



Technology induced Library Anxiety among Shri B M Patil Medical College and Research Centre: Is gender a parameter?

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ABSTRACT

This study investigates technology-induced library anxiety among Shri B M Patil Medical College and Research Centre, Vijayapura, Karnataka, India, focusing on whether gender is a significant factor. Data were collected using a survey method to assess technology-induced library anxiety. The results reveal that female students experience significantly higher technology anxiety compared to their male peers. Addressing these differences is crucial for fostering an inclusive and equitable learning environment where all users can effectively utilise library resources to succeed academically.

Keywords: ICT, Library Anxiety, Medical Colleges, Technology, User Community

1. Introduction

Information and Communication Technologies (ICTs) have revolutionised how libraries operate and provide services. While ICTs have enhanced the accessibility and availability of information, they have also introduced a new set of challenges for library users. Technology-induced library anxiety is a phenomenon that has emerged as a result of the increasing reliance on digital technologies in libraries. This anxiety manifests as feelings of overwhelm, frustration, and intimidation when using digital library systems, databases, and online resources.

The rapid adoption of ICTs in libraries has created a technology-rich environment that can be daunting for some users. The complexity of digital systems, constant updates, and the need for technical skills have contributed to the rise of technology-induced library anxiety. Some common causes include Information overload, difficulty navigating, digital interfaces, fear of technology, and limited technical skills. These factors can lead to feelings of anxiety, avoidance, and frustration, ultimately hindering patrons' ability to use library resources effectively. This article explores whether technology-induced library anxiety is influenced by gender, exploring differences in experiences and coping mechanisms among users.

2. Review of Literature

Bhatti, Batool, and Malik (2013) conducted a study which found that students face issues such as electricity failure, a limited number of computers, slow internet speed, and a lack of awareness regarding library usage. This fear of using the library can be attributed to the lack of search skills and the inability to use ICTs. Consequently, users may become unwilling to use libraries (**Jiao and Onwegbuzie, 1997**)

In **1992, Bostick** highlighted that interacting with computers in libraries can be a major source of stress for individuals. Nowadays, electronic resources have replaced print materials due to technological advancement. Consequently, some students who struggle with adapting to this transition may feel anxious and fearful about visiting the library, as noted by **Kohrman (2003)**.

Krotoski (2010) emphasised the importance of understanding the needs of current library users. He predicted that the library visitors of the future would have expectations and demand interactive catalogues with comprehensive data accessible on multiple devices at any time. Simple technology can enable libraries to provide services such as an interactive catalogue displaying self-information, location of rooms, seat availability and library collection. In addition, libraries should arrange digital literacy programs and training sessions for students on how to use e-books, online journals and databases. Interactive technology can also be employed to lower the anxiety of library users by providing useful information and services.

In **2015, Singsoni, Firdaus and Thiyagarajan** surveyed 110 post-graduate students at Pondicherry University in India to measure their level of library anxiety. They found that the students were comfortable using technology at the university, contributing to their low library anxiety level. Similarly, a study by **Shafique, Shafiqur-Rehman and Mahamood (2012)** stated that implementing technology to guide and assist students when visiting the library can help reduce their anxiety levels.

2. Objectives

1. To identify the causes of technology-induced library anxiety
2. To examine gender differences in technology-induced library anxiety
3. To assess the impact of ICT on library anxiety

3. Methodology

The present study has been undertaken to assess technology-induced library anxiety among Shri B M Patil Medical College, Vijayapura students. The survey method of research was used. A structured, closed-ended questionnaire was used as a research tool for data collection. The questionnaire was distributed among 80 students, of which 67 respondents replied. The data were analysed using Statistical Package for the Social Sciences (SPSS v 20).

Need for the study

Many researchers have highlighted various dimensions of library anxiety, but the potential influence of gender remains unexplored. Investigating whether gender differences exist in technology-induced library anxiety can provide valuable insights into the specific needs and challenges faced by different user groups. Understanding technology-induced library anxiety can guide the development of targeted interventions and support systems, ensuring equitable access to library resources and fostering a more inclusive learning environment. Studies in

this area are crucial for enhancing user experience and promoting digital literacy across diverse populations.

Significance

Addressing technology-induced library anxiety is crucial for ensuring equal access to information and promoting digital inclusion. By understanding the causes and consequences of this phenomenon, libraries can develop targeted interventions to support patrons’ needs, ultimately enhancing their overall library experience.

