Full Length Research Paper

Technostress: Causes, symptoms and coping strategies among Librarians in University libraries

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The paper seeks to examine the causes, symptoms and coping strategies of technostress among librarians in university libraries. The descriptive survey method was employed using the questionnaire to collect data from respondents in 5 university libraries in Edo and Delta State. The data generated were analyzed by gender using frequency counts and percentages. The findings of the investigation show that majority of the librarians (both sex) experienced technostress using computers and it related technology, as a result of technological changes. And to copy with technostress in their various working places, they agreed to the various coping strategies and plans. Among the recommendation made were, management should organize technology base training in order to make them comfortable with new technology and qualified Information technologist should be employed to maintain the computers and it related technology in order to provide comfort to librarian.

Keywords: Computer, technostress, symptoms, causes

INTRODUCTION

Techno-stress is a modern disease of adaptation caused by an inability to cope with the new 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 (Brod, 1984), Fine (1986) turn Broad's classic definition upside-down by describing technostress as a clinical symptoms of phobia displayed by computer users as a new learned form of resistance. In other words, were Brod sees technostress as an illness caused by an inability to cope or adapt, Fine sees technostress adaptation to an unhealthy organization situation.

Twenty years ago, technology in library revolved around automation. The use of technology in library was simply a means for improving, enhancing library resources and services via automated cataloguing, circulation and acquisition systems. Today, automaton has been replaced with a technological environment defined as the array of institutional networks, hardware, and application needed to provide users with access to resources and services in diverse setting. This environment is supported by an infrastructure impacted by personnel and organization-related issues (Al-Qualiaf, 2006).

Amidst this technological evolution, the traditional library mission of services and access to resources is still relevant. These services and resources, however, are taking on new meaning and constructs (Jone, 1999). A by-product of working in technological environments is stress. Stress is inevitable and constant because the world is continuously changing.

Any change in a person's life, whether positive or negative, can produce stress. Technostress is especially likely to occur when new technologies are being introduced. Information technology may have revolutionized modern day life, but it has also brought with it new problems. With increasing levels of automation in libraries both users and staff often have to deal with concern over how technology is impacting their jobs, more and more information is available in a wide format.

Computer operating system and software versions are changing so fast that by the time staff (Librarian) gets used to one version of the software the next version get released. This by itself brings with it a feeling of insecurity, the fear of not being able to keep up with this

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technology fatigue. With the knowledge that any information is available in the library or can be accessed using the internet or online access to their libraries comes a new form of stress for librarian the fear of not being able to locate the information or information source for users. Librarians of apprehensive change, with library automation here to stay, technostress has entered our vocabulary (Sami and pangannaiah, 2006).

Purpose of research work

The purpose of the study is to;
Find out the sources/causes of technostress among librarians in university library.
Find out the symptoms signs of technostress among librarians in university libraries.
Investigate the strategies adopted by the librarians in university libraries in dealing with technostress.

Research question

What is the source/cause of technostress among librarians in university libraries?
What are the symptoms/signs of technostress experienced by librarian in university libraries?
How do librarians cope with technostress in university libraries?
What are the strategies put in place to overcome technostress?

Literature review

Library and information personnel in university now work assiduously in networked environment having bigger, better, and more technology remains one of the constant ways that they can manage their jobs. As new technology evolves, library operations change rapidly and librarians need to adapt to new plans, tasks and activities (Al-Qualiaf, 2006). These changes have many ramifications as far as librarians are concern. Many librarians find it very difficult to adjust to the new technologies. Technology is clearly changing the way we live and affecting the way we relate to others and ourselves but not always for the better. Technology can cause stress for those who use it. (Weil and Rose, n.d) Due to the introduction of new technology and rapid technological changes in university libraries, there is pressure on staff to make use of these technologies which can cause technological stress. This study is therefore undertaken to find out the sources/causes and signs/symptoms of technostress as well as coping strategies.

