

A Multi- country Perspectives on Social Networking Sites Utilization, Perceived Benefits & Potential for Improving Study Habits among Nursing Students

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Abstract

Background: The abundance of easy and accessible information and the fast developing social networking sites (SNS) have proven the world is small and within reach. The great implication of this interconnectedness can be somehow attributed to the change in the learning and sharing environment—something a classroom is lacking; and considering the potential implication of SNS in nursing education reveals that the benefit allows the students to communicate and interact with wider audience and beyond the classroom. The aim of this study is to identify the extent of social networking site utilization, the perceived benefits and the potential for improving study habits of nursing students in five countries (Israel, Iraq, Oman, Philippines & Turkey).

Methods: The Study is a Quantitative –Cross-sectional study that determines the relationship between the utilization, the perceived benefits of social networking sites, and the potential for improving study habits among nursing students in the five participating countries (Israel, Iraq, Oman, Philippines, and Turkey). The basis of this paper is the careful analysis survey of students' responses from a sample of 1,137 students from an online hosting site. The online instrument study focuses on the extent of utilization and benefits of social networking sites according to its accessibility, usability, efficiency and reliability.

Results: Our findings in correlation using Pearson R- reveals a significant positive correlation between the extent of doing possible study habits and the extent of utilization of social networking sites in terms of the four domains, namely, accessibility ($r=0.246$), usability ($r=0.377$), reliability ($r=0.287$) and efficiency ($r=0.387$).

Conclusion: It can be concluded that a significant positive correlation between students' study habits and the extent of utilization means that the more students devote themselves on study habits, the higher the level of social networking site utilization. There are positive and negative implications in using social networking sites among nursing students and there is greater potential in further improving the approaches to nursing education through adaptation of curricula based around the proper utilization of social networking sites.

Background

In today's generation, the rapid and ever-changing advancement in technology and interconnection through networking has drastically influenced the culture of learning and knowledge acquisition. The abundance of easy and accessible information and the fast-developing social networking sites (SNS) have proven the world is small and within reach. The great implication of this interconnectedness somehow can be attributed to the change in the learning and sharing environment—something a classroom is lacking. Also, social media in nursing education have shown great potential in influencing students' study habits ^[1]. Online SNS (e.g. Facebook, Myspace, Flickr, Twitter, and YouTube) have surfaced as the fastest means to exchange personal and professional information among college

students^[2]. The utilization of SNS identified as information networks that utilize a form of communication that are widely used for several purposes. They are used for dealing with interactive users and generating contents, and in the recent years, have seen expansion for creating and maintaining relationship between people^[3]. This study also explored the utilization and perceived benefits of social networking sites among nursing students in five countries (Iraq, Israel, Oman, the Philippines, and Turkey). SNS function like an online community of web users, depending on the website, and a lot of these online SNS are based on a shared interest. Once accessed, users may begin to socialize. This socialization may include reading profile pages of other members and possibly even contacting them. The profile of SNS users varies according to the user discretion on privacy and its visibility settings^[4]. In this age of technological acuity, the world has become too small and communication has become more efficient than ever. SNS have played a vital role in bridging connections, and Facebook is the most current SNS today. It has become one of the regularly visited websites in college and because of its rise in popularity; the subject of SNS among students and faculty has been a topic of concern. SNS are seen as an alternative to social interaction, access to information and face to face interaction. SNS such as Facebook seems to provide a ready space where the role conflicts that students and faculty often experience in their relationship with university work, staff, academic conventions, and expectations can be worked out in a backstage area. Social networking sites such as Twitter is utilized as a tool for posting an explanation in study groups, academic advising, and for student education^[5]. Nursing students identified three proposed reasons for the use of social media to learn through social networking and to socialize with other students which establishes professional social networking^[6]. First, social networking sites also allow communication with students through instant messages. Second, they enable rapid response to questions asked by students and facilitate virtual discussions that make students a part of a community. Third, these SNS also allow active, interactive and reflective learning^[6]. A study on the use of Facebook for online discussions among distance learners the results show that interaction via Facebook was more frequent compared to the use of the forum; and indicates that Facebook has the potential to be used in online academic discussions^[7]. The use of Twitter allowed connection between students, access to external resources, improved learning, and support to access videos providing an opportunity for reflection, flexibility, collaboration, and feedback^[8]. The use of a social networking tool called Ning verifies the feasibility and effectivity of integrating inter-professional education, that most students showed interest in learning more and in optimizing patient cares^[9]. The use of social networking platforms is a less expensive way of interpersonal education with the possibility of implementing interprofessional education on a large scale and in the long term^[9]. A study identified that most students agree that the use of SNS like Ning contributed to adding knowledge and increase in understanding of content^[10]. The study on considering the potential implication of SNS in nursing education revealed that the benefit allows the students to communicate and interact with a wider audience and beyond the classroom^[11]. One example is the creation of a research group called MARG (mentors and researchers group) to create mentors that use Facebook as a communication platform to promote events and serve as a network to discuss issues and concerns among nursing students^[12]. Students realize that Facebook groups can be an innovative method to study. It is also described to be

useful in promoting learning among peers and teachers^[13]. SNS are very widely used among college students and are beneficial to them because they have the ability to mingle students from all over the world in one virtual world^[14]. This also means that campuses can now begin to blend classes' subject areas as well as different campuses, A similar study agree that students spend on average, 1–2 hours a day on SNS for educational purposes^[15]. In relation to this a study on social networks and learning stated that students listed learning as a top priority in utilizing SNS^[16]. In contrast, however, other studies say that Facebook leads to lower grades^[15]. The use of social media has greatly shown an unlimited influence in a student's lifestyle in general. The study is aimed at identifying the nursing students' degree of utilization, perceived benefits of social networking sites and their potential in improving student study habits. This study also seeks to determine the relationship between utilization, perceived benefits, and the potential for improving study habits among nursing students in five countries. There is a scarcity of research specifically addressing nursing education and the use of social networking sites that this study generally aims to shed light on the potential of SNS in improving the study habits of nursing students among the five countries.

Research Questions & Hypothesis

This research study seeks to answer the following questions: What is the extent of utilization of social networking sites as a means of communication in terms of educational purposes? What social media network is most helpful among nursing students? What are the perceived benefits of social networking sites in terms of Accessibility, Usability, Efficiency and Reliability? Is there a significant relationship between the extent of utilization and perceived benefits of social networking sites among nursing students? And is there a potential for improving the study habits of nursing students utilizing SNS?

The level of significance is tested at $\alpha 0.05$.

HO 1: There is no significant relationship between the extent of utilization and benefits of social networking sites among nursing students.

HO 2: Using Social Networking Sites has no potential for improving students' study habits.

Methods

Study Design

This study is a quantitative-cross-sectional design that determines the relationship between the utilization and perceived benefits of social networking sites and the potential for improving study habits among nursing students in the five participating countries (Israel, Iraq, Oman, Philippines, and Turkey)

Research Locale

The study was conducted in five countries (Iraq, Israel, Oman, the Philippines, and Turkey). Country selection participation is through a voluntary system. The focus of the study is on the utilization and perceived benefits of social networking sites and the potential for improving study habits among regular nursing students in the selected colleges and universities of the participating countries. The study participants consisted of first-year to fifth-year Bachelor of Science in nursing students from the five participating countries.