4. Results and Discussion

Gender	Frequency	Percentage
Male	38	56.7
Female	29	43.3
Total	67	100

Table 1. Gender-wise distribution

Table 1 shows that 56.6% (N=38) of respondents are male users, and the remaining 43.3% (N=29) of respondents are female. It shows that the majority of respondents are male.

	Frequency	Percentage
General Surgery	35	52.2
Pediatrics	5	7.5
Human Anatomy	7	10.4
Orthopedics	3	4.5
Psychiatry	10	14.9
Anatomy	2	3.0
Human Physiology	5	7.5
Total	67	100

Table 2. Branch-wise distribution

Usage of Technology at the entrance	Male (x)	Female (x)	Total(x)
I find it stressful to use the electronic access cards at the library entrance	0.39	0.37	0.38
The security technology at the entrance is overwhelming	0.31	0.31	0.31
I worry about the effectiveness of the entrance scanners	0.10	1.97	1.16
The turnstile technology is confusing and stressful to use	1.0	1.0	1.0
The digital information boards at the entrance are difficult to understand	0.71	0.65	0.06
The entrance technology often malfunctions, increasing my anxiety	0.52	0.41	0.47
The entrance technology is user-friendly and easy to use	0.52	0.24	0.40
I often need assistance to use the entrance technology correctly	0.13	0.42	0.29

Table 3. Usage of Technology at Entrance x

Table 2 shows that most users are from General Surgery, comprising 52.2% (N=35). Psychiatry follows with 14.9% (N=10), Human Anatomy with 10.4% (N=7), Pediatrics and Human Physiology each with 7.5% (N=5), Orthopedics with 4.5% (N=3), and Anatomy with 3% (N=2).

Table 3 shows technology usage at the library entrance, showing notable gender differences. Female users worry more about the effectiveness of entrance scanners (\bar{x} -1.97) compared to male users (\bar{x} -0.10). Using electronic access cards and security technology at the entrance is less stressful for both genders, scoring around 0.38 and 0.31, respectively. Digital information boards are slightly more difficult for male users (\bar{x} -0.71) to understand than female users (\bar{x} -0.65). Anxiety about malfunctioning entrance technology is higher in male users (\bar{x} -0.52) than female users (\bar{x} -0.41). Both genders find entrance technology user-friendly, scoring a mean value of around 0.40. Female users need more assistance with entrance technology (\bar{x} -0.42) compared to male users (\bar{x} -0.13).

Facilities	Male (x)	Female (x)	Total(x)
I find it stressful to operate the library computers	1.6	2.5	2.02
The software on library computers is confusing	2.7	2.4	2.61
I find it stressful when the fans turn on and off automatically	1.15	1.2	1.17
I find it stressful to connect to the library's internet	1.5	1.6	1.58
The speed of the internet often causes me concern	1.7	2.0	1.91
The online question bank interface is confusing	2.55	2.3	2.46
The online suggestion box interface is confusing	1.97	1.96	1.97
I find it stressful to locate available electric outlets	1.68	2.3	1.95
I find it stressful when the lights turn on and off automatically	2.06	1.82	1.86

Table 4. Library Facilities

Table 4 compares male and female users' perceptions of library facilities. Female users find operating library computers more stressful (\bar{x} =2.5) compared to male users (\bar{x} =1.6). Both genders find the software on library computers equally confusing (\bar{x} =2.61). Stress levels when fans turn on and off are similar for both genders, with an average of 1.17. Connectivity to the library's internet and concerns about internet speed are equally moderate, scoring mean values around 1.58 and 2.00, respectively. Female users find the online question bank (\bar{x} =2.3) and

Digital Library	Male (x)	Female (x)	Total (x)
I feel anxious about using a digital library	2.18	2.3	2.23
I worry about missing important information when using a digital library	1.52	2.7	2.04
I worry about the accuracy of information found in digital library	2.0	2.1	2.04
I often get lost when navigating through digital library resources	1.7	1.7	1.74
The search functions in digital library are confusing	2.3	2.17	2.25
I find it overwhelming to access books online	2.23	2.27	2.25
The process of downloading e-books is confusing	2.23	1.9	1.98
I worry about compatibility issues when accessing e-books on different devices	1.7	1.8	1.76
Online access to books often fails, causing me frustration	2.5	2.27	2.41
I prefer physical books over e-books due to the complexities of online access	1.7	1.6	1.73

Table 5. Digital Library

suggestion box interfaces more confusing than male users, with respective mean totals of 2.46 and 1.95. Locating electric outlets is slightly more stressful for female users ($\bar{x}=2.3$) than male users ($\bar{x}=1.68$).