Causes of Technostress

Technostress cannot be easily explained; many factors have contributed to its development among librarians. Particularly susceptible are librarians who were working in libraries during the automation process of the 1970s and 1980s. This was a time of great change for all librarians. Perhaps, the biggest factor at play in the levels of technostress felt by librarians. Many managers did not allow sufficient training time when technologies were first introduced to libraries. However, the major error of many managers during the automation process was not to include them in the decision making process surrounding these new technologies. "What workers want most is to become masters of their immediate environment". (Frick, 1984, quoted in Deskshinamurit, 1985).

Clute (1998), given the following reasons as causes of technostress, which include, inexperience with computers, performance anxiety, lack of training/insufficient training, organizational factors, overwork/insufficient staffing, information overload, fast pace of change, language/jargon intimidation, multiple interfaces among others. Clute goes further to explain that the organizational factors, reflects poor management and management staff communication. When grouped with "lack of insufficient training" she suggest that employers can do much to reduce the impact of technostress on staff Miller (2002) describes how technology in libraries contribute to technostress for reference libraries technostress, helps improve reference services immeasurably, but they have feelings of being overwhelmed, finding it hard to keep up with the many varied tools now available with more reliance on new technologies creates an environment that never seems to nest".

Gorman (2001) and Kupersmith (1992) also list information over-load as a factor contributing to technostress in libraries. Also, Champion (1988), Gorman (2001), Poole (2001), Venfleet and Wallace (2003) all include rapid rate of change in technology as a factor of technostress in libraries, other include resources challenges, insufficient training, changing role in libraries, ergonomics, reliability of hardware or software, excessive workloads, outdated computers skill or software. The switch from offsite "Librarian mediated online database to on site user mediated" CD-ROM database. This technostress" may have effected ones skills as a database (de-skilled) (Bichtelert, 1986, Champion, 1988 Kupersmith, 1992). The introduction of the CD-ROM database present a new problem in that each system has different interfaces (e.g. Dos Windows, proprietary) and may employ different search protocols (Stone, 1993). The new CD-ROM system comes with little or no

documentation except internally based documentation like an F1 help screen or hypertext help menu.

The outdated computer equipment is another cause of technostress. The old 286 base 1B19-AT system have been replaced by 48.6 or Pentium system and the double speed CD-Rom with 4x, 6x, 8x, and 10x speed CD-ROMS. There is an increment of speed with each new hardware upgrade computers users seem to want computers to run faster and faster. Meanwhile institutions are slow to discard old computers will run and run (Hudiburge, 1996).

The internet is probably becoming the major causes of technostress due to the fact that many of new information site with no standard to how they are designed, maintained and updated. Dealing with the information overload is a real problem (Kupersmith, 1992). Moreso, users have to learn what to download and save to these floppies due to limitation of hard disk, space and the cost of paper, not to mention what they can/cannot email to themselves and other (Hudiburge, 1996). Planning for change is a common technostress portrayed by the advent of new online system will be implemented but which one is not known. When the system is installed and working, you are expected to know how to use and tech all about the new technology already (Moreland, 1993).

Symptoms of Technostress in Libraries

The sign and symptoms of technostress include a wide variety of physiological psychological and behavioural changes that are commonly recognized as part of the human condition. These changes are manifested in the form of physical and emotional exhaustion that involves a negative self concept and negative attitudes as well as loss of concern and feeling for others, especially those who are considered as stressors. Long-term stress may cause psychosomatic illness (Nawe, 1995).

Brod (1984), describe exhaustion, sore muscles in back/shoulder, an inability to relax after work and difficulty in sleeping as symptoms of technostress. Feeling of fear and intimidation are reported by Champion (1988); Weil and Rosen (n.d).

The most common symptom given for technostress as reported by Clute (1998) was panic, and anxiety, this was followed by feeling of isolation/frustration. Negative attitude towards computers was listed as third. Other includes irritability, anger, exhaustion, increased errors, absenteeism, illness, low morale/confidence. Burnout and difficulty concentrating.

Weil, Rosen and Sears (1987) opined that symptom of technostress is broadly divided into three different categories;
Anxious technophobe: exhibits the classic signs of an anxiety reaction when using technology; sweaty palm, heart palpitations and headaches.

