Preference, Challenges, and Satisfaction with Using E-Books: Is There a Gender Difference among Omani Nursing Students?

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Abstract—With the growing popularity of technology among millennial nursing students and the shift in publishers' focus toward electronic textbooks (e-books), there is a need to understand students' perceptions, preferences, and satisfaction related to e-books in nursing education, particularly in Oman, a country in the Gulf region with a lack of studies on this subject. This study examined the perceived usefulness, challenges, and satisfaction with e-books compared to printed textbooks, among Omani nursing students. A descriptive cross-sectional design was employed, and data were collected from a convenience sample of 77 students who used e-books in a community health nursing course. A valid and reliable survey was administered during the fall 2020 semester. The findings revealed that despite identifying more challenges associated with printed textbooks, the majority of students (74%) preferred them to e-books. Additionally, 71.4% of students reported a low level of satisfaction with e-books. Female students demonstrated a higher preference for printed textbooks and lower satisfaction with e-books compared to male participants. These results highlight the need to address students' concerns and preferences when implementing e-books in nursing education. This study contributes to the understanding of nursing students' preferences and satisfaction with e-books, as well as the gender differences observed in this context. Further research is needed to investigate interventions to improve the adoption and effectiveness of e-books in nursing education.

Keywords—electronic books, textbooks, nursing students, preference, satisfaction, Oman

1 Introduction

The internet has transformed the lives of students worldwide. It has changed the ways in which they communicate and socialize with others, and most importantly, it has enormously affected their learning [1]. The internet has also affected students' reading patterns and with widespread advancement in technology, has led to changes in their university textbooks and wider academic lives [2]. Electronic books, commonly known as e-books, have gained substantial interest recently, due to the many potential

benefits they have over printed textbooks [3]. E-books can be defined as the electronic version of printed textbooks which can be read on a computer or any other electronic device [4]. E-books are easily accessible, flexible (they can be used at any time), dynamic, and cheaper than their printed counterparts [5]. Although there is evidence that other forms of technological advancement have helped to enhance students' learning outcomes, engagement with lectures, and their level of satisfaction with their learning environment [6], the benefits of using e-books have not yet been extensively investigated.

Numerous learning theories emphasize the potential benefits of using electronic multimedia for education. In our study, we followed two prominent learning theories: the Multimedia Learning Theory and the Technology Acceptance Model. The Multimedia Learning Theory, developed by Mayer and colleagues [7], posit that using both visual and auditory channels for learning is essential. This theory implies that e-books may offer multimedia learning opportunities, as they can embed videos and interactive elements within the electronic versions of the books. This has the potential to impact students' preferences and satisfaction. Furthermore, the Technology Acceptance Model aims to investigate users' acceptance of technology based on perceived ease of use and perceived usefulness. This model could help explain whether gender differences exist in the acceptance of e-books versus printed textbooks [8].

The pandemic has made the use of electronic devices a necessity. Since then, e-learning has become increasingly essential, and many universities that already had an e-learning platform, but did not use it before the pandemic, saw a significant increase in its use during the pandemic [9]. Moreover, many new e-learning tools have been developed to help teachers better understand their students' strengths and weaknesses, evaluate lessons, improve the educational process, and assess their own performance [10]. During the COVID-19 pandemic, the use of e-books became necessary due to the closures of universities and libraries worldwide, signifying how beneficial e-books can be for the continuation of education in uncertain times such as a pandemic.

Probably one of the most major benefits of e-books is their lower cost compared to printed textbooks [5]. Another important feature that could interest students, is their convenience. Students can access e-books remotely, from the comfort of their home, they can annotate, add documents, and copy and paste sentences into their notes, and searching for a key word has never been easier [11]. These annotative capabilities are one of the best features of e-books. Moreover, e-books are easy to carry–students do not have to hold heavy books when they can carry their e-book in their pocket [12]. The last notable benefits are that research has shown that e-books can optimize reading time, as students can study whenever they want, including on their way to and from the university and that reading an e-book is fun and engaging [12, 13].