Table 5 shows the level of anxiety and challenges faced by male and female users when using a digital library. Female users are more anxious about missing important information ($\bar{x}=2.7$) than male users ($\bar{x}=1.52$). Both genders find search functions and accessing books online equally confusing ($\bar{x}=2.3$). Issues like the accuracy of information ($\bar{x}=2.04$), getting lost ($\bar{x}=1.74$), and preference for physical books ($\bar{x}=1.73$) are also highlighted, indicating overall user difficulties with digital libraries.

Online tutorials and Guides	Male (\bar{x})	Female (\bar{x})	Total (\bar{x})
Online tutorials help me understand how to use library resources	3.4	3.6	3.55
Step-by-step video tutorials make it easier for me to navigate the library system	2.93	3.0	2.95
I prefer using interactive guides over printed instructions	3.1	3.2	3.14
Online tutorials have reduced my anxiety about using the library	3.3	3.55	3.43
I feel more confident using library resources after viewing online tutorials	3.6	3.6	3.67

Table 6. Online tutorials and guides

Table 6 shows gender differences in the perception of online tutorials and guides for library resources. Female users find online tutorials more helpful ($\bar{x}=3.6$ vs. $X=3.4$) and anxiety-reducing ($\bar{x}=3.55$ vs. $X=3.3$). Both genders feel equally confident ($\bar{x}=3.6$) after using tutorials. Interactive guides are slightly preferred by female users ($\bar{x}=3.2$ vs. $\bar{x}=3.1$), and video tutorials are more beneficial for female users ($\bar{x}=3.0$ vs. $X=2.93$).

Mobile Apps	Male (\bar{x})	Female (\bar{x})	Total (\bar{x})
The library's mobile app is challenging to use	2.57	2.51	2.55
I feel stressed when trying to access library resources via the mobile app	2.52	2.24	2.40
The mobile app often has technical issues that cause me anxiety	2.21	2.27	2.23
I prefer using the library's website over the mobile app	2.36	2.82	2.56
The library's mobile app does not meet my needs effectively	2.34	2.24	2.27

Table 7. Mobile Apps

Table 7 shows the gender differences in perceptions of the library's mobile app. Male users ($\bar{x}=2.57$) and female users ($\bar{x}=2.51$) find the app similarly difficult to use, with a total average of 2.55. Female users ($\bar{x}=2.24$) feel less stressed than male users ($\bar{x}=2.52$) when accessing

Online Catalogue	Male (\bar{x})	Female (\bar{x})	Total (\bar{x})
Using the online catalogue is stressful for me	3.21	3.75	3.44
I find the search functions in the online catalogue confusing	2.94	3.48	3.17
The online catalogue often provides too many irrelevant results	3.23	3.65	3.41
I feel anxious about not being able to find the books I need using the online catalogue	3.21	3.34	3.26

Table 8. Online Catalogue

resources. Technical issues cause slightly more anxiety for female users ($\bar{x} = 2.27$) than male users ($\bar{x} = 2.21$). Female users ($\bar{x} = 2.82$) prefer the library's website more than male users ($\bar{x} = 2.36$) over the mobile app. Lastly, the app's effectiveness is rated lower by males ($\bar{x} = 2.34$) than females ($\bar{x} = 2.24$). It can be interpreted that the mobile app is seen as suboptimal, especially by female users.

Table 8 shows gender differences in responses to the online catalogue. Female users find using the catalogue more stressful ($\bar{x} = 3.75$) compared to male users ($\bar{x} = 3.21$) and are more confused by the search functions ($\bar{x} = 3.48$ vs $X = 2.94$). They also encounter more irrelevant results ($\bar{x} = 3.65$) than male users ($\bar{x} = 3.23$). Additionally, female users feel slightly more anxious ($\bar{x} = 3.34$) than male users ($\bar{x} = 3.21$) about not finding the needed books. Overall, the total scores indicate that the online catalogue is generally more challenging for female users, with averages reflecting higher stress and confusion levels.