Sample and Sampling Techniques

The sample of respondents of the study comprised 1,200 students selected study cohort in each university that meets the set of inclusion criteria, and based on the returned accomplished online form, 1400 links were forwarded. The purposive sampling technique was used considering the criteria for the population, and a post hoc sample was computed using Proportion Analysis using CI.0.65 and CL of 95% of a sample of 1,137 students. **Inclusion Criteria** a. Bachelor of Science in Nursing Student b. A resident in each of the five participating countries c. Has Access to online networking sites or similar platforms. **Exclusion Criteria** a. Residing in countries not included in the study b. Students under the Investigators / Collaborators.

Ethical Considerations

The study sought approval from Assiut University in Egypt dated **IRB 08/08/2017 number 38** and ethical clearances in the respective participating countries. . The study is a non-experimental study that will not utilize human subjects. The study is done by seeking permission and approval from respective focal collaborating countries. The three-part survey tool is administered through the use of an online survey – a provided consent form to proceed and to seek their willingness to partake in the study. The return of the electronically tallied survey form indicates a willingness to participate. The participants' identities and personal information are left undisclosed. Blind tallying was used to secure privacy and to maintain participant anonymity by using codes. All respondents were informed about voluntary withdrawal from the study.

Data Gathering Procedure

Main IRB approval and a communication letter with the IRB approval was coursed through the pre-identified colleges and universities in the five (5) aforementioned participating countries. Once approval from each locale IRB has been taken, the corresponding co-researchers were in charge of the selection of the study participants based on the inclusion and exclusion criteria. Data collection transpired between the Spring of 2017 and Fall of 2018. Through a hosting site, a web-based online tool was forwarded as a link to study participants for easy access.

Research Instrument

The Instrument has been subjected to both internal validity and reliability. Face validity and content validity were performed and screened by two experts in the field of Nursing Research. A post hoc

reliability test was done and results of the Chronbach α yielded 0.92 % level of reliability 0.8 margins of error. A 3-part questionnaire was utilized. **Part I** sought to determine the demographic profile of the participants in terms of age, gender, year level, type of social media site used, and country of residence. **Part II** was about the extent of utilization of social networking sites as a means of communication according to educational purposes among nursing students and, **Part III** was about the perceived benefits of social networking sites among nursing students. Both used a four-point (4) Likert scale. When responding to a Likert questionnaire item, respondents specify their level of agreement to a statement. Participants were asked to check the number that best corresponds to their answer regarding the extent of utilization and perceived benefits of social networking sites among nursing students. The highest range is 4 and 1 is the lowest.

Data Analysis

The results of this study were analyzed and interpreted using the Statistical Package for Social Sciences (The IBM SPSS 24.0) considering the following: **Weighted Mean** was used to determine the average of the extent of utilization of social networking sites among nursing students. It was also used to determine the perceived benefits of social networking sites in terms of accessibility, usability, efficiency, and reliability of social networking sites among nursing students. After gathering all the answered questionnaires, the mean is computed and gauged according to the following range and qualitative interpretation:

Using a four-point Likert scale (extent of utilization)

Weight	Mean Range	Adjectival Rating	Interpretation
4	3.51-4.50	Always	Highly utilized
3	2.51-3.50	Often	Moderately utilized
2	1.51-2.50	Sometimes	Slightly utilized
1	1.0-1.50	Never	Not utilized

Using a four-point Likert scale (perceived benefits)

Weight	Mean Range	Adjectival Rating	Interpretation
4	3.51-4.50	Always	Highly beneficial
3	2.51-3.50	Often	Moderately beneficial
2	1.51-2.50	Sometimes	Slightly beneficial
1	1.0-1.50	Never	Not beneficial

ANOVA was also utilized to identify significant differences among the two different mean domains and a post hoc test was performed using **Bonferroni α** ^[17]. **Mann Whitney U test** was used to test two or more independent samples that have been drawn from the same population where the level of measurement is ordinal ^[18]. **Pearson R** is both descriptive and inferential ^[17], and was used to determine the magnitude and direction of a significant relationship between the extent of utilization and perceived benefits of social networking sites among nursing students, and to determine the relationship between student demographic profile, utilization & perceived benefits with the potential to improve study habits.

Results

The study recruited 1,200 participants out of which a post hoc sample using proportion analysis yielded 1,137 students that were taken as an actual sample for the study. The profile distribution of the nursing students grouped by country showed that students from Israel were mostly 26–28 years old, female and first-year students. While nursing students from Iraq were mostly 20–22 years old, female and second-year students. In Oman, most of the nursing students were also 20–22 years old, female, and do not belong to first to fifth-year levels. They were irregular students who can be placed in between levels depending on their nursing major courses, and they can be clustered on a specific year. In the Philippines and Turkey, most of them were 20–22 years old, female and third-year students. Overall, the majority of the students were 20–22 years old and female. Most of them were third-year students (*Table 1*).

The percent distribution of the extent of utilization of SNS as means of communication according to educational purposes among nursing students in five countries shows that majority of the nursing students slightly utilized SNS in terms of their accessibility (61.3%), and moderately utilized them in terms of usability (60.2%). It also shows that most of them moderately utilized SNS in terms of their efficiency (45.2%) and reliability (46.8%) (*Table 2*). *Figure 1,2,3,4* show the extent of SNS utilization among nursing students when grouped according to age, gender, year level and country. The results also reveal that nursing students have varied responses in terms of their perception of the extent of utilization of SNS as means of communication. At least 2.1% and at most 6.2% do not utilize SNS and 27.8% to 61.3% slightly utilized SNS. It was also observed that more than one-fourth of the students (30.6%) to 60.2% moderately utilized SNS. There were at most 16.8% of students that perceived utilization of SNS as highly utilized. Moreover, on average, the nursing students slightly utilized SNS in terms of accessibility (2.34) and moderately utilized them in terms of usability (2.81), efficiency (2.74) and reliability (2.66). Likewise, the nursing students' extent of utilization of the SNS in terms of accessibility was slightly utilized. On the extent of accessibility, results indicate that they sometimes go to the internet café (2.33), campus (1.94), malls (2.42), restaurants (2.12), game consoles (2.23), iPad (1.76) or USB broadband (2.20). It can also be identified that they often access social networking sites in their own houses (2.88), mobile phones (2.52), and portable laptops (3.01). In terms of usability, the nursing students have moderate utilization of SNS. This means that they often utilize SNS to get updates in school activities (3.10) to gain more knowledge about their current lessons (2.97), to share their thoughts and opinions about discussions (2.79) and for advanced studies (2.74). Sometimes, they utilize SNS for

communication purposes in relation to their studies (2.40). In terms of reliability, results reveal that they often rely on social networking sites to familiarize with themselves and with their future lessons (2.71), to get updates on school activities (2.69), to improve their knowledge and skills (2.79), to participate in group researches (2.72), and to do assignments and projects (2.75). This means that they have moderately utilized the SNS. In terms of efficiency, nursing students often enhance their abilities in providing nursing care through social networking sites (2.82). They often consider that the sources obtained from SNS are accurate (2.71) and that they learn proper techniques related to nursing skills by using them (2.56) (*Table 3*). They also get recognized by their clinical instructors because of their expertise obtained from SNS (2.39). This means that they have moderate utilization of the SNS.

