perception of Geriatric Nursing Students regarding Blended Learning

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Abstract

Background: Blended learning is a teaching method that integrates both offline-learning and online-learning with the aim of producing a conducive learning environment so that students become more active and independent. **Aim of study:** Was to assess perception of geriatric nursing students regarding blended learning. **Research design:** Adescriptive research design was utilized to conduct this study. **Setting:** The study was conducted at Faculty of Nursing, Benha University. **Sample:** A systematic random sample of 25% of all geriatric nursing students in the previous mentioned setting which includes 134 students from 535 geriatric nursing students. **Tools:** Three tools were used. **Tool I:** A structured interviewing questionnaire format which included 3 parts: A) socio-demographic characteristics related to the students. B) learning needs assessment of the students. C) knowledge of geriatric nursing students regarding blended learning. **Tool II:** Likert scale that adapted to assess attitude of geriatric nursing students regarding blended learning. **Tool III:** Observational checklist to assess educational environment of the Faculty and availability of facilities. **Results:** 50% of the studied students aged 21 years old, 73.1% of them were females, 83.6% of them lived in rural areas.42.5% of the studied students had poor total knowledge level about blended learning and 33.6% of them had average total knowledge level about blended learning. While only 23.9% of them had good total knowledge level about blended learning. 59.7% of the studied students had negative attitude regarding blended learning, and only 40.3% of them had positive attitude regarding blended learning. **Conclusion:** There were highly statistically significant relation between studied students' total knowledge and their socio-demographic characteristics regarding mobile phone type $p<0.001$. While there was no statistically significant relation between studied students' total knowledge and other socio-demographic characteristics regarding age, sex, residence, type of family, marital status, and family monthly income. There were highly statistically significant relations between total students' knowledge level, and total attitude regarding blended learning. **Recommendation:** Designing training programs for nursing educators & nursing students to increase the effectiveness and quality of blended learning.

Keywords: Blended learning, Geriatric nursing students, perception.

Introduction

Blended Learning (BL), hybrid learning, integrated learning, multi-method learning, or mixed method learning are all references to the same strategy concept of learning. BL is an opportunity to integrate innovative and technological advances offered by online learning with interaction and in learning activities to integrate technology and tasks so that learning is maximized. BL elements are mentioned by namely, face-to-face learning in class, and independent learning outside the classroom, utilizing online applications or platforms **(Tumasis, 2021).**

The coronavirus "COVID-19" pandemic crisis has made a fundamental change in all over the world. In particular, education has been disrupted temporarily which has impacted almost 94% of learners, representing nearly 1.6 billion students, which resulted in the largest online movement in the history of education. With that sudden shift away from classrooms in many parts of the globe, educational institutions had to rapidly shift to virtual and digital strategies, therefore the reliance on BL has increased significantly and has become an irreplaceable strategic choice to face the repercussions of covid-19 crisis on the educational institutions sectors and to avoid interruption and suspension of education as well **(United Nations Educational, Scientific and Cultural Organization (UNESCO), 2021).**

Blended learning strategies provides learners, educators and course material designers with a comfortable non-threatening environment in which can acquire the set of skills and knowledge necessary to fully function in technology-enhanced learning contexts. The implementation of BL strives to achieve three strategic objectives. First of all, build institutional capacity to support the use of BL approaches. Second, develop staff capacity to integrate learning technologies into learning and teaching strategies. Third, enhance the quality and outcomes of the student learning experience **(Momchilova, 2021).**

Generally Blended learning represents an effective method in teaching geriatric nursing course, and reflects positively on the student's performance in the specific subject. The importance of BL strategy comes from the student feeling towards that method. Finally, using BL strategy as a teaching method, reflects on raising student achievement and improving the attitudes towards learning and develop student's skills including; communication skills, receiving information, and the interaction between the student and the educator **(Cho et al., 2021).**

Geriatric nursing educators' role is a decisive factor for a good BL environment. A Geriatric nursing educator must also pay attention to several things when implementing BL so that hybrid learning runs optimally, namely giving the syllabus, giving students the opportunity to ask questions. Access to communication between geriatric nursing educators and students must also run smoothly, besides that the educator must also pay attention to student development on a regular basis, and maintain interaction with students so that emotional relationships are maintained. Geriatric nursing educators should try to make the BL environment more motivating and fun for students such as using the available online tools and application **(Kaewsrisai, 2022).**