Although they are convenient and cost-effective, studies have shown that e-books can pose some challenges to students. While e-books can be read on smartphones, some students complain that the small size of a phone's screen can make reading difficult, especially in combination with a phone's limited system for navigating the text. Additionally, some students feel disoriented when reading an e-book on a screen [3], and the limited battery life of current smartphones poses a challenge for the wider adoption of e-books [14]. Therefore, often students feel compelled to buy e-book readers which

have a bigger screen, better lighting, and a better navigation system, but are more expensive. This negates the advantage of e-books being cheaper than printed textbooks.

Results to date are conflicting on whether students prefer e-books or printed textbooks. On the one hand, Lim and Hew [14] have found that the use of an e-book by tertiary level diploma students of the life science and engineering fields was perceived positively and increased students' engagement. Other studies have also found that students' level of satisfaction with e-books is generally very high, and this is due to the better availability and easy access of e-books [15, 16]. Shelburne [17] has argued that the increased use of e-books in higher education is affecting students' perceptions and attitudes, and that students find e-books superior to printed textbooks. On the other hand, students have also complained that e-books do not allow them to assess the length of paragraphs and that it is difficult to read tables and graphics in an e-book format [18]. Students have also complained about spending long hours staring at screens when reading e-books and reported issues arising from long screen times [19]. According to a study by Gregory [20], 66% of students preferred a printed textbook over an e-book, whereas only 44% had a positive attitude towards both types of books. Currently, most e-books are merely the same version as the traditional book, which is instead read online, limiting the potential benefits of the electronic version.

Gender differences have been studied in relation to the acceptance of e-books [21]. For example, research has shown that females tend to prefer printed books while males are more inclined to use e-books [22]. This difference may be attributed to the fact that males are generally more technologically savvy than females [21]. A study conducted in the United States also found that men are more likely to select e-books, while women are more likely to choose printed textbooks. However, regarding satisfaction, usefulness, and ease of use of e-books, there is no significant difference between genders [23]. Conversely, a study from South Africa revealed that gender has no effect on the intention to use e-books [24]. On the other hand, a study from Libya found that females are more confident in using e-books than males [25].

The findings of various studies on the comparative effectiveness of e-books and printed textbooks, as well as the potential impact of gender, have been inconclusive. Consequently, further research is required to investigate these questions more thoroughly. Also, many these challenges have only been observed for students in Western cultures and it remains worthy to investigate whether students in other regions, such as Omani nursing students, face the same challenges. Most studies to date have been conducted in the West in regions such as the United States and Europe [14], making a study in Oman, a non-Western culture, of obvious value. There is a lack of research on the preference, challenges, and satisfaction of using e-books among nursing students in the Gulf region, specifically in Oman. Additionally, there is a gap in research on gender differences in the preference, challenges, and satisfaction of using e-books compared to printed textbooks among nursing students in Oman. Therefore, this study aims to fill these gaps in the literature by investigating the preferences, challenges, and satisfaction levels of using e-books compared to printed textbooks among Omani nursing students, and exploring potential gender differences in these areas. To the best of our knowledge, this is the first study on the preference, challenges, and satisfaction of using e-books in the Gulf region along with gender differences.

Our research addressed the following questions: What are the preferences of nursing students regarding e-books versus printed textbooks? What challenges do Omani nursing students face when using e-books as opposed to printed textbooks? How satisfied are Omani nursing students with e-books in comparison to printed textbooks? Lastly, are there any gender differences in the preferences, challenges, and satisfaction levels of Omani nursing students when using e-books versus printed textbooks?

2 Methods

2.1 Study design

To address our research questions related to the preference, challenges, and satisfaction of nursing students with e-books and printed textbooks, we have chosen to use a cross-sectional descriptive study design. We believe that a cross-sectional design is the most appropriate approach for our study because it enables us to gather data from a sample of nursing students and analyze their responses. Additionally, the descriptive nature of our study design allows us to provide a clear understanding of the preference, challenges, and satisfaction of nursing students, as well as any potential gender differences in their experiences. In summary, a cross-sectional descriptive study design will enable us to answer our research questions and provide valuable recommendations for the use of e-books in nursing education.