Regarding the question on what social media networking sites nursing students find most helpful, slightly more than one-fourth of the nursing students consider Facebook (25.3%), WhatsApp (26%), and Google (25.8%) as the most helpful social media networks. The results also show some of the students considered Instagram, Snap Chat, e-learning, Youtube, Twitter, and others. Three of the students (0.3%) claimed that they are using none of the social media networks. (*Table 4*). In the premise of usability, reliability, accessibility, and efficiency, the results show that nursing students perceived SNS as slightly beneficial in terms of accessibility (2.34). They also reveal that the SNS among nursing students were moderately beneficial in terms of usability, reliability, and efficiency.

On study habits, nursing students often have different study habits in terms of time management, study focus, and personal perceptions regarding learning, getting good grades, doing assignments, and the importance of achieving exceptional grades. In terms of time management, students allot enough time (2.85) for studying (2.74), scheduling fixed time (2.94), and setting the best time they can study (2.84) either every day (2.71) or every week to review (2.51). They also often consider how to focus entirely on studies (2.87) or get interested in studies (2.93) such as seeking a quiet place (3.12) or sometimes studying with music or while watching TV (2.41). Moreover, they often consider studying even without exam (2.70) or completing difficult assignments (2.70). They normally enjoy learning (2.81), and they were always confident that they can get good grades (3.10). They also frequently give importance to getting exceptional grades (3) and they make sure that they know which homework to accomplish (3.10) (*Table 5*). The results in the extent of utilization of SNS in terms of accessibility, usability, and reliability suggest that the younger the age the bracket of the nursing students, the lower their extent of utilization, except for ages 23–25 years old. However, the result on the extent of utilization in terms of efficiency contradicts the possible correlation. For it suggests that the younger the age of the students, the lower the extent of utilization in this area except for age bracket 23–25 years old. The results further show that there was a significant difference in the extent of utilization of SNS in terms of usability [$\chi^2(4) = 16.038, p = 0.003$] and efficiency [$\chi^2(4) = 12.360, p = 0.015$]. The significant result also exists in terms of reliability [$\chi^2(4) = 11.012, p = 0.026$]. However, pairwise comparison disconfirmed the result on the significant difference. The extent of utilization of SNS in all areas was consistently higher in female nursing students except in accessibility. This suggests a possible relationship that the female students tend to have a higher extent of utilization of social networking sites but not in accessibility. Mann-Whitney U test was used and the test revealed that there was a significant difference in the extent of utilization of social

networking sites only in terms of accessibility. This indicates that the extent of utilization of nursing students in terms of accessibility was significantly higher in male students than the extent of utilization of female students. Since the results indicate a non-significant p-value ($p > 0.05$), this also means that the extent of utilization of SNS in terms of usability ($p = 0.134$), reliability ($p = 0.264$) and efficiency ($p = 0.586$) of the nursing students were the same regardless of their sex. On accessibility, fifth-year nursing students have the highest utilization of SNS in terms of accessibility (Mn Rank = 538.86), reliability (Mn Rank = 603.22), and efficiency (Mn rank = 631.38). Fourth-year nursing students were consistently the lowest in the extent of utilization in terms of usability (471.68), reliability (Mn rank = 448.22), efficiency (Mn rank = 419.48) but not in accessibility (Mn rank = 486.23). It was also observed that there was a fluctuating pattern as the students' year level goes up which was consistent with the results presented.

From the initial extent of utilization of the nursing students in the first year, the extent of utilization of the second-year students was lower compared to first-year students'. The extent of utilization of SNS was higher in the next year level III compared to the extent of utilization of students in year level IV. Then lower again in the year level IV compared to the utilization of SNS of year level V. Inferential test was performed through Kruskal Wallis. Results of the test reveal that significant difference exists in the extent of utilization of SNS in terms of accessibility when grouped by year level [$\chi^2(4) = 19.897, p = 0.001$], reliability [$\chi^2(4) = 21.345, p > 0.01$], and efficiency [$\chi^2(4) = 33.682, p < 0.01$]. However, no significant difference in the extent of utilization was found in the usability [$\chi^2(4) = 1.187, p = 0.880$]. It has been found that there was a significant difference between the extent of utilization and perceived benefits of SNS in terms of accessibility [$\chi^2(4) = 126.981, p < 0.01$], usability [$\chi^2(4) = 40.096, p < 0.01$], reliability [$\chi^2(4) = 51.915, p < 0.01$], and efficiency [$\chi^2(4) = 147.964, p < 0.01$]. (Table 6) It was observed that Oman and the Philippines have the highest mean rank among all the countries except in terms of utilization of usability where Israel obtained the highest mean rank. This indicates that nursing students in Oman have the highest utilization of social networking sites in terms of accessibility and reliability. The Philippines has the highest utilization in terms of reliability but with a slight difference with Oman. Moreover, Turkey obtained the lowest mean rank in all areas except in terms of accessibility. This indicates that Turkey has the least utilization of social networking sites in terms of usability, reliability, and efficiency. Arranged from highest to lowest, the extent of utilization of SNS of the nursing students in terms of usability (2.81) was the highest followed by reliability (2.74), efficiency (2.65) and the lowest was accessibility (2.34) (Table 7).

Furthermore, the result of repeated measures ANOVA revealed that there was a significant difference among the domains of the utilization of the SNS. Hence, a further test performed through Bonferroni posthoc test accessibility was significantly lower than usability, reliability or efficiency. However, usability was significantly higher than reliability or efficiency, and reliability was significantly higher than efficiency (Table 8). Pearson R- reveals a significant positive correlation between the extent of doing possible study habits and the extent of utilization of social networking sites in terms of the four domains, namely accessibility ($r = 0.246$), usability ($r = 0.377$), reliability ($r = 0.287$) and efficiency ($r = 0.387$). This means that there was a direct relationship between the two variables. It further means that the more

study habits done by the nursing students, the higher the extent of utilization in terms of accessibility, usability, reliability, and efficiency (*Table 9*).

Discussion

The findings of this study identified social networking sites and the relationship between their utilization and perceived benefits, and their potential for improving study habits among nursing students in five different countries. Based on the analysis of the findings in the study, most student respondents were female, third-year students of Bachelor of Science in nursing ages 20–22 years. Similar findings with the study conducted in Pakistan where the majority of the nursing respondents were female within the age bracket of 21 to 25 years^[19]. A relevant finding explained how social media is an important aspect of today's adolescents which poses efficiency if properly utilized^[20]. The study reveals that the majority of the nursing students from across five countries were more engaged in websites and SNS such as Facebook, WhatsApp and Google. A study conducted in 2009 in Brazil & Singapore showed wide utilization of Facebook on a regular basis^[21]. These findings were also true in earlier studies where My Space and Facebook are among the most popular sites among students even though it is not created for educational purposes^[22]. In the study results, it was also evident that the use of SNS was important in establishing communication for educational purposes, and 61.3 % of the respondents utilize social networking sites for the purpose of relaying information relevant to their studies.