Significance of the study

Faculties closure in response to the COVID-19 pandemic had a big impact on 25.3 million pre university students and 3.3 million university students, according to Egypt's Central Agency for Public

Mobilisation and Statistics (ECAPMAS). Fortunately, Egypt's Ministry of Higher Education (MHE) seized the opportunity and decided to develop the education system to facilitate solutions to all stakeholders. The pandemic encouraged innovation within the educational system to promote delivering BL solutions that guarantee a quality education to the students **(Soliman, 2021).**

Before the start of Covid-19 pandemic, Egyptian universities were not used to having lectures and assignments online. Recently, many countries including Egypt have shifted to face- to -face and online education (BL). This sudden shift in the educational process has caused positive and negative attitudes towards this new teaching /learning approach from both students and instructors **(Abdel-Hafez, 2022).** So that, this study is important to assess perception of geriatric nursing studnts regarding blended learning.

Aim of the study:

This study aims to assess the perception of geriatric nursing students regarding blended learning.

Research questions

1. What is the knowledge of geriatric nursing students regarding blended learning?
2. What is the attitude of geriatric nursing students regarding blended learning?
3. Is there a relation between students' socio-demographic characteristics and their knowledge?
4. Is there a relation between geriatric nursing students' knowledge and their attitude?

Subjects and method:

Research design:

A descriptive research design was utilized to conduct this study.

Setting:

This study was conducted at Faculty of Nursing, Benha University.

Sampling:

A systematic random sample of 25% of all geriatric nursing undergraduates students. the total sample included 134 students from 535 students.

Tools for Data Collection: Three tools were used for data collection.

Tool I: A structured interviewing questionnaire: it was consisted of three parts:

Part I: Socio- demographic characteristics related to the students involved in the study. It included 9 closed ended questions (age, sex, residence, type of family,...etc.

Part II: learning needs assessment of the studied students: It included of 7 closed ended questions (experiencing computer skills difficulties, experiencing difficulties with internet skills, preferred teaching methods. the special device used to access the online course,...etc.

Part III: knowledge of geriatric nursing students regarding blended learning. It included 19 closed ended questions (meaning of traditional learning, meaning of blended learning, nomenclature of blended learning, elements, requirements, advantages,....etc.

Scoring system of students' knowledge

Scoring system is graded according to the items of questionnaire. The scoring system for geriatric nursing undergraduate students' knowledge was calculated as follows (2) score for correct and complete answer, (1) score for correct and incomplete answer, and (0) for don't know. For each area of knowledge, the score of the questions was

summed- up and the total divided by the number of the questions, which converted into a percent score. The total knowledge scores were categorized into 3 levels as following:

- **Good**→ if the total score of knowledge >75%
- **Average**→ if the total score equals 50-75%
- **Poor** if the total score was→ < 50%

Tool II:- Attitude of geriatric nursing students regarding blended learning:- Using likert scale adapted from **(El-Zeftawy et al., 2017).** The original scale was rated on five-point likert-type but the investigator adapted it on three-point likert-type. It was consisted of 40 items divided into 7 categories that as follows: attitude regarding blended learning, attitude regarding information quality, attitude regarding usability,....etc.

Scoring system of students' attitude

scoring system for geriatric nursing undergraduate students' attitude was calculated as (2) scores for always, (1) scores for sometimes and (0) for never. For each area of attitude, the score of the questions was summed- up and the total divided by the number of the questions,which converted into a percent score. The total attitude scores were categorized into 2 levels as following:

- **Positive**→ if the total score of attitude >60%
- **Negative**→ if the score ≤ 60%

Tool III:- Observational checklist to assess educational environment of the faculty and availability of facilities by geriatric nursing students. It was consisted of 33 items divided into 5 categories; physical factors, physical classroom environment, structured the educational environment, educational classroom environment, resources and devices).

The scoring system for total observational checklist was:

Each item has 2 levels of answer present, and not present. These were respectively scored 1and 0. For each area of described observational checklist, the score of the questions was summed- up and the total divided by the number of the questions, giving a mean score for the part. The total score of the students regarding total observational checklist was classified into the following:

- **acceptable**→ when the total score of observational checklist was > 60%.
- **Not acceptable**→ when the total score of reported observational checklist was ≤ 60%

Tools validity:

The tools validity was done by five members Faculty's Staff Nursing-Benha University Experts from the Community Health Nursing Specialties who reviewed the tools for clarity, relevance, comprehensiveness, applicability and easiness for implementation and according to their opinion minor modifications were carried out.