2.2 Setting and participants

In Fall 2020, Wolters Kluwer publisher began offering electronic versions of nursing textbooks with enhanced features, such as screen-reading, book marking, highlighting, searching, note taking and enhanced navigation. These e-books were available for download from the Wolters Kluwer website and could be installed on laptops or mobile devices using a specific code for each book. The nursing program at the College of Nursing at Sultan Qaboos University conducted a trial of these new e-books for community health nursing students in the Fall 2020 semester, as students had previously used only printed textbooks. Students in this course were given the opportunity to use e-books for this community course while continuing to use printed textbooks for other courses, making them a convenient sample for this study. Participants were chosen because they were enrolled in the community health nursing course, and no incentives were provided for participation. A total of 95 students were approached for the study, and 77 students completed the survey (81% response rate) to assess their preferences regarding the usefulness, challenges, and satisfaction with e-books.

2.3 Data collection and procedures

The College of Nursing at Sultan Qaboos University is a prestigious nursing college that offers undergraduate and postgraduate nursing programs. The undergraduate nurs-

ing program consists of nine semesters and includes courses totaling 130 credits. Nursing students from across Oman are trained at the college and enjoy free access to its resources and facilities.

During the COVID-19 pandemic, the college piloted the use of e-books among undergraduate nursing students to assess their preferences based on the usefulness, challenges, and satisfaction with e-books versus paper textbooks. Based on the findings, decisions will be taken to use e-books for other nursing courses. For the Fall 2020 semester, students in the Community Health Nursing course were provided with the e-book version of "Community Health Nursing" (3rd edition, 2019, by Rosanna F. De-Marco and Judith Healey-Walsh, ISBN: 9781975111694, published by Wolters Kluwer). These students became the study participants.

For this study, we adopted a survey by Silas Marques de Oliveira in 2012, with the author's permission, and modified it to suit our cultural context [26]. The survey has two parts. Part 1 is an online self-reporting survey that includes demographic characteristics of the nursing students, such as age, gender, cumulative grade point average (GPA), and the number of credits registered. Part 2 consists of statements on the perceptions of usefulness (22 items) and challenges (3 items) of using e-books versus printed textbooks. Responses were rated on a 3-point Likert scale (1 - e-book is better, 2 - printed book is better, 3 – both are the same). Satisfaction with e-books was measured with 7 items, using a 5-point Likert scale (1 - strongly disagree, 2 - disagree, 3 - neutral, 4 - agree, 5 - strongly agree). The minimum score is 7, and the maximum score is 35. A score of 7 to 21 indicates a low level of satisfaction, while a score above 21 indicates a high level of satisfaction. The Cronbach's alpha of our study population was 0.806, indicating high levels of reliability.

After obtaining approval from the College Research and Ethics Committee, we sought permission from the course coordinator to access the students' email addresses. We provided students with an informed consent form and a Google Form link to the survey, after explaining the purpose of the study, as well as the confidentiality and anonymity of the survey. We assured nursing students that participation was voluntary and that they could withdraw from the study at any time. We also informed them that their participation would not affect their course grades in any way.

Once the students completed and submitted the online surveys, the data was stored in a password-protected computer to ensure confidentiality and data security.

2.4 Statistical analysis

After cleaning the data, we conducted data analysis using IBM SPSS software version 23. Descriptive statistics, including frequency, percentage, mean, and standard deviation, were used to summarize the data. We used the chi-square test to understand the students' preferences and to identify differences in perceptions between nursing students and their demographic variables.

2.5   Ethical consideration

We obtained ethical approval for this study from the College Research and Ethics Committee at the College of Nursing. To ensure the privacy of nursing students, all personal identifiers were kept anonymous. We provided detailed information about the research purpose and methods before collecting data and approached potential participants through emails. To further protect their privacy, we used coding to avoid identifying participants by name.

All data were saved in password-protected files on a computer that was also password-protected to ensure data security.