A study suggested that SNS are platforms that can be used to improve educational impact by adapting modifications in instructional curricula in medical schools^[2]. The aspect of accessibility is an important factor in today's generation of internet-savvy students, and the study findings suggested the great importance of accessibility. It was found that students were able to get access to their social networking profiles through internet cafes, malls, restaurants and within the campus. A study mentioned that access to information is just a click away and the accessibility of the information in the internet and SNS is widely used, and it was inherently identified as the main reason why most students are not visiting libraries anymore^[23]. Quick and easy access to SNS makes it preferable for most students especially for the purpose of education and learning.

The usability of SNS in terms of educational purposes is yet a topic that needs to contextualize as the study findings showed that nursing students in five countries use SNS for educational gain by taking advantage of the information in acquiring knowledge on current lessons, getting updated on ongoing school activities, and for the purpose of advanced studies. This is contrary to the study done in Oman where the findings showed that SNS was mainly used for entertainment purposes and lesser for educational purposes^[24]. SNS can be presented in various mediums such as photos, videos, interactive interfaces and games which make them highly engaging among students. Moreover, nursing students engage in more interactive skill-based learning sessions. In terms of reliability, nursing students from the five participating countries identified that SNS was moderately utilized for the purpose of keeping track of school activities and improving knowledge and skills. In the aspect of efficiency, students scored high

in providing correct data and information, enhanced their abilities in providing nursing care, and learning was drawn from performing proper techniques relevant to their nursing skills. It was also noted that clinical instructors partly recognized students' expertise drawn from social networking sites which was supported by a study intervention using SNS that teach nursing students about the ethical and moral behavior done through Facebook by humanized mannequins in social networks [25].

Advancing teaching strategies and the availability of updated and timely learning materials can be advantageous as a learning platform among nursing students. Overall, the nursing students in all five countries were synonymous in that they moderately utilize SNS. In terms of benefits, students from the five countries said that SNS are highly beneficial according to a study where 54.92% of dental students in a university in India suggested that usage of social networking sites were beneficial in their studies and learning needs [26]. This can be supported by an online survey conducted about social networking as a learning tool, where it was found that majority of the students perceive SNS as an innovative method of study support guided by learning and by enhancing efficacy [13]. However, this is contrary to the study results on the effects of online social networking on student performance that suggest that time spent in social networking sites by medical students can negatively influence student achievement [27]. The negative and positive aspects of SNS utilization is a debatable issue that is yet to be addressed, because SNS can be addictive and their improper usage may lead to less positive outcomes. Studying is a skill, and developing study habits is vital to the progress of the students' academic performance [28]. There is available literature that highly contends the use of social networking sites as means to become academically successful like in a study that mentioned that Facebook and SNS are considered the biggest distraction among college students, and that their study habits and grades are affected [29]. Based on the nursing students' perspectives on their study habits, the study participants from the five countries unanimously identified time management as essential, and a fixed schedule is important when utilizing social networking platforms. This is evidently described in the result of the study conducted where SNS can enhance performance in a simple task environment and will make no difference in a complex performance environment [30]. Utilization was also found to be consistently high among female nursing students. It's a known fact that nursing is female-dominated [31], there are confirmed gender differences that exist with adopted technologies, and they occur among genders of ages 16 to 35 [32]. These findings are firmly contradicted by a study conducted in China where Chinese females were found to be clearly less engaged with technology as compared with Chinese males [33]. On the other hand, women who were found to have higher introversion and extraversion traits turned to the internet for social services, such as online chats and discussion groups [34].

In a geographical and cultural context, it can be viewed that in countries like Iran, Israel, Oman & Turkey, the female gender is given less opportunity for public exposure which results to higher use of SNS which is seen as a viable medium to socialize and be engaged with others instead of being physically present. Oman and the Philippines are identified highest in terms of utilization. In a study conducted by Sultan Qaboos University among health science students, the findings showed Youtube, Facebook, and Twitter as the highest used social media platforms. The findings generally suggest that usage and addiction is

similar to the rest of the world ^[35]. On other hand, in the Philippines, the US-based Pew Research Center said that 88% of Filipinos see that increasing Internet usage is good for education, given that the Philippines is often dubbed as the “social media capital” of the world, ^[36]. On the contrary, Turkey ranks least in the utilization of social networking sites in the findings of Kirschner & Karpinski in Turkey, a study among undergraduate students reveals that students who report academic problems are more likely to use the Internet for social networking (e.g., Facebook) purposes ^[37]. The results of the hypothesis testing yielded positive relationship between study habits against the extent of utilization among nursing students in the five participating countries. The levels of engagement among nursing students in the utilization of SNS can be most beneficial and relevant to their study purpose. SNS are deemed necessary in this generation of learners wherein a significant amount of information acquisition is within grasp and readily available.

Conclusion

It can be concluded that the nursing students from five participating countries are widely female dominated and that the extent of utilization is of foremost female gender. This study also identified the level of nursing student social networking sites’ utilization and benefits perceived moderately in both aspects, taking into account access, usability, efficiency and reliability. The most utilized social media platform in Israel, Iraq, Oman, Philippines, and Turkey are WhatsApp & Facebook. A triangulation of utilization, perceived benefits and study habits show a positive relationship among the three factors. Similarly, a significant positive correlation between students’ study habits and the extent of utilization means that the more students devote themselves to study habits, the higher the level of SNS utilization. The utilization of SNS for educational purposes have both positive and negative implications [13, 38–39].

Recommendations

The study further suggests that similar studies in the future should focus not only on the aspects of access, usability, efficiency & reliability, but the inclusion of behavioral aspects as well as cultural differences can also be taken into consideration. The homogeneity of the sample can also be improved by tapping more diverse nursing student population in Israel and Iraq. Oman and Turkey with the exception of the Philippines are homogenous in terms of culture and geographic settings. A mixed-method approach can also be recommended to contextualize the confounding influence of culture and geographic location in future studies. Although there are several studies on SNS and academic performance, very few are done in nursing academia that focus on skills or psychomotor development through these virtual platforms that can also be used in the teaching-learning process ^[40]. The influences of SNS among nursing students and their great potentials in enhancing students’ study habits are an area of opportunity in developing curricula that are not restricted to the four corners of the classroom. SNS by and wide is the current and most relevant platform that can further add to the learning success

and academic achievement of nursing students. A tailored strategy for enhancing student participation, interaction and real-life learning are just a few of the advantages of tapping on the positive contribution of SNS as a learning-teaching tool in nursing education.

Abbreviation

SNS—Social Networking Sites

IRB- Institutional Review Board

MARG-Mentors and researchers group

Declarations

Ethics & Consent to Participate

The study sought approval from Assiut University in Egypt dated IRB 08/08/2017 number 38 and ethical committee clearances from Oman- Sultan Qaboos University College of Nursing, Iraq- Bagdad University ,Israel Max Stern Yezreel Valley College-,Turkey- Ondokuz Mayıs Üniversitesi & Philippines - Northern Luzon Adventist College. Consent to participate was obtained from the participants. All participants were above 18 years old.