Tools Reliability:

The reliability was done by Cronbach's Alpha coefficient test that developed by Lee Cronbach in 1951 which revealed that each of the two parts consisted of relatively homogeneous items as indicated by the moderate to high reliability of each tool. The internal consistency of knowledge was 0.931, and attitude was 0.943.

Ethical consideration:

Oral and written permission has been obtained from each geiatric nursing undergraduate student before conducting the interview and given a brief orientation to the purpose of the study. They were also reassured that all information gathered would be confidential and used only for the purpose of the study. No names were required on the forms to ensure anonymity and confidentiality. They were also informed about their right to withdraw at any time from the study without giving any reasons

Pilot study:

A pilot study was carried out in the mid of October 2021 to ascertain the clarity and applicability of the study tools representing 10% of total study subjects. 13 geriatric nursing students were included in the pilot study. It has also served in estimating the time needed for filling the questionnaires. It ranged between 15-20 minutes to assess perception of geriatric nursing students regarding blended learning. No modification was done, so the pilot study included in the study main subjects

Preparatory phase:

An extensive review of the current and past available national and international references related to the research title, using a journal, textbooks and internet search was done. This was necessary for the investigator to be acquainted with and oriented about aspects of the research problem as well as to assist in the development of data collection tools; this takes time for preparing the tools about two months.

Administrative design:

The aim of the study was explained to the administrative personnel, and official letters were obtained from the Dean of the Faculty of Nursing concerned the title, objectives, tools and the study technique was illustrated to the Benha University geriatric nursing students to gain their cooperation during this study.

Field work:

Data collection took about one month (two weeks at first term in November 2021, and two weeks in second term in March 2022). The investigator prepared the questionnaire electronically via google form design and took the permission from head of academic department and explained the aim and the nature of the study and the method of filling the electronic questionnaires to the students in the department and then the links were sent to geriatric nursing undergraduate students through the WhatsApp group

Statistical design:

All data collected were organized, tabulated and analyzed by using the Statistical Package for Social Science (SPSS version 21), which was used frequencies and percentages for qualitative descriptive data, and chi-square coefficient x2 was used for relation tests, and mean and standard deviation was used for quantitative data. The observation difference and associations were considered as the following: (p-value):

- Highly statistically significant $P<0.001$**
- Statistically significant $P< 0.05$*
- Not significant $P > 0.05$

Resultes:

Table (1): Shows that; 50% of the Geriatric Nursing students aged 21 years old with mean and standard deviation was 21.61±.69. 73.1% of them were females, 83.6% of them lived in rural areas, 55.2% of them lived in extended families, 88.1% of them were single, 74.6% of them had enough family monthly income, and 70.9% of them had developed mobile phone.

Table (2): Shows that; 55.2% of the Geriatric Nursing students not experienced computer skills difficulties, 53.7% of them not experienced difficulties with internet skills, 86.6% of them preferred teaching methods that depend on the educator and the learner, 70.9% of them had mobile phone device used to access the online course.

Figure (1): illustrates that; 42.5 % of the Geriatric Nursing students had poor total knowledge level about blended learning and 33.6% of them had average total knowledge level about blended learning. While only 23.9% of them had good total knowledge level about blended learning.

Figure (2): illustrates that; 59.7% of the Geriatric Nursing students had negative attitude regarding blended learning, and only 40.3% of them had positive attitude regarding blended learning.

Figure (3): illustrates that; 62.7 % of the Geriatric Nursing students' total educational environment were acceptable, and only 37.3% of their total educational environment were not acceptable.

Table (3): Reveals that; there were no statistically significant relation between Geriatric Nursing students' total knowledge and socio-demographic characteristics regarding age, sex, residence, type of family, marital status, and family monthly income.

Table (4): Reveals that; there were highly statistically significant relations between total students' knowledge level, and total attitude regarding blended learning.

Table (1): Frequency distribution of the Geriatric Nursing students regarding their socio-demographic characteristics (n=134).