Cognitive technophobe: on the surface is calm and relaxed, but internally seethes with negative messages, everybody but knows how to do this! Or I'll hit the wrong button and mess this machine up!
Uncomfortable user: may be slightly anxious or use some negative statement, but generally not in need of one on one counselling.

Coping Strategies with Technostress in Libraries

Coping is the process of managing external and internal demands that are perceived as tasking or exceeding a person`s resources. Coping may consist of behaviour or cognitive responses that are designed to reduce, overcome or locate the demands placed on the individual, known as coping strategies. (Huchiburge, 1996). According to Monat and Lazarus (1991) coping strategies have been classified into two major categories. Emotion focused strategies and problem-focused strategies. "Problem-focused coping refers to effort to improve the troubled person –environment relateionship by changing things for example, by seeking information about what to do, by holding back from impulsive and premature actions, and by confronting the person or persons responsible for ones difficulty. Emotion focused (or palliative) coping refers to thoughts or actions whose goal is to relieve the emotional impact of stress. These are apt to be mainly palliative in the sense that such strategies of coping do not actually alter the threatening or damaging condition but make the person feel better. Example are avoiding thinking about the trouble, denying that anything is wrong, distancing oneself as in joking about what makes one feel distressed or taking tranquilizer or attempting to relax" (Monat and Lazarus, 1991).

It's not surprising; given the result of Clute (1988) study that the majority of advice on coping with technostress is directed at management in libraries. Some of this advice is pertinent to staff as well, such as keeping your perspective and maintaining a sense of humuor (Champion, 1988). Champion suggested that libraries should;
Discuss technostress and plan for it.
Take breaks from technology
Take time to pay attention to the people with whom you work.
Exercise at the computer while it completes routine tasks
Set realistic goals
Ask for help when you need advice
Learn positive imaging
Mediate
Listen to stress reduction tapes
Get messages therapy (Compute specific) and / or cognitive
Use biofeedback software.

Table 1. Number of respondents

Sex	Frequency	Percentage
Male	39	56.52
Female	30	43.48
Total	69	100

Clark and Kalin (1996) offer the very practical suggestion, that staff use print resources when they are faster and easier to use. Huwe (2005) says that, "even though he gets little organizational support he makes it a priority to invest in thinking time and self training" and that this self-training helps him respond more effectively to sources of technostress.

Meichenbaum (1997) developed the stress management techniques called stress inoculation (SIT). Stress inoculation is a three stage process:

Education
Rehearsal
Application

During the first stage, education is given a framework for understanding her or his response to stressful event. During this phase data is collected by the individual, these data could be collected in the form of a diary as suggested by Greenberg (1990). The person should pay more attention to the "internal dialogue" that accompanies response to stressors. This will hopefully educate librarians by making them more aware of their responses to stress

During second stage (rehearsal), the librarian learns how to make cognitive self statements as a coping and problem solving skills. Example of coping self statement can be placed into the following categories with sample self- statement (Greenberg, 1990), preparing for a stressor you can develop a plan to deal with it, confronting and handling a stress one step at a time, you can handle the situation coping with the feeling of being overwhelmed keep the focus on the present, what is it you have to do?

The third state application has the individual use the information and skills learned during the first two stages (education and rehearsal) in actual stressful situations. It is appropriate to evaluate the use of the skill in low stress situations and then move on to higher situations. During the evaluation of these new skills, change can be made so the librarian can develop a set of self statements to effectively respond to most stressful situations.

MATERIALS AND METHODS

This study employed a descriptive survey method using the questionnaire to collect data from the respondents. In order to ensure that relevant items were included in the questionnaire extensive literature on the subject was consulted. And to ensure its face validity, the instrument was given to experts in the field to go through it.

The research instrument was administered to 79 librarians out of whom 69 copies were retrieved and used for the study from the five university libraries in Edo and Delta state. 34 from Delta State University, 16 from University of Benin library, 3 from Novena University library, 7 from Benson Idahosa University library and 9 from Igbinedion University library. The data generated were analyzed by gender using frequency counts and percentages.