Consent for Publication

Consent from all authors were taken

Availability of Data & materials

Not applicable

Competing Interest

No competing interest

Funding

The study did not receive any form of funding.

Authors' contributions

Researcher	Contribution
GFDV,ARC,SAF	conception of idea, research design, data collection/field work, data management, analysis, report writing ,interpretation of results ,critical reviewing with intellectual input
GFDV,ARC,SAF, MK,SO,CLS,MBA,HF,JPC	data collection/field work, data management,
GFDV,ARC,SAF, MK,SO,CLS,MBA,HF,JPC	critical reviewing with intellectual input
GFDV,ARC,SAF, MK,SO,CLS,MBA,HF,JPC	critical reviewing with intellectual input
GFDV,ARC,SAF, MK,SO,CLS,MBA,HF,JPC	critical reviewing with intellectual input

All authors have read and approved the manuscript.

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Not Applicable

References

- [1] Schmitt, T. L., Sims-Giddens, S. S., & Booth, R. G. Social media use in nursing education. *OJIN: The Online Journal of Issues in Nursing*, 2012. 17(3). 10.3912/OJIN.Vol17No03Man02
- [2] Guraya, S. Y. (2016). The usage of social networking sites by medical students for educational purposes: a meta-analysis and systematic review. *North American journal of medical sciences*, 2016. 8(7), 268. PMID: PMC4982355 DOI: 10.4103/1947-2714.187131
- [3] Paton, C., Bamidis, P. D., Eysenbach, G., Hansen, M., & Cabrer, M. Experience in the use of social media in medical and health education. *Yearbook of medical informatics*, 2011.20(01), 21-29. DOI: 10.1055/s-0038-1638732
- [4] Boyd, D. M., & Ellison, N. B. Social network sites: Definition, history, and scholarship. *Journal of computer-mediated communication*, 2007. 13(1), 210-230. <https://doi.org/10.1111/j.1083-6101.2007.00393.x>
- [5] Skiba, D. Nursing Education 2.0: Poke me. Where's your face in space? *Nurs Educ Perspect*, 2007.29(6), 370-1. PMID: 17715807
- [6] Skiba, D. Emerging technologies center: Nursing Education 2.0: Social Networking for professionals . *Nursing education perspectives*, 2008.29(6), 370-371. PMID: 19244805
- [7] Lim T, Ismail JT. The use of Facebook for online discussions among distance learners. *Online J Distance Educ*. 2010. Volume 11 , Issue 4, Pages 72 – 81. <https://dergipark.org.tr/en/pub/tojde/issue/16910/176376>

- [8] Mistry, V. Critical care training : using Twitter as a teaching tool. *British Journal of Nursing*, 2011.20(20), 1292. <https://doi.org/10.12968/bjon.2011.20.20.1292>
- [9] Pittenger, A. L. The use of social networking to improve the quality of interprofessional education. *American journal of pharmaceutical education*, 2013. 77(8), 174. <https://doi.org/10.5688/ajpe778174>
- [10] Drake , M. A., & Leander , S.A. Nursing students and Ning: using social networking to teach public/health community in 11 baccalaureate nursing programs. *Nursing education perspectives*,2013. 34(4), 270-2. DOI: 10.5480/1536-5026-34.4.270 PMID: 24187734
- [11]Green, J., Wyllie, A., & Jackson, D. Social Networking for Nurse Education: Possibilities, perils and pitfalls. *Contemporary Nursing Journal Aus Nurs Prof*,2014. 47(1/2), 180-189. <https://doi.org/10.1080/10376178.2014.11081919>
- [12] Radford, S. Building a mentor programme: Social networking can enhance communication among peers mentors in nursing education. *Nursing Standard*,2014. 28(39), 64. DOI:10.7748/ns.28.39.64.s50
- [13] Tower, M., Latimer , S., & Hewitt, J. Social networking as a learning tool: Nursing students' perception of efficacy. *Nurse Education Today*, 2014.34(6), 1012-1017. <https://doi.org/10.1016/j.nedt.2013.11.006>Get rights and content
- [14] Robiins-Bell, S. Higher Education as Virtual Conversation. *Educause Review* ,2008. 43(5), 24-26. <https://www.learntechlib.org/p/102251/>.
- [15] Karpinski, A. C., & Duberstein, A.A description of Facebook use and academic performance among undergraduate and graduate students. In Annual Meeting of the American Educational Research Association, San Diego, CA 2009 .(pp. 5-10).
- [16] Greenhow, C. Online social networking and learning: What are the interesting research questions? *International Journal of Cyber Behavior, Psychology and Learning (IJCPL)*, 2011. 1(1), 36-50. DOI: 10.4018/ijcbpl.2011010104
- [17] Polit, D., & Beck, C. *Essentials of Nursing Research* (4th ed.). Philadelphia: Wolters Kluwer Health /Lippincott & williams. 2014
- [18] Young, F. *Statistics made simple*. Manila: Bright Minds Publishing House.2010
- [19] Mukhtar, S., Ali, A., Muqeet, A., Hussain, M., Afzal, M., & Gilani, S. Influence of Social Media on Students' Academic Performance. *Independent journal of Allied Health Sciences*, 2018.183-190.
- [20] Good, R. Online social networking and education:Study reports on new generations social and creative interconnected lifestyles. *Master New Media*. Retrieved [http://www.masternewmedia.org/learning_eduactional_technologies\(2007, November 09\)](http://www.masternewmedia.org/learning_eduactional_technologies(2007, November 09))