Items	No.	%
Age		
21 years.	67	**50.0**
22 years.	51	38.1
≥ 23 years.	16	11.9
Mean ±SD	**21.61±.69**	
Sex		
Male.	36	26.9
Female.	98	**73.1**
Residence		
Urban.	22	16.4
Rural.	112	**83.6**
Type of family		
Nuclear family.	60	44.8
Extended family.	74	**55.2**
Marital status		
Married.	16	11.9
Single.	118	**88.1**
Family monthly income		
Enough and save.	13	9.7
Enough.	100	**74.6**
Not enough.	21	15.7
Mobile phone type		
Developed.	95	**70.9**
Simple.	39	29.1

Table (2): Frequency distribution of the Geriatric Nursing students regarding their learning needs assessment (n=134).

Items	No.	%
***Experiencing computer skills difficulties as:**		
Writing and word processing.	8	6.0
Proficiency in programming languages.	36	26.9
Systems management.	27	20.1
Email management.	19	14.2
Don't have difficulties.	74	**55.2**
***Experiencing difficulties with internet skills as:**		
Time management.	28	20.9
Effective communication.	14	10.4
Do a basic internet search.	9	6.7
Presentation skills.	31	23.1
Fill out an online form.	16	11.9
Don't have difficulties.	72	**53.7**
Prefer teaching methods that rely on:		
The educator.	11	8.2
The learner.	7	5.2
The educator and the learner.	116	**86.6**
The special device used to access the online course:		
The laptop.	16	11.9
A computer.	23	17.2
Mobile phone.	95	**70.9**

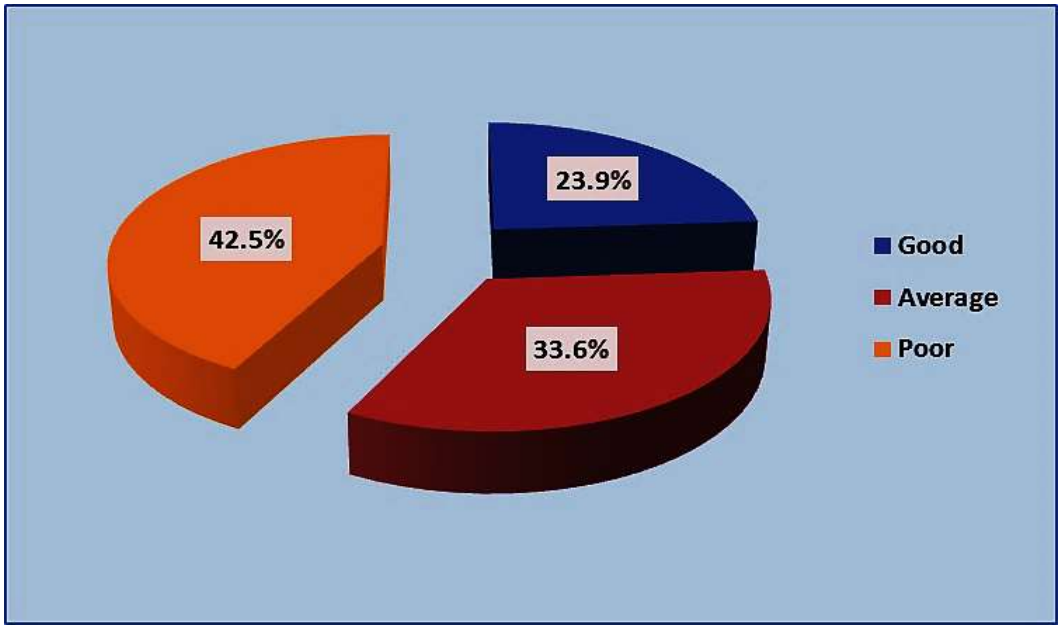

Figure (1): Percentage distribution of the Geriatric Nursing students regarding their total knowledge level about blended learning (n=134).