3   Results

Overall, 77 participants were included in this study. The mean age of the participants was 22.01 ± 0.925 years, and the majority (81.8%) were female. Most participants (50.6%) had a cumulative GPA between 2 and 3 and had registered for 13.66 ± 1.971 credits for the semester. Demographic characteristics of the participants are presented in Table 1.

Table 1. Demographic characteristics of the participants

Demographic Characteristics	Categories	Frequency	Percentage
Gender	Male	14	18.2
	Female	63	81.8
CGPA*	Below 2	1	1.3
	2-3	39	50.6
	3.1-3.5	34	44.2
	3.6-4	3	3.9
Age	Mean=22.01	SD=.925	
Number of credits registered	Mean=13.66	SD=1.971	

* cGPA: cumulative Grade Point Average

To address the research questions concerning nursing students' preferences for e-books or printed textbooks, Table 2 displays the participants' preferences based on the books' usefulness. The participants reported that printed textbooks were useful in the following aspects: providing a good learning experience (70.1%), easy to maintain attention and concentration (77.9%), ease of reading (64.9%), pleasure of reading (68.8%), ease of marking a place (59.7%), ability to highlight (49.4%), tangibility (able to touch and feel) (76.6%), and ease of organizing (50.6%). In contrast, students preferred e-books for their possibility to share (62.3%), ease of making copies (64.9), quick referencing (64.9%), and searching capabilities (66.2%).

Table 2. Preference of e-books versus print textbooks based on the usefulness

SN	Factors or Features of Usefulness	E Books are Better	Print Books are Better	They are same	Chi-Square	P Value
		N (%)	*N (%)*	*N (%)*		
1	Provides a good learning experience	12 (15.6)	54 (70.1)	11 (14.3)	46.935	.000
2	Easy to maintain attention and concentration	9 (11.7)	60 (77.9)	8 (10.4)	68.909	.000
3	Ease of reading	14 (18.2)	50 (64.9)	13 (16.9)	34.623	.000
4	Pleasure of reading	12 (15.6)	53 (68.8)	12 (15.6)	43.662	.000
5	Ease of marking a place	22 (28.6)	46 (59.7)	9 (11.7)	27.455	.000
6	Up-to-date	39 (50.6)	19 (24.7)	19 (24.7)	10.39	.006
7	Available everywhere	41 (53.2)	23 (29.9)	13 (16.9)	15.688	.000
8	Flexibility	33 (42.9)	32 (41.6)	12 (15.6)	10.935	.004
9	24/7 accessibility	30 (39)	26 (33.8)	21 (27.3)	1.584	.453
10	Ability to Highlight	18 (23.4)	38 (49.4)	21 (27.3)	9.065	.011
11	Clear graphics and images	24 (31.2)	21 (27.3)	32 (41.6)	2.519	.284
12	Tangibility (able to touch and feel)	8 (10.4)	59 (76.6)	10 (13)	65.013	.000
13	Easy to use multiple documents at once	30 (39)	29 (37.7)	18 (23.4)	3.455	.178
14	Easy to organize	19 (24.7)	39 (50.6)	19 (24.7)	10.39	.006
15	Possibility to share	48 (62.3)	13 (16.9)	16 (20.8)	29.325	.000
16	Ease of making copies	50 (64.9)	15 (19.5)	12 (15.6)	34.779	.000
17	Portability/Transportability	38 (49.4)	25 (32.5)	14 (18.2)	11.247	.004
18	Quick reference	50 (64.9)	16 (20.8)	11 (14.3)	35.091	.000
19	Convenience	26 (33.8)	31 (40.3)	20 (26)	2.364	.307
20	Ease of navigation/Browsing	37 (48.1)	24 (31.2)	16 (20.8)	8.753	.013
21	Space/Storage capability	37 (48.1)	27 (35.1)	13 (16.9)	11.325	.003
22	Searching capabilities	51 (66.2)	14 (18.2)	12 (15.6)	37.584	.000

To address the research questions about the challenges faced by nursing students when comparing e-books and printed textbooks, Table 3 indicates that 54.5% of participants reported experiencing eyestrain or discomfort with e-books, while 48.1% mentioned navigation and reading aloud facilities as challenges associated with printed textbooks.