- [21] Santos, I. M., Hammond, M., Durli, Z., & Chou, S. Y. Is there a role for Social Networking Sites in education? In *IFIP World Conference on Computers in Education* (pp. 321-330). Springer, Berlin, Heidelberg. 2009. https://doi.org/10.1007/978-3-642-03115-1_34
- [22] Lorenzo, G., Oblinger, D., & Dziuban, C. How choice, co-creation, and culture are changing what it means to be net savvy. *Educause Quarterly*, 2007.30(1), 6. Retrieved January 1, 2020 from <https://www.learntechlib.org/p/101304/>.
- [23] Johnson, J. Extensive television viewing and the development of attention and learning difficulties during adolescence.2007. Retrieved 4/22,2019, from Arcpedi.ama-assn.org.
- [24] Mehmood, S., & Tawsir, T. The effects of Social Networking Sites on the Academic Performance of students in College of Applied Sciences Nizwa, Oman. *International Journal of Arts & Commerce*, 2013.2(1), 111-125. Retrieved 1/1,2020 from academia.eu.
- [25] Skiba, D. Nursing Education 2.0: social networking and the WOTY . *Nursing education perspectives* , 2010. 37(1) 44-6. PMID: 20397481
- [26] Kumari, A., Ali, K. S., & Mahadevamurthy, M. Use of social media among dental students of Farooqia Dental College, Mysore: A study. In *International Conference on Open Access-Scholarly Communication Reincarnated: A Futuristic Approach* 2013.(pp. 19-20). Retrieved from <https://www.researchgate.net> 1/1/2020.
- [27] Paul, J. A., Baker, H. M., & Cochran, J. D. Effect of online social networking on student academic performance. *Computers in Human Behavior*, 2012.28(6), 2117-2127. <https://doi.org/10.1016/j.chb.2012.06.016>
- [28] Al Saqri, S. H., Alkwiese, P. J., & Hernandez, T. Influence of utilization of social networking sites (sns) on study habits among Saudi Nursing Students in Ha'il University. *Journal of Biology, Agriculture & Healthcare* 2016, 6(24), 45-56. Retrieved from <https://www.researchgate.net> 1/1/2020
- [29] Dias, J. *The ultimate college distraction*. 2009. Retrieved April 23, 2019, from www.ualbanyezine.com
- [30] Min, J. Effect of the use of social network sites on Task performance : Towards sustainable performance in a distracting work environment. *Journal of Sustainability*, 2017.9(12), 2270. <https://doi.org/10.3390/su9122270>
- [31] Selwyn, N. High Tech Guy tech : An exploration of undergraduate students gendered perception of information and technologies. *Sex Roles*, 2007.56(7-8), 525-536. <https://doi.org/10.1007/s11199-007-9191-7>
- [32] Goh, T.T. Exploring gender differences in SMS-based mobile library search system adoption. *Educational Technologies & Society*, 2011.14(4), 192-206. www.jstor.org/stable/jeductechsoci.14.4.192.

- [33] Jackson , L., Zhao, Y., Qiu, W., Kolenic, A., Fitzgerald, H., Harold, R., et al. Culture gender and information technology use : a comparison of chinese and US children . *Computers in Human Behavior*,2008. 24(6), 2817-2829. <https://doi.org/10.1016/j.chb.2008.04.007>
- [34] Hamburger, Y., & Ben-Artzi, E. The relationship between extraversion and neuroticism and the different uses of internet. *Computers in Human Behavior*,2000. 16(4), 441-449. [https://doi.org/10.1016/S0747-5632\(00\)00017-0](https://doi.org/10.1016/S0747-5632(00)00017-0)
- [35] Sultan Qaboos University study highlights social apps addiction in Oman. *Times of Oman*. 2015, September 25. Retrieved <https://timesofoman.com/article/68468>
- [36] Geronimo, J. Growing Internet use in PH good for education – study. *Rappler*. (2015, March 21). Retrieved <https://www.rappler.com/nation/87542-growing-internet-use-ph-good-education>
- [37] Tekinarslan, E., & Gürer, M. D. Problematic Internet use among Turkish university students: A multidimensional investigation based on demographics and Internet activities. *Journal of Human Sciences*, 2011.8(1), 1028-1051. Retrieved from <https://j-humansciences.com/ojs/index.php/IJHS/article/view/1458>, 1/1/2020
- [38] Eke, H. N., Omekwu, C. O. , & Odoh, J. N. The use of social networking sites among undergraduate students of the University of Nigeria . *Library Philosophy and Practice*,2014.,1195.Retrievedfrom <https://www.questia.com/library/journal.1/1/2020>
- [39] Ahmed, I., & Qazi, T. F. A look out for academic impact of social networking sites (SNSs): student based perspective . *African Journal of Bussiness Management* ,2011. 5(12), 5022-5031. DOI: 10.5897/AJBM11.595
- [40] Kakushi, L., & Evora , Y. Social networking in nursing education: integrative literature review .2016. vol.24 *Revista latino-americana de enfermagem*, 24. <http://dx.doi.org/10.1590/1518-8345.1055.2709>

Tables

Table1. Participants Profile

Profile	Categories	Israel	Iraq	Oman	Philippines	Turkey	Total	
Age	16-19 yrs old	5 (0.4%)	43(3.8%)	74(6.5%)	12(1.1%)	25(2.2%)	159(14.0%)	
	20-22 yrs old	45 (4.0%)	151 (13.3%)	229 (20.1%)	51 (4.5%)	144 (12.7%)	620 (54.5%)	
	23-25 yrs old	43 (3.8%)	59 (5.2%)	39 (3.4%)	9 (0.8%)	33 (2.9%)	183 (16.1%)	
	26-28 yrs old	72 (6.3%)	11 (1.0%)	13 (1.1%)	3 (0.3%)	3 (0.3%)	102 (9%)	
	30 and above	54 (4.7%)	10 (0.9%)	8 (0.7%)	0 (0%)	1 (0.1%)	73 (6.4%)	
	Total		219 (19.3%)	274 (24.1%)	363 (31.9%)	75 (6.6%)	206 (18.1%)	1137 (100%)
Gender	Male	60 (5.3%)	119 (10.5%)	110 (9.7%)	14 (1.2%)	56 (4.9%)	359(31.6%)	
	Female	159 (14%)	154(13.5%)	246(21.6%)	60(5.3%)	150(13.2%)	769 (67.6%)	
	Prefer not to say	0 (0%)	1(0.1%)	7 (0.6%)	1(0.1%)	0 (0%)	9(0.8%)	
	Total		219 (19.3%)	274 (24.1%)	363 (31.9%)	75 (6.6%)	206 (18.1%)	1137 (100%)
Year Level	Year I	63 (5.5%)	12 (1.1%)	0 (0%)	0 (0%)	0 (0%)	75 (6.6%)	
	Year II	37 (3.3%)	117 (10.3%)	37 (3.3%)	0 (0%)	0 (0%)	191 (16.8%)	
	Year III	48 (4.2%)	76 (6.4%)	77 (6.8%)	72 (6.3%)	163 (14.3%)	436(38.3%)	
	Year IV	52 (4.6%)	35 (3.1%)	71 (6.2%)	0 (0%)	42 (3.7%)	200 (17.6%)	
	Year V	0 (0%)	24(2.1%)	56(4.9%)	2(0.2%)	1(0%)	83(7.3%)	
	Others	19(1.7)	10(0.9)	122 (10.7%)	1 (0%)	0 (0%)	227 (20)	
	Total		219 (19.3%)	274 (24.1%)	363 (31.9%)	75 (6.6%)	206 (18.1%)	1137 (100%)

Table 2-Frequency and Percent Distribution of the Accessibility, Usability, Efficiency and Reliability of the Extent of Utilization of Social Networking Sites as a means of Communication

Extent	Accessibility		Usability		Efficiency		Reliability	
	F	%	f	%	f	%	f	%
not utilized (NU)	71	6.2	24	2.1	55	4.8	45	4.0
slightly utilized (SU)	697	61.3	316	27.8	368	32.4	427	37.6
moderately utilized (MU)	348	30.6	684	60.2	514	45.2	532	46.8
highly utilized (HU)	21	1.8	107	9.4	191	16.8	129	11.3
No data	0	0	6	0.5	9	0.8	4	0.4
Mean (QD)	2.34 (SU)		2.81 (MU)		2.74 (MU)		2.66 (MU)	
SD	0.529		0.612		0.707		0.637	

n=1137

Table 3-Means, Standard Deviations and Qualitative Description of the Utilization of Social Networking Sites