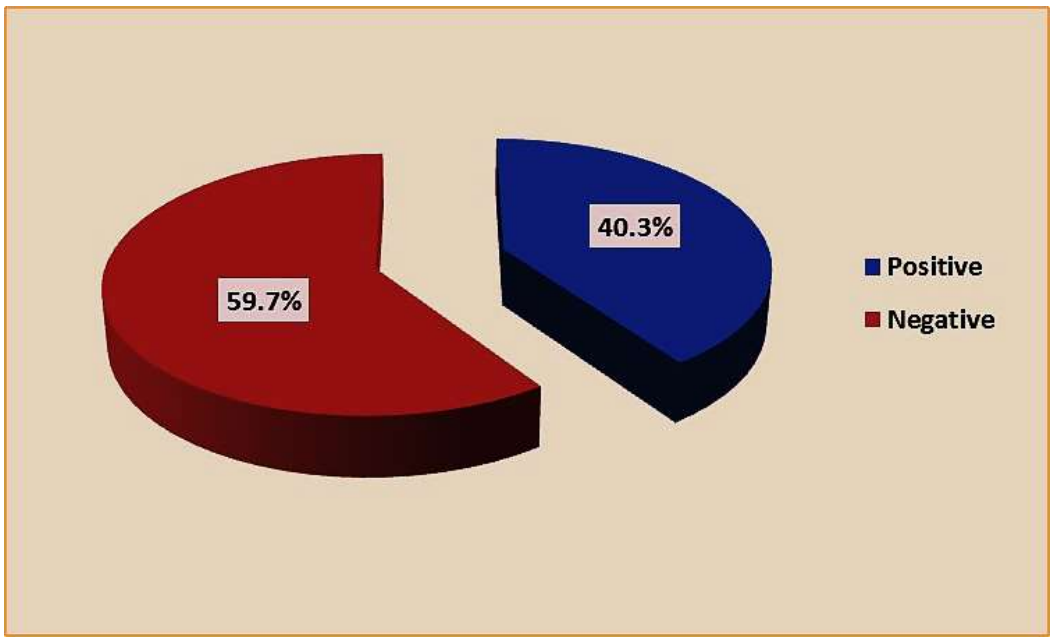

Figure (2): Percentage distribution of the Geriatric Nursing students regarding their total attitude level about blended learning (n=134).

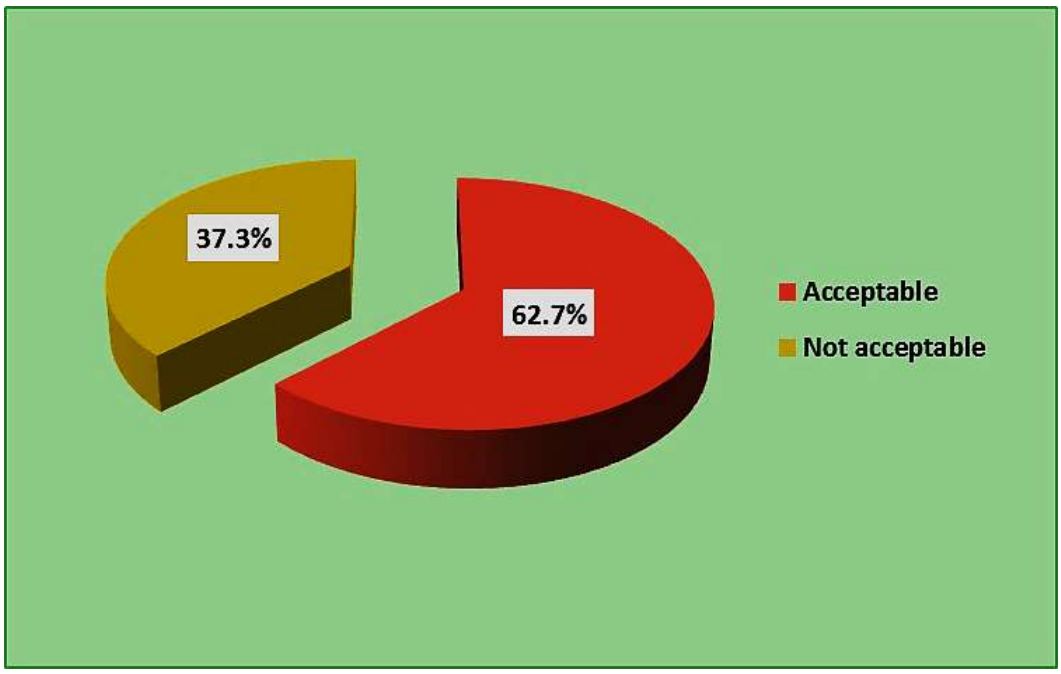

Figure (3): Percentage distribution of the Geriatric Nursing students according to total educational environment (n=134).

Table (3): Relations between socio-demographic characteristics of Geriatric Nursing students and their total knowledge (n=134).