Table 3. Challenges faced with e-books and printed textbooks

SN	Challenges Faced	E-Books	Print Books	They are same	Chi-Square	P Value
		No (%)	*No (%)*	*No (%)*		
1	Discomfort/difficulty reading from the screen/eye strain	42 (54.5)	29 (37.7)	6 (7.8)	25.896	.000
2	Pages take too long to navigate/ too slow	24 (31.2)	37 (48.1)	16 (20.8)	8.753	.013
3	No facility to have the text read out loud	25 (32.5)	37 (48.1)	15 (19.5)	9.455	.009

In addressing the research questions about nursing students' satisfaction with e-books, Figure 1 reveals that the majority (71.4%) of participants had a low level of satisfaction with e-books.
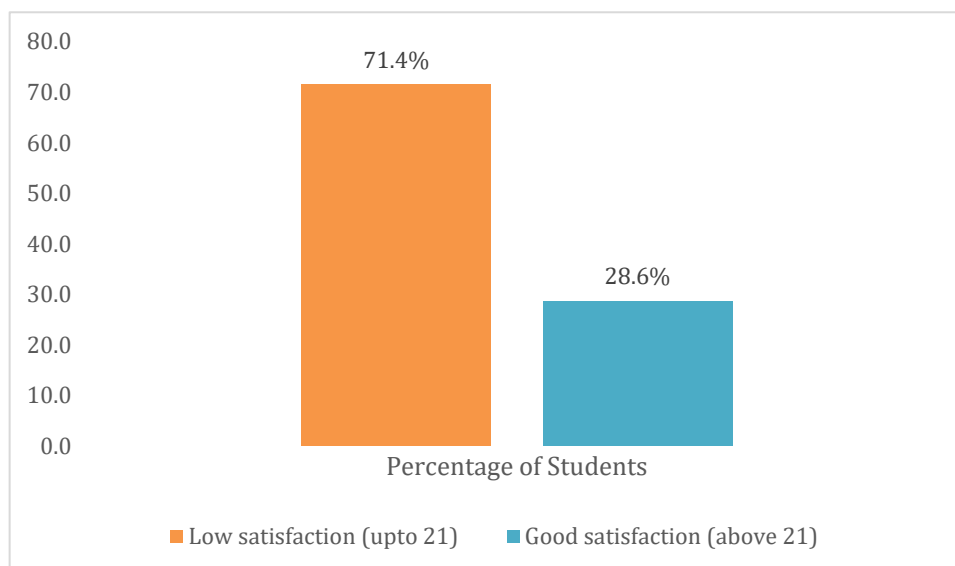

Fig. 1. Satisfaction with e-books

To understand whether gender has a difference in satisfaction levels for e-books, the chi-square analysis was conducted between satisfaction and demographic variables. The results showed that females had lower satisfaction levels with e-books compared to male participants, which was significant at $\chi^2(1) = 6.844$, p = .009 (Table 4).

Table 4. Difference in satisfaction with e-books based on gender

Demographic charac-teristics	Category	Satisfaction		Chi square value	P value
		Low satisfaction (Up to 21)	*Good satisfaction (above 21)*		
Gender	Male	6 (10.9%)	8 (36.4%)	6.844	0.009
	Female	49 (89.1%)	14 (63.6%)		

Significant differences were reported between male and female nursing students regarding their preference of books based on usefulness, and the chi-square analysis is presented in Table 5. Male students preferred e-books more than female students in many aspects, such as providing a good learning experience (42.9% vs. 9.5%, respectively), availability everywhere (85.7% vs. 46%), flexibility (78.6% vs. 34.9%), 24/7 accessibility (71.4% vs. 31.7%), ability to highlight (57.1% vs. 15.9%), tangibility (35.7% vs. 4.8%), easy to use multiple documents at once (71.4% vs. 31.7%), easy to organize (57.1% vs. 17.5%), possibility to share (92.9% vs. 55.6%), ease of making copies (92.9% vs. 58.7%), portability (85.7% vs. 41.3%), quick referencing (92.9% vs.