Statements	Mean	Std. Deviation	Qualitative Description
1. I work on my assignments using my own computer inside our house.	2.88	1.030	Often
2. I go to internet cafes near our house to do my assignments.	2.33	1.240	Sometimes
3. I utilize social networking sites inside the campus to help me on my seatwork.	1.94	1.026	Sometimes
4. I utilize social networking sites in malls to get me updated on school activities.	2.42	1.058	Sometimes
5. I can access social networking sites in restaurants for research purposes.	2.12	1.018	Sometimes
6. I can access social networking sites for my assignments through my mobile phone.	2.52	1.115	Often
7. I can access social networking sites for my assignments through my portable laptop.	3.01	1.014	Often
8. I can access social networking sites for my assignments through game consoles like Playstation3 and Xbox360.	2.23	1.206	Sometimes
9. I can access social networking sites for my assignments through my iPad.	1.76	1.037	Sometimes
10. I can access social networking sites for my assignments through my USB broadband.	2.20	1.090	Sometimes
Accessibility	2.34	.529	Slightly utilized
1. I utilize social networking sites for communication purposes in relation to my studies.	2.40	1.030	Sometimes
2. I utilize social networking sites to get me updated in school activities.	3.10	.869	Often
3. I utilize social networking sites to gain more knowledge about my current lessons	2.97	.888	Often
4. I utilize social networking sites to share my thoughts and opinion about our discussions.	2.79	.995	Often
5. I utilize social networking sites for advance studies.	2.74	.884	Often
Usability	2.81	.612	Moderately Utilized
1. I rely on social networking sites to familiarize myself with future lessons.	2.71	.988	Often
2. I rely on social networking sites to get me updated on school activities	2.69	.864	Often
3. I rely on social networking sites to improve my knowledge and skills.	2.79	.973	Often
4. I rely on social networking sites for group researches.	2.72	.865	Often

Statements	Mean	Std. Deviation	Qualitative Description
5. I rely on social networking sites for my assignments and projects.	2.75	.946	Often
Reliability	2.74	.707	Moderately utilized
1. Social networking sites provide correct data and information	2.80	.916	Often
2. Social networking sites enhance my abilities in providing nursing care.	2.82	.866	Often
3. Sources from social networking sites are accurate.	2.71	.802	Often
4. I learn proper techniques related to nursing skills from social networking sites.	2.56	.875	Often
5. Clinical instructors recognize my expertise obtained from social networking sites.	2.39	.921	Sometimes
Efficiency	2.66	.637	Moderately utilized

Legend: 1.00-1.49 (never/not utilized), 1.50-2.49 (sometimes/slightly utilized), 2.50-3.49 (often/moderately utilized), 3.50-4.00 (always/highly utilized)

Table 4- *Frequency Count and Percent Distribution of the Most Helpful among Nursing Students*

Social Media Network	Frequency	Percent
None	3	0.3
Facebook	288	25.3
Instagram	60	5.3
Whatsapp	296	26.0
Snapchat	41	3.6
Google	293	25.8
e-learning sites	23	2.0
Youtube	85	7.5
Twitter	34	3.0
Others	14	1.2
Total	1137	100.0

Table 5- *Means, Standard Deviations, and Qualitative Descriptions of Extent of Doing Possible Study Habits*

	Mean	Std. Deviation	Qualitative Description
1. Do I allot specific number of hours for studying?	2.74	.944	Often
2. Do I follow a definite time schedule?	2.94	.903	Often
3. Do I take time to study everyday	2.71	.942	Often
4. Do I know which time of the day I can study best?	2.84	.962	Often
5. Do I easily find enough time to study?	2.85	.959	Often
6. Do I allot time every week to review?	2.51	.910	Often
7. Am I able to focus entirely when I study?	2.80	.875	Often
8. Do I get interested on my studies?	2.93	.824	Often
9. Do I easily concentrate when I study?	2.87	.800	Often
10. Do I usually seek a quiet place to study?	3.12	.788	Often
11. Am I able to study best with music on/ while watching TV?	2.41	1.038	Sometimes
12. Do I study even when there are no quizzes and exams?	2.50	1.037	Often
13. Do I easily complete a difficult assignment?	2.70	.889	Often
14. Do I enjoy learning?	2.81	.822	Often
15. Do I believe I could get better grades?	3.10	.852	Often
16. Before I leave class, do I make sure that I know which homework to accomplish	3.10	.847	Often
17. Are exceptional grades important to me?	3.00	.843	Often
18. Do I prioritize studying over other activities?	2.95	.860	Often
19. Do I exert extra effort when I study?	2.98	.812	Often

Legend: 1.00-1.49 (never), 1.50-2.49 (sometimes), 2.50-3.49 (often), 3.50-4.00 (always)

Table 6-Inferential Results on Significant Difference in the Extent of Utilization and Perceived Benefits of Social Networking Sites among Nursing Students when grouped by Profile Variables

Grouping Variable	Accessibility	Usability	Reliability	Efficiency
Age	$X^2(4)=6.89$ $p=0.142$	$X^2(4)=16.04$ $p=0.003^{**}$	$X^2(4)=11.01$ $p=0.026^{*a}$	$X^2(4)=12.36$ $p=0.015^*$
Gender	$U=122944$ $p=0.003^{**}$	$U=129223$ $P=0.134$	$U=130415$ $P=0.264$	$U=134163$ $P=0.586$
Year Level	$X^2(4)=19.90$ $p=0.001^{**}$	$X^2(4)=1.187$ $p=0.880$	$X^2(4)=21.35$ $p=0.000^{**}$	$X^2(4)=33.68$ $p=0.000^{**}$
Country	$X^2(4)=126.98$ $p=0.000^{**}$	$X^2(4)=40.10,$ $p=0.880$	$X^2(4)=51.92,$ $p=0.000^{**}$	$X^2(4)=147.96,$ $p=0.000^{**}$

*significant at 0.05

**significant at 0.01

^apairwise comparison disconfirmed that sig. diff. exist

Table 7-*Repeated Measures ANOVA Result on Significant Difference among each domains of the extent of utilization and perceived benefits of social networking sites among nursing students*

factor1	Mean	Std. Error	F	df	Sig.
Accessibility	2.34	.017	151.334	3	.000**
Usability	2.81	.021			
Reliability	2.74	.024			
Efficiency	2.65	.020			

**significant at 0.01

*significant at 0.05

Table 8-*Bonferroni Result*

(I) factor1	(J) factor1	Mean Difference (I-J)	Std. Error	Sig.
Accessibility	Usability	-.470	.022	.000**
	Reliability	-.397	.025	.000**
	Efficiency	-.308	.023	.000**
Usability	Reliability	.074	.019	.001**
	Efficiency	.163	.021	.000**
Reliability	Efficiency	.089	.019	.000**