Socio-demographic characteristics	Total knowledge score							
	Poor (n= 57)		Average (n= 45)		Good (n= 32)		X^2	p-value
	no	%	No	%	No	%		
Age								
21 years.	26	45.6	28	62.2	13	40.6	5.294	.258
22 years.	24	42.1	14	31.1	13	40.6		
≥ 23 years.	7	12.3	3	6.7	6	18.8		
Sex								
Male.	18	31.6	11	24.4	7	21.9	2.420	.298
Female.	39	68.4	34	75.6	25	78.1		
Residence								
Urban.	12	21.1	6	13.3	4	12.5	1.562	.458
Rural.	45	78.9	39	86.7	28	87.5		
Type of family								
Nuclear family.	28	49.1	15	33.3	17	53.1	3.720	.156
Extended family.	29	50.9	30	66.7	15	46.9		
Marital status								
Married.	7	12.3	5	11.1	4	12.5	.045	.978
Single.	50	87.7	40	88.9	28	87.5		
Family monthly income								
Enough and save.	6	10.5	4	8.9	3	9.4	3.001	.558
Enough.	44	77.2	32	71.1	24	75.0		
Not enough.	7	12.3	9	20.0	5	15.6		
Mobile phone type								
Developed.	23	40.4	43	95.6	29	90.6	105.352	.000**
Simple.	34	59.6	2	4.4	3	9.4		

****Highly significant relation < 0.001.** **Not significant relation > 0.05.**

Table (4): Relations between total knowledge of Geriatric Nursing students and their total attitude (n=134).

Total knowledge level	Total attitude level					
	Negative (n=80)		Positive (n=54)		X^2	p-value
	No.	%	No.	%		
Poor.	32	40.0	25	46.3	20.331	.000**
Average.	38	47.5	7	13.0		
Good.	10	12.5	22	40.7		

****Highly significant relation < 0.001.**

Discussion:

Blended Learning (BL) traditionally refers to a combination of online and face-to-face learning, merging the advantages of both online and face-to-face activities by providing; prolonged exposure to learning for participants, flexibility that allows for learning anytime, a comprehensive range of educational resources, and enabling peer learning. BL has become a mainstream concept in the recent years due to the widespread use of technology-based learning **(Acaroglu et al., 2021).**

The study aimed to assess the perception of Geriatric Nursing students regarding blended learning. It was discussed under five main sections; socio-demographic characteristics, learning needs assessment, students' knowledge, reported attitude regarding BL, and assessing educational environment and availability of facilities of the faculty by Geriatric Nursing students and investigator to enhance perception regarding BL.

Regarding socio- demographic characteristics of the studied students, the present study findings showed that; half of the studied students (50%) aged 21 years old with mean and standard deviation was 21.61±.69 (table1). This finding came inconsistent with the study performed by **Bamoallem & Altarteer, (2022),** who studied "Remote emergency learning during COVID-19 and its impact on university students perception of blended learning in KSA, in Saudi Arabia", (n=115), and found that, majority of participants (87.4%) ranged in age from 18 to 26, with a mean age of 20.88.

Regarding to gender, and residence of the studied students, the present study showed that; slightly less than three quarters (73.1%) of students were females, majority of them (83.6%) lived in rural areas (table 1). This findings came inconsistent with the study performed by **Iqbal et al., (2022),** who studied "The impacts of emotional intelligence on students' study habits in blended learning environments: the mediating role of cognitive engagement during COVID-19, in China", (n=338), and found that; more than half of students (54.6%) were males, and slightly less than three fifths of them (59.3%) lived in urban regions.

Regarding students' type of family, this study showed that; more than half of students (55.2%) lived in extended families (table1). This finding came inconsistent with the study performed by **Topuzov et al., (2022),** who studied "Individualized learning in the context of blended mode of the educational process in secondary school: challenges and expectations, in Ukraine", (n=370), and found that, majority of students (82%) came from nuclear families.

Regarding students' experiencing computer skills difficulties, this study showed that; more than half of the studied students (55.2%) not experienced computer skills difficulties (table 2). This finding was in the same line with the study performed by **Rolé, (2021),** who studied "The inhibitors and enablers affecting the online behaviours of online college students learning in a blended learning context, in Malta", (n=37), and found that; majority of the students (86%) have sufficient computers skills.