RFID Technology	Male (\bar{x})	Female (\bar{x})	Total (\bar{x})
I worry about RFID errors during the checkout process	2.44	2.78	2.64
The process of checking out books with RFID is stressful	2.07	2.31	2.17
I find RFID technology confusing and difficult to use	2.21	2.24	2.22
I feel anxious about the privacy implications of RFID technology	2.75	2.94	2.86

Table 9. RFID Technology

Table 9 explores the gender differences in responses to RFID technology in the library. Female users worry more about RFID errors during checkout ($\bar{x} = 2.78$) than male users ($\bar{x} = 2.44$), with a total average of 2.64. Female users find the checkout process with RFID more stressful ($\bar{x} = 2.31$ vs $X = 2.07$). Both genders find RFID technology confusing and difficult to use, with similar scores ($\bar{x} = 2.2$). Female users are more anxious about the privacy implications of RFID ($\bar{x} = 2.94$ vs $X = 2.75$). These results indicate that female users are more concerned about errors and privacy.

Automated Circulation System	Male (\bar{x})	Female (\bar{x})	Total (\bar{x})
The instructions for using automated circulation systems are confusing	0.96	1.47	1.25
Automated circulation systems often malfunction, causing me anxiety	0.34	0.52	0.44
The self-checkout kiosks are difficult to use	0.00	1.21	0.68
I worry about making mistakes when using automated systems	0.89	0.84	0.86
The RFID technology in the circulation section is confusing	0.37	0.44	0.41

Table 10. Automated Circulation System

Table 10 shows the gender differences in responses to the automated circulation system in the library. Female users ($\bar{x} = 1.47$) find the instructions for using automated systems more confusing than male users ($\bar{x} = 0.96$). Female users also report higher anxiety due to system malfunctions ($\bar{x} = 0.52$ vs $X = 0.34$). The self-checkout kiosks are perceived as more difficult to use by female users ($\bar{x} = 1.21$) than male users ($\bar{x} = 0.00$). Regarding worrying about making mistakes, both genders have similar scores, with female users slightly higher ($\bar{x} = 0.84$ vs $X = 0.89$). Finally, both genders see the RFID technology in the circulation section as confusing, with male users ($\bar{x} = 0.44$) slightly more confused than male users ($\bar{x} = 0.37$). These results suggest that female users find the automated systems and related instructions more confusing and anxiety-inducing compared to male users.

Digital Reference Services	Male (\bar{x})	Female(\bar{x})	Total(\bar{x})
I feel anxious using the digital reference resources	1.65	2.17	1.88
I worry about not finding the right information in the reference section	1.21	2.27	1.67
I feel overwhelmed by the number of digital reference resources available	1.34	2.20	1.71
I find chat based help desks useful for getting quick answers	1.68	1.68	1.68
Email support makes it easier for me to ask for help from reference librarians	1.36	1.44	1.40

Table 11. Digital Reference Services

Table 11 shows the differences in anxiety and usability perceptions of digital reference services between male and female users. Female users report higher anxiety using digital reference resources, scoring 2.17 compared to male users at 1.65, resulting in an average of 1.88. Concerns about not finding the right information in the reference section are more pronounced in female users (\bar{x} =2.27) than male users (\bar{x} =1.21). Female users also feel more overwhelmed by the number of digital reference resources available, scoring 2.20 against male users (\bar{x} =1.34). Chat-based help desks are equally useful for both genders, with a mean score of 1.68. Email support is slightly more helpful for female users (\bar{x} =1.44) than male users (\bar{x} =1.36).

Online Databases	Male (x)	Female(x)	Total(x)
Using online databases feels overwhelming due to the vast amount of information	3.31	3.68	3.47
I often get lost trying to navigate through different databases	3.07	3.31	3.17
The search options in online databases are confusing	3.05	3.31	3.16
I feel anxious about not finding the right articles in online databases	3.44	3.79	3.59
The technical aspects of using databases increase my anxiety	3.02	3.34	3.16

Table 12. Online Databases

Table 12 shows the difficulties and anxieties associated with using online databases. It highlights male and female users' challenges in navigating and utilizing these resources. Female users report higher levels of overwhelm due to the vast amount of information (\bar{x} =3.68) compared to male users (\bar{x} =3.31). Getting lost while navigating databases is another common issue with female users (\bar{x} =3.07). The search options within online databases are equally

Usage of Technology in Serial Control	Male(x)	Female(x)	Total(x)
The usage of ICT in managing serials (journals, magazines, etc) makes me anxious	3.71	4.0	3.83
I find difficulty in the usage of digital interfaces for accessing serials (journals, magazines, etc)	2.78	3.0	2.88
The automated system for tracking serial subscriptions is overwhelming	3.42	3.34	3.38
I worry about missing issues or updates due to the digital serial control system	3.15	3.65	3.37
The digital serial control system is user-friendly and easy to navigate	2.86	3.00	2.92

Table 13. Usage of Technology in Serial Control

confusing for both genders, with a slight edge for female users ($\bar{x}=3.31$ vs. $X=3.05$ for male users). The anxiety about finding the right articles is significantly higher for female users ($x=3.79$) than male users ($\bar{x}=3.44$). Lastly, the technical aspects of using databases also increase anxiety more for female users ($\bar{x}=3.34$) compared to male users ($\bar{x} =3.02$). The total averages reflect a higher level of discomfort and anxiety for female users across all aspects of online database usage.

