other people who have a better understanding of new Information system. Existing professionals may thus feel insecure or cynical about Information system, leading to tension and stress.
- Techno-uncertainty which refers to contexts where continuing changes and upgrades to Information System do not give professionals a chance to develop a base of experience for a particular application or system. They find this unsettling because their knowledge becomes rapidly obsolete. Although they may initially be enthusiastic about learning new applications and technologies, constant requirements for refreshing and updating eventually create frustration and anxiety. (Tarafdar, Tu, Ragu-Nathan & Ragu-Nathan 2007)^[8]

4. Some key points related to stress:

- Stress is a response to changes at the workplace as perceived by the individual. Moderate stress can be beneficial and stimulating, but severe and prolonged stress can have harmful physiological and psychological effects. "Interrupt-driven" situations and lack of control increase stress.
- Techno stress in the library literature affects both staff and users of libraries. Causes include information overload, poor user interfaces, and lack of standardization, networking and security issues, hardware and ergonomic problems and so on.
- Every people experience and deal with stress in different ways. Coping strategies likely to be successful which include approach problems in a systematic way, setting realistic goals, setting aside time for learning, and maintaining good health.
- Management role has a lot to do with how techno stress affects an organization. Good practices include setting clear and reasonable priorities, fostering a culture that values cooperation and is positive about technology, and providing adequate equipment, training, and technical support.
- Designing websites and online systems affects how stressful they are for users. Design objectives in this area are to help users to establish a clear mental model of the system, make its functions visible and clear, reduce cognitive dissonance, and eliminate or forgive common user errors. One of the prime goals of usability testing is to identify points of stress.

5. Techno stress in libraries:

With the development and application of information technologies, the library environment has changed from the

traditional library to computerized library, then automated library and more recently digital library. The Library professionals experience stress as they have to readjust their lives with the changing library environment, job rotation, job promotion, etc. While adjusting to such changing library environment, stress will either help or interrupt us depending on how we react to it. There is a pressure on the library professionals to adopt knowledge of new technologies along with traditional method of functions and services. But there is limited scope for training programs, higher studies, refresher courses, and this becomes a cause of stress among library professionals.

6. Types of stress in libraries:

Libraries are now shifting from traditional libraries to digital libraries. In the perspective of library new type of 'on the job stress' is arises i.e. techno-stress. Stress can be grouped into two categories namely 'on the job stress' and 'off the job stress'. Every library personnel always experience some amount of stress, when he/she is in library or in society.

a. On the job stress:

On the job stress is also called organizational stress. Different types of on the job stresses in the library perspective are as follows:

i. Role Ambiguity:

Role ambiguity is the perception that one lacks information necessary to perform a job or task, leading the perceiver to feel helpless. In other words, role ambiguity occurs when an individual does not have clear information about the expectations of his or her role in the job or organization. It may exist in relation to library activities, responsibilities, personal styles, and norms.

ii. Work-family Stress:

Work-family stress is generally defined as a form of inter-role conflict in which the role pressures from the work and family domains are mutually incompatible or incongruous in some respect, whereby participation in one role is made more difficult by virtue of participation in the other.

iii. Role Stagnation:

Library staffs perceive that there is no such opportunity in the new role career progression. Actually it is the feeling of being struck in the same role.

iv. Role Conflict:

This stress is generated by the different expectations from different angles of the same role of library personnel. Role conflict is a feeling of being torn in multiple directions, unable to find a way to make every role partner satisfied.

v. Role Erosion:

The role occupant feels that the functions within his purview are goes to/or performed by others. When a library staff engaged in classification work properly classifies the complex subject of a document and the credit goes to other, and then arise this type of stress.

vi. Role Overload:

When a library personnel feels that his role is very much overloaded qualitatively (too difficult to do) and quantitatively (too much to do), he experiences role overload.

vii. Role Isolation:

This type of role stress refers to psychological distance between role of a library staff and other roles in the same role set. It is characterized by the feelings that others do not reach out easily, indicative of the absence of strong linkages of one's with other roles.

viii. Personal Inadequacy:

This type of stress exists when a library personnel feels that he has no necessary skills or knowledge/ training to perform effectively in the changing context of digital library environment.