58.7%), and convenience (78.6% vs. 23.8%). Female students reported that printed textbooks were useful in the majority of aspects. There were no significant differences reported with other demographic characteristics of the participants. Moreover, there were no significant differences between the challenges of using e-books and printed textbooks and any of the demographic variables.

Table 5. Preferences of e-books versus printed textbooks based on gender

SN	Factors or Features of Usefulness	Gender	E-Books are Better N (%)	Print Books are Better N (%)	They are same N (%)	Chi-Square	P Value
1	Provides a good learning experience	Male	6 (42.9)	6 (42.9)	2 (14.3)	9.981	.007
		Female	6 (9.5)	48 (76.2)	9 (14.3)		
2	Available everywhere	Male	12 (85.7)	0 (0)	2 (14.3)	8.567	.014
		Female	29 (46)	23 (36.5)	11 (17.5)		
3	Flexibility	Male	11 (78.6)	1 (7.1)	2 (14.3)	9.988	.007
		Female	22 (34.9)	31 (49.2)	10 (15.9)		
4	24/7 accessibility	Male	10 (71.4)	1 (7.1)	3 (21.4)	8.436	.015
		Female	20 (31.7)	25 (39.7)	18 (28.6)		
5	Ability to Highlight	Male	8(57.1)	3 (21.4)	3 (21.4)	11.263	.004
		Female	10 (15.9)	35 (55.6)	18 (28.6)		
6	Tangibility (able to touch and feel)	Male	5 (35.7)	8 (57.1)	1 (7.1)	11.86	.003
		Female	3 (4.8)	5 (81)	9 (14.9)		
7	Easy to use multiple documents at once	Male	10 (71.4)	3 (21.4)	1 (7.1)	7.756	.021
		Female	20 (31.7)	26 (41.3)	17 (27)		
8	Easy to organize	Male	8 (57.1)	4 (28.6)	2 (14.3)	9.705	.008
		Female	11 (17.5)	35 (55.6)	17 (27)		
9	Possibility to share	Male	13 (92.9)	0 (0)	1 (7.1)	6.977	.031
		Female	35 (55.6)	13 (20.6)	15 (23.8)		
10	Ease of making copies	Male	13 (92.9)	0 (0)	1 (7.1)	6.17	.046
		Female	37 (58.7)	15 (23.8)	11 (17.5)		
11	Portability/ Transport-ability	Male	12 (85.7)	2 (14.3)	0 (0)	9.438	.009
		Female	26 (41.3)	23 (36.5)	14 (22.2)		
12	Quick reference	Male	13 (92.9)	0 (0)	1 (7.1)	6.221	.045
		Female	37 (58.7)	16 (25.4)	10 (15.9)		
13	Convenience	Male	11 (78.6)	2 (14.3)	1 (7.1)	15.377	.000
		Female	15 (23.8)	29 (46.0)	19 (30.2)		

4 Discussion

This study was conducted with the aim of exploring the perceptions and preferences of Omani nursing students regarding e-books and printed textbooks, which have not been extensively explored in previous research. The study results revealed that, in general, Omani nursing students exhibited a greater preference for and satisfaction with

printed textbooks rather than e-books. Furthermore, our findings highlighted a gender difference, with female students tending to prefer printed textbooks, while male students favored e-books.

More specifically, nursing students preferred printed textbooks for specific useful features, such as providing a good learning experience, maintaining attention and concentration, ease and pleasure of reading, ease of marking and highlighting, tangibility and easy organization. This preference for printed textbooks is consistent with findings from previous studies, which have also reported that printed textbooks are still relevant and preferred by students at various academic levels [27-29]. However, students who preferred printed textbooks also felt that they were easier on their eyes and reduced strain and eye fatigue, which is consistent with studies that have linked increased screen time to eye fatigue [30]. Moreover, nursing students reported experiencing fewer distractions and increased concentration when using printed textbooks, which is in line with the finding of two studies reporting a higher likelihood of multitasking and distractions when using digital devices for learning [30, 31].