RESULTS AND DISCUSSION

Of the 69 respondents, 39 are male while 30 are females, as can be seen in table 1. Table 1 showed that there are more male librarians 39 (56.52%) than female librarians 30 (43.48%). Table 2 showed that quick pace of technological change is the major causes of technostress among librarian in university library. With male 16 (41%) and female 11 (37%) who both agreed respectively. This is followed by lack of proper training on the use of technology by librarians with male 20 (51%) and female 13 (43%) who also agreed on this. Other causes identified in this study include poor users interface, lack of technical support among others. Some of the finding of this study corroborate with those by Clute (1998) who reported that inexperience with computers, lack of training/insufficient training are major causes/sources of technostress.

The findings also agree with Gorman (2001), Kupersmith (1992), Champion (2001), Poole and Denny (2001) and Venfleet and Wallace (2003) who also observed rapid rate of change in technology as a cause/source of technostress in libraries. Others include resources challenges, insufficient training, changing role in libraries, and reliability of hardware or software excessive workloads and complexity of new technology (Table 3). It can be seen from the analyzed data below. Muscles tension rank first as major sign/symptoms to technostress experienced by both sexes of librarians, with 9 (23%) of the male on strongly agree, 13(33%) of male on agree while 8 (27%) females strongly agree and 11 (37%) females also agree on this. Rapid heartbeat followed, with 8(21%) males who strongly agree and 11 (28%) males also agree on this, while female 7 (23%) strongly agree that panic/anxiety/fear, ranked second as the major sign/symptoms of technostress experienced by both sexes of librarians.

Another purpose of this study is to find out the symptoms of technostress experienced by both sexes of librarians. It was discovered that muscle tension was the major sign/symptoms of technostress among librarians, other includes rapid heartbeat, panic/anxiety and fear frustration, negative attitude towards computer, shaky hand and irritability anger etc.

Table 4 shows the coping strategies with technostress by both sexes of librarians in university libraries.

From this study the researcher discovered that the majority of the librarians (both sexes) have to adopt the coping strategies of discussing technostress and plan for it with male 13 (33%) and female 12 (40%) on strongly

Table 2. Causes / sources of technostress

Courses/courses of technostress	Sex	SA		A		D		SD		UD	
		N	%	N	%	N	%	N	%	N	%
The quick pace of technological change	Male	11	28	16	41	8	21	2	5	2	5
	Female	11	37	10	33	6	20	2	7	1	3
Lack of proper training	Male	12	31	20	51	3	8	2	5	2	5
	Female	13	43	11	37	4	13	-	-	2	7
An increased work load	Male	8	21	14	36	7	18	5	13	5	13
	Female	6	20	15	50	4	13	5	17	-	-
Lack of standardization with technology	Male	9	23	16	41	7	18	4	10	3	8
	Female	8	27	13	43	5	17	2	7	2	7
The reliability of hardware and software	Male	5	13	9	23	14	36	6	15	5	13
	female	7	23	6	20	15	50	2	7	-	-
Poor user interface	Male	9	23	11	28	9	23	6	15	4	10
	Female	6	20	20	67	4	13	-	-	-	-
Not enough involvement in the decision making process	Male	4	10	16	41	9	23	7	18	3	8
	Female	4	13	12	40	9	30	4	13	1	3
Slow network response time	Male	9	23	16	41	9	23	3	8	2	5
	Female	9	30	13	43	8	27	-	-	-	-
Growing users demand	Male	7	18	20	51	9	23	3	8	-	-
	Female	4	13	11	37	4	13	6	20	5	17
Health related problem cause by technology	Male	4	10	11	28	11	28	9	23	4	10
	Female	3	10	11	37	7	23	6	20	3	10
Things are two complicated (overall work environment)	Male	7	18	20	51	7	18	4	10	1	6
	Female	2	7	13	43	4	13	7	23	4	13
Security issues (viruses authentication)	Male	9	23	24	62	2	5	2	5	2	5
	Female	7	23	14	47	2	7	7	23	-	-
Language / jargons of technology	Male	4	10	17	44	4	10	9	23	5	13
	Female	7	23	11	37	4	13	6	20	2	7
Technological breakdown	Male	16	41	13	33	4	10	5	13	1	6
	Female	8	27	12	40	2	7	7	23	1	3
Increase management expectation	Male	4	10	21	54	9	23	3	8	2	5
	Female	4	13	11	37	7	23	5	17	3	10
Older technology (software and hardware)	Male	3	8	11	28	9	23	7	18	9	23
	Female	6	20	11	37	6	20	7	23	-	-
Application software	Male	4	10	16	41	7	18	9	23	3	8
	Female	3	10	14	47	7	23	6	20	-	-
Outdated computer skills.	Male	5	13	12	31	22	56	-	-	-	-
	Female	4	13	14	47	12	40	-	-	-	-
Lack of technical support	Male	13	33	20	51	3	8	3	8	-	-
	Female	13	43	10	33	4	13	3	10	-	-