ix. Self-Role Distance:

This stress arises from mismatch of right people in the right library work.

x. Resource Inadequacy:

When a library staff feels that he is not provided with adequate resources for performing the functions (finding out keywords/descriptors of a document) expected from his role.

xi. Time pressure:

Library hours are different in different libraries. In case of extended hours (beyond normal working hours) some staffs feel pressure or stress to do duty for his/her personal or family problems.

xii. Changes of any type:

Library is a complex adaptive open system and always accommodates every change in the environment. Therefore needs structural, technological and functional changes to meet the user demands. Library staffs have a tendency to resist any change and feel stress.

xiii. Spatial crowding:

Sufficient space is required to perform any type of library work. Library staffs may feels stresses arising out from spatial crowding.

xiv. Job hazards:

Stress could be considered the leading cause of VDT-related ailments. The list of causes which perpetuate this complaint is numerous and long. It emphasizes environmental conditions relating to space, lighting, noise, and temperature control; and poor workstation design including unfriendly software, job design, working procedures. Different types of muscular-skeletal and ocular stresses arise during prolonged work in inappropriate ergonomic work environment in front of computer screen in the digital library environment.

xv. Job insecurity:

With the increasing intrusion and appointment of IT/Computer Science people into the LIS profession have created fear among LIS professionals about their job security in future. Stress may arise if any library staff always feels that the authority may terminate his/her job.

xvi. Others:

Many other types of stresses created in library: having to deal with theft, mutilation and destruction of library materials etc.

b. Off the job stress:

Off the job stress comprises of two types of stresses namely psychological stress and societal stress. These both type of stresses are originated from the sources outside the library.

i. Psychological stress:

Psychological stress is what you feel when you are under pressure or having difficulty coping with a situation or stimulus. Types of Psychological stress enumerated as follows:

- 1) **Cataclysmic phenomena:** It is arising out from sudden, unique and powerful single event or clusters of related events affecting large number of people (e.g. flood, draught etc).
- 2) **Individual crises:** Same as cataclysmic but affect fewer people (e.g. death of dear one).
- 3) **Daily hassles:** This type of stress arises from daily annoyances and minor hassles. Examples include: making decisions, meeting deadlines at work, traffic jams, encounters with irritating personalities, etc. Often, this type of stressor includes conflicts with other people. Daily stressors, however, are different for each individual, as not everyone perceives a certain event as stressful.
- 4) **Societal stress:** Sometime the society, in which the library personnel live, also creates stress.

7. Causes of Stress among Library Professionals:

Stress can be consequent from three sources such as physical, mental and Work Place. Physical stress can be brought on by overwork, lack of rest and poor diet. Mental stress can be traced to a persons' mental state of mind, which involves expectation, fears, regrets etc. Work Place stress is derived from the interaction with the outer world like interaction with modern technologies, role as a library manager etc. Different events which are responsible for stress factors are as follows,

a. Rate of Change in the Technology:

The information and communication technology (ICT) is a fast changing phenomena. There is lack of standardization and reliability of the technology. Accordingly the application of ICT in libraries is also changing at an alarming rate, which creates stress among library professionals.

b. Change in Library Environment:

Many libraries have migrated from older manual system to automated systems and more recently to newer more sophisticated digital library systems. Staff members must unlearn old habits and procedures and learn to understand the new system

c. Change in Type of Document:

In addition to hard copy, most libraries are now acquiring at least some materials in alternative formats, such as CD-ROM or electronic documents or digital format. These materials, which were once handled on an ad hoc basis, must now be incorporated into the normal acquisitions workflow.

d. Change in Library Physical facility:

Problems or changes in physical facilities have become a vital problem in today's libraries. With the increased use of electronic formats, the library authorities are reluctant to expand facilities to cope with increasing space requirements. Some libraries are actually moving into new facilities with less space or losing space to other functions. But the hybrid type of libraries having both print and non-print documents face much problems relating to change in physical facilities of the library.

e. Changing Roles of Library professionals:

With the advent of IT and communication technologies and applicability in handling information added new challenges to the library professionals. The role of the librarian is changed as now they have to use computers and the internet to create, collect, consolidate, communicate and preserve information. As a result there is increase in their workload.

f. Changing users demand:

With the development of various micro subjects, information explosion, time bound academic programmes etc users attitude towards pin pointed information have changed. Accordingly the acquisition, organization and retrieval of information in quickest possible time have given a tremendous amount of stress in the mind of library professionals.

g. Reduce staff strength:

Restructuring, layoffs, loss of staff positions, and doing more with fewer people have become increasingly common which has been a source of stress with the increasing workload. . Further problems such as illness, disability, or death of a member of the library community have a growing impact on co-workers.

h. Interpersonal relationships.