Regarding students' experiencing difficulties with internet skills, this study showed that; more than half of students (53.7%) not experienced difficulties with internet skills (table 2). This finding was in the same line with the study performed by **Guo et al., (2022),** who studied "Blended learning model via small private online course improves active learning and academic performance of embryology, in China", (n=43), and found that;

most of students (95.45%) had never been experiencing internet skills difficulties

Regarding students' preferred teaching methods, this study showed that; majority of students (86.6%) preferred teaching methods that depend on the educator and the learner (table 2). This finding was in the same line with the study performed by **Siddique & Hussain, (2022),** who studied "Blended learning in ESL: perceptions about paradigm shift in English Language Institutions of Punjab, in Pakistan", (n=282), and found that; more than three fifths of students (61.7%) preferred instructional methods that depend on both teacher and learner.

Regarding students' special device used to access the online course, this study showed that; more than two thirds of the studied students (70.9%) had mobile phone device used to access the online course (table 2). This finding was in the same line with the study performed by **Saad et al., (2021),** who studied "Comparing undergraduate nursing student academic engagement and achievement in traditional versus blended learning models, in Pakistan", (n=162), and found that; slightly less than three fifths of students (56.3%) utilized smart phone device

Regarding total knowledge level of the studied students, the current study clarified that; slightly more than two fifths of students (42.5%) had poor total knowledge level about blended learning and slightly more than third of them (33.6%) had average total knowledge level. While only less than quarter of them (23.9%) had good total knowledge level about blended learning (figure 3). This findings were in the same line with the study performed by **Adi & Fathoni, (2020),** who studied "Blended learning analysis for sports schools in Indonesia", (n=290), and found that; less than half of the students (47.5%) had poor awareness regarding blended learning, while slightly less than half of them (49.1%) had average knowledge regarding blended learning.

Regarding to total atittude level of the studied students, the current study clarified that; slightly less than three fifths of the studied students (59.7%) had negative attitude regarding blended learning, and only two fifths of them (40.3%) had positive attitude regarding blended learning (figure 4). This findings were in the same line with the study performed by **Kadirbayeva et al., (2022),** who studied "Methodology of application of blended learning technology in mathematics education, in Kazakhstan", (n=80), and found that; less than fifth of students (16.25%) have positive attitudes regarding blended learning and majority of students (83.75%) developed negative attitude

Regarding the students' total educational environment, this study showed that; more than three fifths of the studied students' total educational environment (62.7%) were acceptable, and only more than one third of their total educational environment (37.3%) were not acceptable (figue 5). This might be due to the faculty environment refers to the set of relationships that occur among members of a faculty community that are determined by structural, personal, and functional factors of the educational institution, which provide distinctiveness to faculty.

The current study findings showed that; There were no statistically significant relation between studied students' total knowledge and socio-demographic characteristics regarding age, sex, residence, type of family, marital status, and family monthly income (table 17). The previous findings were in the same line with the study performed by **Bukumiric et al., (2022),** who studied "Effects of problem-based learning modules within blended learning

courses in medical statistics–a randomized controlled pilot study, in China", (n=53), and found that; There were no significant differences between the students' socio-demographic characteristics and their knowledge regarding blended learning.

Regarding relations between the students' total knowledge and their total attitude level about blended learning, this study showed that; there were highly statistically significant relations between total students' knowledge level, and total attitude regarding blended learning $p< 0.001$ (table 18) . This findings were in the same line with the study performed by **Fisher et al., (2021),** who studied "The positive relationship between flipped and blended learning and student engagement, performance and satisfaction, in Australia", (n=714), and found that; There are significant and positive direct relationships between students' knowledge regarding blended learning and their attitude level.

Conclusion

Based on the result of the present study and research questions, the following can be concluded:

The study showed that slightly more than two fifths of the Geriatric Nursing students had poor total knowledge level about blended learning and slightly more than third of them had average total knowledge level about blended learning. While only less than quarter of them had good total knowledge level about blended learning. Slightly less than three fifths of the Geriatric Nursing students had negative attitude regarding blended learning, and only two fifths of them had positive attitude regarding blended learning. there were no statistically significant relation between Geriatric Nursing students' total knowledge and other socio-demographic characteristics regarding age, sex, residence, type of family, marital status, and family monthly income. There were highly statistically significant relations between total students' knowledge level, and total attitude regarding blended learning.

Recommendation

In the light of the findings obtained from the present study, the following points are recommended:

- Comparative research into the strengths and weakness of different Information and Communications Technology (ICT), especially the new technologies integrated with face-to-face environments, to investigate the characteristics of optimal blends for learning.
- Educational program ought to be actively established and developed in a blended learning format.

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