agreed. This study also identified other major coping strategies adopted by librarians (both sexes) cultivation of flexible and continuous learning education with male 26 (67%) and female 11 (37%) on agreed, create better communication within the environment with male 26 (67%) and females 11 (37%) on agree, male 26 (67%) female 11(37%) also agreed that taking frequent break when working with technology as another ways of coping with technology. Others include buying more adequate user friendly hardware and software with male 13 (43%) and female 26 (67%) on agreed.

This table 4 also answer one of the purpose of the study which meant to investigate the strategies adopted by the librarians to deal with technostress in the following ways, discussion of technostress and planning for it, cultivation of flexible and continuous learning education, take frequent break when working with technology and buying more user friendly hardware and software etc. This study agreed with that of Champion (1988), who observed that librarians can cope with technostress in libraries in the following ways, discuss technostress and plan for it, take frequent break from technology, find

Table 3. Symptoms/sign technostress among both sexes of librarian

Symptom and signs	Sex	SA		A		D		SD		UD	
		N	%	N	%	N	%	N	%	N	%
Muscle tension	Male	9	23	13	33	9	23	3	8	5	13
	Female	8	27	11	37	6	20	4	13	1	3
Rapid heartbeat	Male	8	21	11	28	8	21	5	13	7	18
	Female	5	17	8	27	11	37	5	17	1	3
Panic/anxiety/fear	Male	1	6	11	28	11	28	8	21	8	21
	Female	7	23	10	33	8	27	5	17	-	-
Feeling of isolation	Male	4	10	11	28	12	31	9	23	3	8
	Female	2	7	12	40	8	27	8	27	-	-
Frustration	Male	3	8	12	31	12	31	8	21	4	10
	female	6	20	8	27	11	37	5	17	-	-
Negative attitude towards computer.	Male	4	10	11	28	11	28	8	21	5	13
	Female	3	10	10	33	8	27	9	30	-	-
Shaky hands	Male	2	5	15	39	12	31	5	13	5	13
	Female	2	7	14	47	8	27	4	13	2	7
Irritability anger	Male	3	8	13	33	8	21	9	23	6	15
	Female	4	13	12	40	12	40	1	3	1	3
Exhaustion	Male	2	5	12	31	12	31	10	26	3	8
	Female	3	10	11	37	8	27	2	7	6	20
Dizziness	Male	3	8	6	15	12	31	12	31	6	15
	Female	2	7	12	40	8	27	8	27	-	-
Tunnel vision	Male	3	8	11	28	8	21	12	31	5	13
	Female	2	7	7	23	12	40	8	27	1	3
Trembling lips	Male	3	8	14	36	11	28	6	15	5	13
	Female	2	7	13	43	8	27	2	7	5	17
Sweaty hands	Male	2	5	6	15	15	39	10	26	6	15
	Female	3	10	9	30	13	43	2	7	3	10
Panicky feelings	Male	2	5	12	31	10	26	9	23	6	15
	Female	3	10	8	27	11	37	6	20	2	7
Diarrhea and stomach problem.	Male	2	5	5	13	20	51	8	21	4	10
	Female	3	10	5	17	12	40	9	30	1	3
Feeling of loosing control	Male	2	5	12	31	11	28	11	28	3	8
	Female	2	7	8	27	8	27	8	27	4	13
Nausea.	Male	2	5	13	33	13	33	10	26	1	6
	Female	2	7	9	30	11	37	4	23	4	13
Nervousness	Male	1	6	12	31	11	28	9	23	6	15
	Female	1	3	11	37	8	27	7	23	3	10
Shaky knees	Male	1	6	7	18	13	33	11	28	7	18
	Female	1	3	2	7	9	30	8	27	6	20
Feeling of losing my mind	Male	2	5	7	18	10	26	13	33	7	18
	Female	1	3	6	20	11	37	12	40	-	-
Feeling of embarrassing myself	Male	2	5	10	26	12	31	11	28	4	10
	Female	3	10	11	37	8	27	8	27	-	-
Cold hands	Male	2	5	13	33	12	31	7	18	5	13
	female	2	7	13	43	8	27	2	7	5	17
Feeling of having a heart attack	Male	3	8	11	28	10	26	13	33	2	5
	Female	3	10	8	27	4	13	12	40	3	10
Visualization of thing going badly	Male	3	8	13	33	7	18	9	23	7	18
	Female	3	10	13	43	6	20	7	23	1	3