Relationships with library patrons are obvious sources of stress for public services staff members. On the one hand, there can be great intensity in relationships between librarians and the people they try to help, sometimes leading to feelings of inadequacy and frustration when the help cannot be fully responsive to the patron's needs. On the other hand, patrons can sometimes be rude or ill-behaved, can seem to expect miracles, can steal or mutilate materials, or can otherwise cause stress for the public services librarian.

8. Ways of Managing with techno Stress

There are lots of things library professional can do to cut down on stress. The following techniques will help to manage the technological stress

a. Help from each Individual:

Talk to someone. You don't have to fix the problem, just report it. Ask your boss if you're doing OK. This simple question can make a lot of difference and verify wrong impressions. If you take on a technique to manage stress, tell someone else. They can help you be accountable to them and yourself.

b. Simplify the Technicalities:

Use basic techniques of planning, problem solving and decision making. Get adequate, user friendly software, foster sharing of computer related knowledge within the organization. Maintain an ever-present system of training and education to new and old technologies Library should have core computer expert to deal with ICT aspects.

c. Managing the workload:

Monitor the number of hours that you work in a week. Tell your boss, family and/or friends how many hours that you are working. Write weekly status reports. Include what you've accomplished last week and plan to do next week. Include any current issues or recommendations that you must report to your boss. Give the written status report to your boss on a weekly basis. "Wash the dishes". Do something you can feel good about.

d. Better communication within the environment:

Create a level of reassurance, patience, and stability within the environment. Maintain an ever-present system of training and education to new and old technologies. Foster sharing of computer related knowledge within the organization. A responsive and easily reached help-desk can allay managers' anxiety and concerns, guide them in using and familiarizing with new computer applications and assure them in case of problems. Keep employees "involved" in the general scheme of things in the context of new computer systems. The more involved and familiar they are, the less techno stressed they would be. Encourage people to "experiment" and innovate in the context of computer use. Encourage employees to communicate, discuss, and share their knowledge about computers. Enhancement in pay and perks and work recognition by way of awards publicly.

e. Set Priorities:

Providing library service is a challenge that requires explicit setting of priorities at the individual, departmental, and library levels. This process must include specification of low as well as high priorities.

9. Ways to Handle Physical Stress

- Take a few deep breaths.
- Exercise – take a walk during the day.
- Think positive. Remember the good things in your life.
- Count to ten. This make you stop and relax before you react to the stressful situation.
- Take a good stretch. Stretching makes muscles relax and help you feel less

10. Recommendations

Recommendations for users:

Techno stress is a new and growing field of study on stress .To this users must share their views so that management, creators of technology, as well as IT departments can gain a deeper understanding of the users' experience.

Recommendations for Management:

From an organizational point of view, the management must emphasize the importance of:

- 1) Training of employees;
- ii) Adequate IT support;
- iii) Software standardization to ensure universal systems;
- iv) User involvement in new technology implementation process whereby systems are developed with user input before implementation and dissemination to avoid failures;
- v) Enacting policies to limit unnecessary email distribution to alleviate information overload;
- vi) Provision of clear documentation

11. Conclusion:

It is true that technology and software will continue to advance and change. Challenges to organizations will continue to mount in trying to keep the level of techno stress down in the organization. New software initiatives should be planned well in advance and training provided to impacted employees. Libraries should pick software applications that fit their working environment. The easier the library professional interact with the system, the less techno stress created. Employers and organizations concerned have to handle techno stress 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. When work continues to add stress in people's lives, it is important to take time to develop team and communication skills that will help to energize people to tackle work tasks better with the understanding that "we're all in this together."

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