In this study, nursing students preferred e-books for their up –to-date content, availability, flexibility, ease of sharing, easy copying, portability, quick referencing, and ease of storage. The easy portability of e-books makes them particularly useful. These findings are consistent with other recent studies, which have reported similar advantages of e-books, particularly in terms of convenience, availability, and ease of accessing information [30, 32, 33]. One study even found that the use of e-books led to improved student learning outcomes [34]. Some studies have reported that students who had perceived higher levels of expectations, usefulness and enjoyment or playfulness had higher satisfaction with e-books and expressed the intention to continue using them [35, 36]. To improve student satisfaction and engagement, considering these findings, nursing faculty can provide additional attractive and interactive features like highlighting, note-taking, creating flashcards as a pre-preparation for case study discussions in the classroom. Educating students and faculty about the various features of e-books can also increase their satisfaction [5, 37]. As today's tech-savvy generation Z higher education students find e-book technology familiar, which may encourage those who otherwise don't enjoy reading, it is essential to make e-books in nursing more tech-savvy and better suited for the fast-paced modern world. In this study, e-books were introduced in the community health nursing course; however, many interesting pictures, videos, and other features could not be included, leading to lower levels of student satisfaction. Therefore, before concluding about nursing students' preferences for e-books compared to printed textbooks, educators and administrators should consider introducing e-books in other courses, such as anatomy and physiology, pathophysiology, and adult health nursing. Further research is necessary to identify the relationship between e-books and various factors such as the nature of the course, self-efficacy, technical experience, learning styles, and self-directed learning of the learner. Additionally, research studies comparing the learning outcomes and retention of knowledge between printed and e-book could be conducted in future.

As we know, clinical instruction is moving towards a new direction, and the use of handheld digital devices with e-books can facilitate immediate referencing of diseases

and management, as well as reviewing of skill videos, which could be a boon for to-day's nursing students and educators. Further research can support this trend in curriculum decisions based on student learning outcomes.

Our results also showed that gender significantly influenced preferences and satisfaction with e-books. Male students preferred e-books, while female students preferred printed textbooks. These findings are consistent with Gilbert and Fister [38] research, which found a striking gender gap, with twice as many males as females preferring e-books. Additionally, our results showed that female students had lower satisfaction with e-books compared to male students. Hao and Jackson [39] also found that male students exhibited higher levels of satisfaction with e-books than females. This could be probably due to the fact that male students are believed to be more skilled in technology than female students [40, 41]. Previous research has also shown that e-books users are much more likely to be male students than females [42, 43]. The familiarity of using e-books could explain the gender discrepancy, and the previous experience of males using e-books could be significantly correlated with their preference and level of satisfaction with current e-book use [44]. Thus, nursing educators should recognize that gender might be an important factor to consider when using e-books in the classroom.

5   Conclusion

Although the college aimed to provide students with e-books instead of printed textbooks, the findings of this study do not support this trend. Students preferred both printed textbooks and e-books for their respective benefits but reported lower satisfaction and more challenges with e-books. These results contribute to the theoretical understanding of students' perceptions, preferences, and satisfaction related to e-books in nursing education and gender differences, particularly in the context of Oman, a region with limited studies on this subject.

This study has some limitations. The findings cannot be generalized as the participants were selected from a single institution and a specific course. Future research should include a larger sample that represents all levels of the nursing program and multiple institutions. Furthermore, the gender differences observed in this study may be influenced by the fact that the majority of the study population was female. The results cannot be generalized since less than 20% of the population was male.

Despite these limitations, the study highlights the importance of considering students' preferences and gender when introducing e-books in nursing education. It also underscores the need for information literacy training on e-books' features and usage to enhance students' active learning using digital resources.

In summary, caution must be exercised when introducing e-books in nursing education, considering the learning styles and levels of nursing students. Information literacy training on e-books' features and usage is crucial for enhancing nursing students' active learning using digital resources. For the time being, e-books and electronic journals could complement, but not replace, printed resources for student learning.

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