Table 13 presents gender-based differences in the use of technology for serial control in libraries. Female users report higher anxiety about using ICT for managing serials ($\bar{x}=4.0$) compared to male users ($\bar{x} =3.71$). They also find it slightly more difficult to use digital interfaces for accessing serials, scoring 3.0 against male users $X=2.78$. The automated system for tracking serial subscriptions is perceived as more overwhelming by female users ($\bar{x}=3.34$) than male users ($\bar{x}=3.42$), with an average score of 3.38. Concerns about missing updates due to the digital serial control system are higher among female users ($\bar{x}=3.65$) than male users ($\bar{x}=3.15$). Lastly, the system’s user-friendliness and ease of navigation receive a higher score from female users($\bar{x}=3.0$) than male users ($\bar{x}=2.86$).

Usage of Technology in Washrooms	Male(\bar{x})	Female(\bar{x})	Total(\bar{x})
The automated faucets in the library washrooms make me anxious	2.34	1.93	2.16
I feel overwhelmed using the automated hand dryers in the library washrooms	2.07	2.37	2.20
I find it stressful to use the sensor-based toilets in the library	2.50	2.0	2.28
The digital signage in the washrooms is confusing	1.89	1.82	1.86
I worry about the functionality of automated soap dispensers	1.92	2.17	2.02
The touchless features in the washrooms are difficult to use	1.86	1.9	1.91
I prefer manual fixtures over automated ones in the washrooms	1.92	2.55	2.19
The technology in the washrooms often malfunctions, causing me stress	2.91	2.55	2.7
I avoid using the washrooms due to the high level of technology	2.00	2.55	2.23
The automated lighting system in the washrooms increases my anxiety	1.94	1.9	1.95
I find the digital temperature controls in the washrooms confusing	2.02	2.20	2.10
The technology in the washroom is user-friendly	1.92	1.86	1.89
I often need assistance to use the technology in the washrooms	1.65	1.65	1.65

Table 14. Usage of Technology in Washrooms

Table 14 shows technology usage in library washrooms and the associated stress levels for male and female users. Male users report higher anxiety about automated faucets ($\bar{x}=2.34$) compared to female users ($\bar{x}=1.93$), with an overall average of $X=2.16$. Conversely, female users feel more overwhelmed using automated hand dryers ($\bar{x}=2.37$) than male users ($\bar{x}=2.07$). Male users find sensor-based toilets more stressful to use ($\bar{x}=2.50$) compared to female users ($\bar{x}=2.0$), with a total mean score of 2.28. Digital signage in washrooms is almost equally confusing for both genders, with scores of 1.8. Female users worry more about the functionality of automated soap dispensers ($\bar{x}=2.17$) compared to male users ($\bar{x}=1.92$). Touchless features in washrooms are found to be slightly more difficult to use by female users ($\bar{x}=1.96$) than male users ($\bar{x}=1.86$), with an average score of 1.91. Female users also show a stronger preference for manual fixtures over automated ones, with a mean scoring of 2.55 against male users of 1.92. Lastly, female users report higher stress from malfunctioning technology in washrooms ($\bar{x}=2.55$) than male users ($\bar{x}=2.91$).

Recommendations

1. Provide technology training and support to the users to enhance utility
2. Simplify digital interfaces and resources for ease of access
3. Promote digital literacy and online skills to ensure high usage
4. Offer one-on-one assistance and guidance for easy navigation
5. Create a welcoming and inclusive library environment to improve digital services

Conclusion

The study highlights a significant gender disparity in technology-induced library anxiety among medical students, with female users experiencing higher levels of anxiety compared to their male peers. This heightened anxiety among female users suggests that gender is a critical factor influencing students' comfort and proficiency with digital library resources. The underlying causes of this disparity may include varying degrees of familiarity, confidence, and prior exposure to technology between genders. Addressing this issue is essential for fostering an inclusive and supportive academic environment.

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