Table 4. Strategies for coping with technostress male (n=39) female (n=30) percentage (%=100)

Coping strategies	Sex	SA		A		D		SD		UD	
		N	%	N	%	N	%	N	%	N	%
Cultivation of flexible and continuous learning education	Male	11	28	26	67	2	5	-	-	-	-
	Female	12	40	11	37	4	13	3	10	-	-
Buying more adequate user friendly hardware and software	Male	9	23	25	64	5	13	-	-	-	-
	Female	7	23	13	43	7	23	1	3	2	7
Create better communication within the environment	Male	8	21	26	67	5	13	-	-	-	-
	Female	12	40	11	37	6	20	-	-	1	3
Maintain an ever present system in training and education to new and old technology	Male	7	18	22	56	4	10	-	-	6	15
	Female	7	23	20	67	3	10	-	-	-	-
Take a deep breath and keep plobbing on.	Male	7	18	14	62	5	13	2	5	1	6
	female	4	13	11	37	9	30	2	7	4	13
Take frequent breaks	Male	5	13	26	67	7	18	1	6	-	-
	Female	9	30	11	37	4	13	2	7	4	13
Use bio feedback software and mediate	Male	9	23	11	28	9	23	2	5	8	21
	Female	9	30	10	33	7	23	-	-	4	13
Discuss technostress and plan for it.	Male	13	33	16	41	4	10	2	5	4	10
	Female	12	40	13	43	3	10	-	-	2	7
Get message therapy (computer specific) and or cognitive therapy.	Male	8	21	13	33	6	15	4	10	8	21
	Female	11	37	13	43	2	7	3	10	1	3
Set achievable goals	Male	12	31	20	51	5	13	2	5	-	-
	Female	11	37	11	37	4	13	4	13	-	-
Seek/find group goals	Male	10	26	24	62	3	8	2	5	-	-
	Female	11	37	14	47	2	7	-	-	3	10
Exercise the computer while it complete routine tasks	Male	8	21	24	62	2	5	2	5	3	8
	Female	7	23	11	37	6	10	2	20	4	13

group support, use bio feedback software, listen to stress reduction tapes, give time to exercise at the computer while it complete task etc. This study is also agree with Kalin and Huwa (2005), who recommended that personal time management strategies; self education and sharing are technostress coping methods.

CONCLUSION

Base on the finding of the study, it could be concluded that librarian in the university libraries experience technological stress when they use computer related technologies. Some of the causes/sources have been discovered to be rapid technological change, lack of technical support and negative attitude towards computer and inadequate technical support.

Most librarians experience the symptoms of muscle tension and shaky hand when they use computer related technologies. This study has also revealed that librarian cope with technostress in the following way, discuss technostress and plan for it, buying more user friendly hardware and software and take frequent break from computer related technological among others.

The following recommendations are made in the light of the findings from the study survey outlined in these articles.

Library managers should organize technology-based training for librarians in order to make them comfortable with new technologies and more aware of their dangers.

Since technology skills are important part of most library and information jobs, librarians should make sure they acquire technological skills continuously.

University libraries should employed qualified information and technology specialist and troubleshooters to maximize system accessibility and provide a level of comfort to the librarians.

Positive attitude towards computers and sensible coping management strategies will ease technostress and benefit.

If such recommendations are followed, librarians in university libraries in Nigeria will look forward to being able to work in a technological stress free environment.

REFERFENCES

Alquallaf C (2006). Librarian and technology in Academic and research Libraries in Kuwail. Perceptions and effects. Libr. 55:168-179.

Bicheler J (1986). Human Aspects of high tech in special libraries. Spec. Librt. 9, (3), 121-128.

Brod C (1984). Technostress: The Human Cost of the Computer Revolution. Reading, MA: Addison-Wesley.

Champion S (1988). Technostress: Technology's Toll. Sch. Libr. J. 23(3):48-51.

Clark K, Kalin S (1996). Technostrees out? How to cope in the Digital age. Libr. J. 12(13) 30-32

Clute R (1998). Technostress: A content Analysis. (Unpublished master's Thesis), Kenth State University.

Dakshinamuriti G (1985). Automation's effect on library personnel. Can. Libr. J. Pp. 343-351.

Dakshinamuriti, G. (1985). Technostress. Retrieved on September 9, 2007 from http://www.slais.ubu.ca/course/libr500/0506wt2www/c-gack/media/symptom.gif.

Fine SF (1986). Terminal Paralysis or showdown at the interface. In human aspect of library automation: Helping staff and patrons cope. Paper presented at the 1985 clinic on library application of data processing. Graduate School of Library and Information Science, university of Illinois, April 14 th – 16th, 1986

Gorman M (2001). Technostress and library value. Libr. J. 26(7) 48-50.

Greenberg JS (1990). Comprehensive Stress Management. Dubuque: wm. C. Brown.

Harpe S (2000). Managing technostress in UK Libraries. A realistic Guide, Retrieved September 12, 2007 from http://www.ariadne.cu.uk/issue25technoistress

Hudiburg RA (1996). Assessing and Managing Technostress. Retrieved on March 19, 2006. From www.una.edu/psychology/alakslk.html

Huwa TK (2005). Running to Stand Still? Comput. Libr. 25(8):34-36.

Jones DE (1999). Ten years later. Support staff perceptions and opinion on technology in the workplace. Libr. Trends. 47(4):711-745.

Kupersmith J (1992). Library technostress survey result. Ref. Serv. Rev. 20:7-14.

Meichenbaum D (1997). *Cognitive-behaviour modification, an integrative approach*. New York: Plenum.

Miller R (2002). Electronic resources and the academic library. Encyclopedia of library and information science. New York: Marcel Dekker Inc.

Monat A, Lazarus RS (1991). Stress and Coping: Some current issues and controversies. In A. Monat & R. S. Lazarus (Eds). *Stress and coping, 3rd Ed.* New York: Cloumbia Lenic. Press,

Moreland VF(1993). Technostress and Personality. Online. 17(4):59-62.

Nawe J (1995). Work related stress among the library and information workforce. Libr. Rev. 44(6):30-37.

Poole CE, Denny E (2001). Technological change in the workplace: A Statewide Survey of Community College Library and learning resources personel. Coll. Res. Libr. 62(6):503-515

Sami LK, Pangannaiah NB (2006), Technostress, A literature Survey on the effect of information on library users. Libr. Rev. 55(7):429-439.

Stone SA (1993), Sidebar 6: technostress, taking some steps to cope, Libr. Hitech. 11(3):35-36.

Van Fleet C,Wallace DP (2003). Virtual libraries-Real threats. Ref. Users Serv. Q. 42(3):188-191

Weil MM, Rosen LD, Sears DC (1987). The computerphobia reduction program: Year 1. Program development and preliminary results. Behav. Res. Methods Instrum. Comput. 19(2): 180-184.

Weil MW, Rosen LD. (n.d). Four-year study shows more technology@work and @ Home but more hesitancy About Trying New Technology. Retrieved on March 19, 2006 from www.human-warecom/businesstudy.html.

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