**significant at 0.01

*significant at 0.05

Table 9- *Pearson-r Result on Relationship between the Extent of Doing Possible Study Habits and Extent of Utilization of Social Networking Sites*

	accessibility	usability	reliability	efficiency
potential Pearson Correlation	.246**	.377**	.287**	.387**
Sig. (2-tailed)	.000	.000	.000	.000
N	1134	1130	1128	1133

** . Correlation is significant at the 0.01 level (2-tailed).

Figures

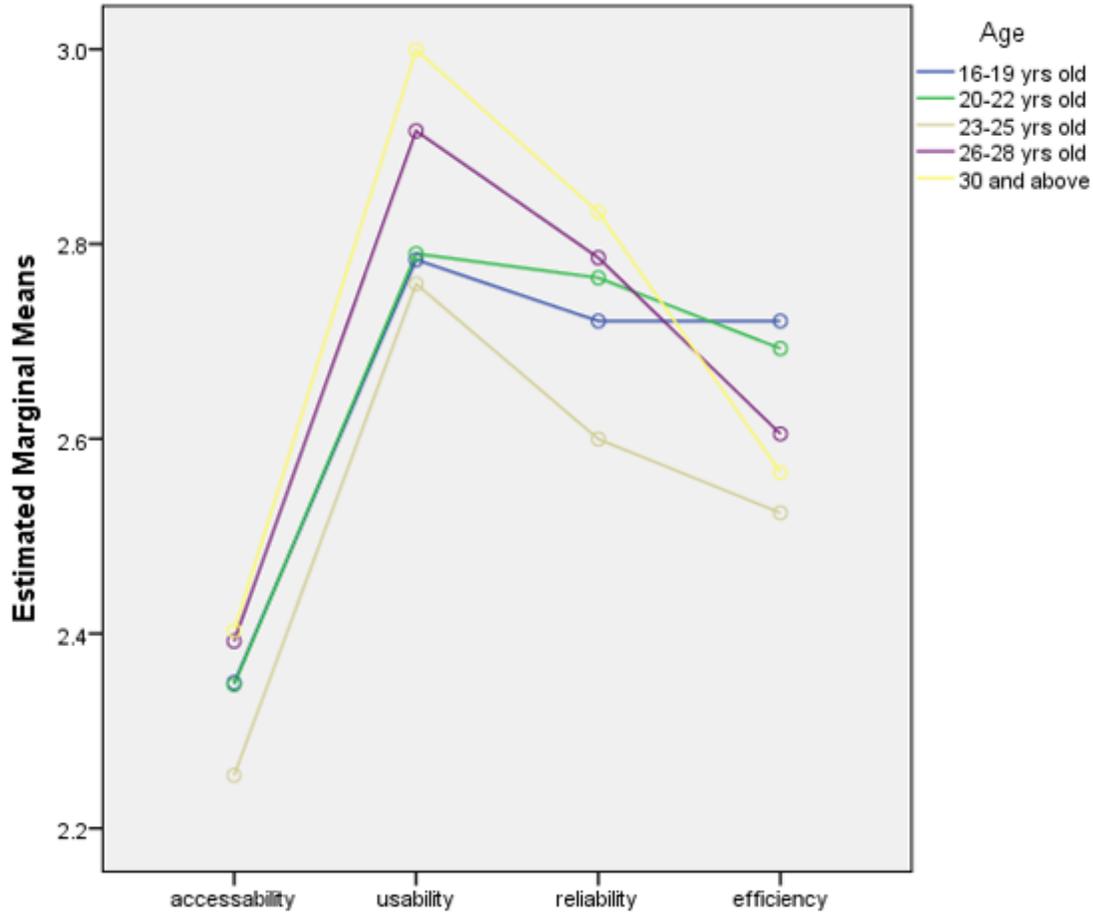


Figure 1

Line Chart of the Extent of Utilization of the Nursing Students Across All Domains when grouped by Age

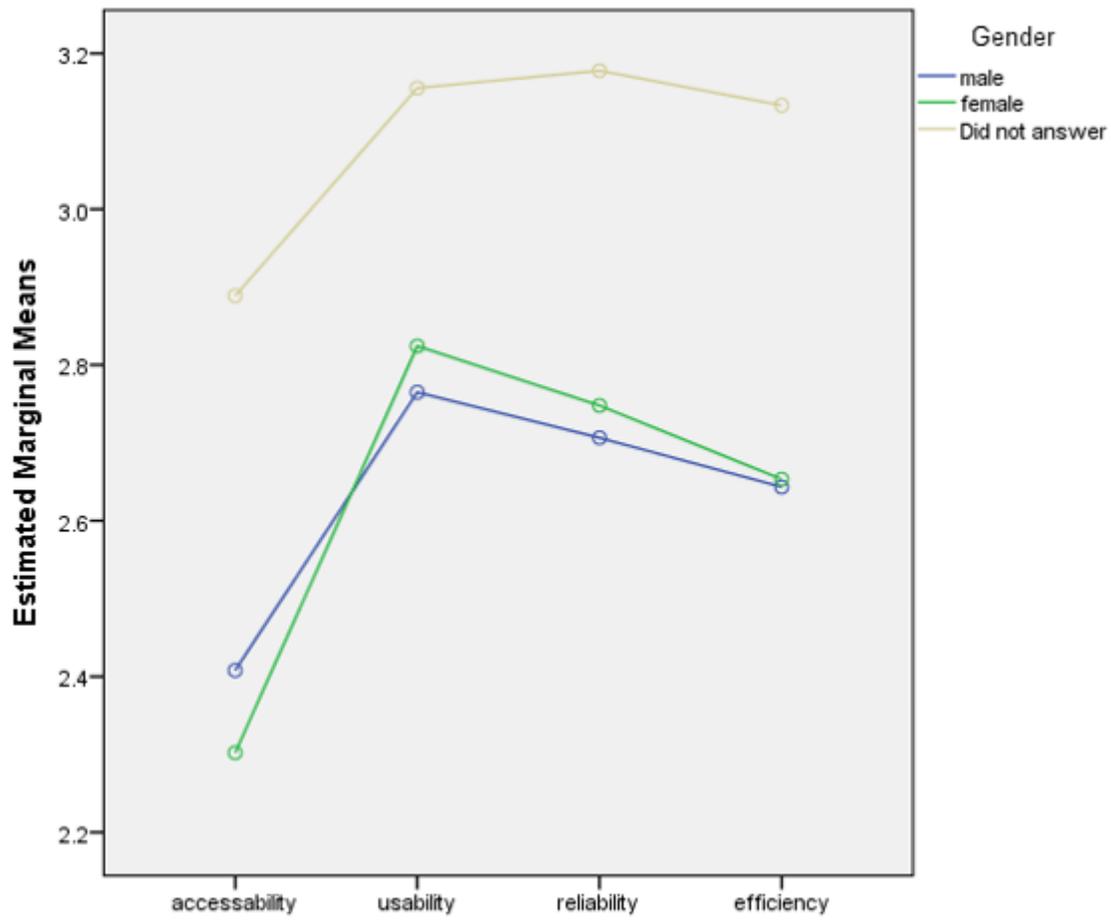


Figure 2

Line Chart of the Extent of Utilization of the Nursing Students Across All Domains when grouped by Gender

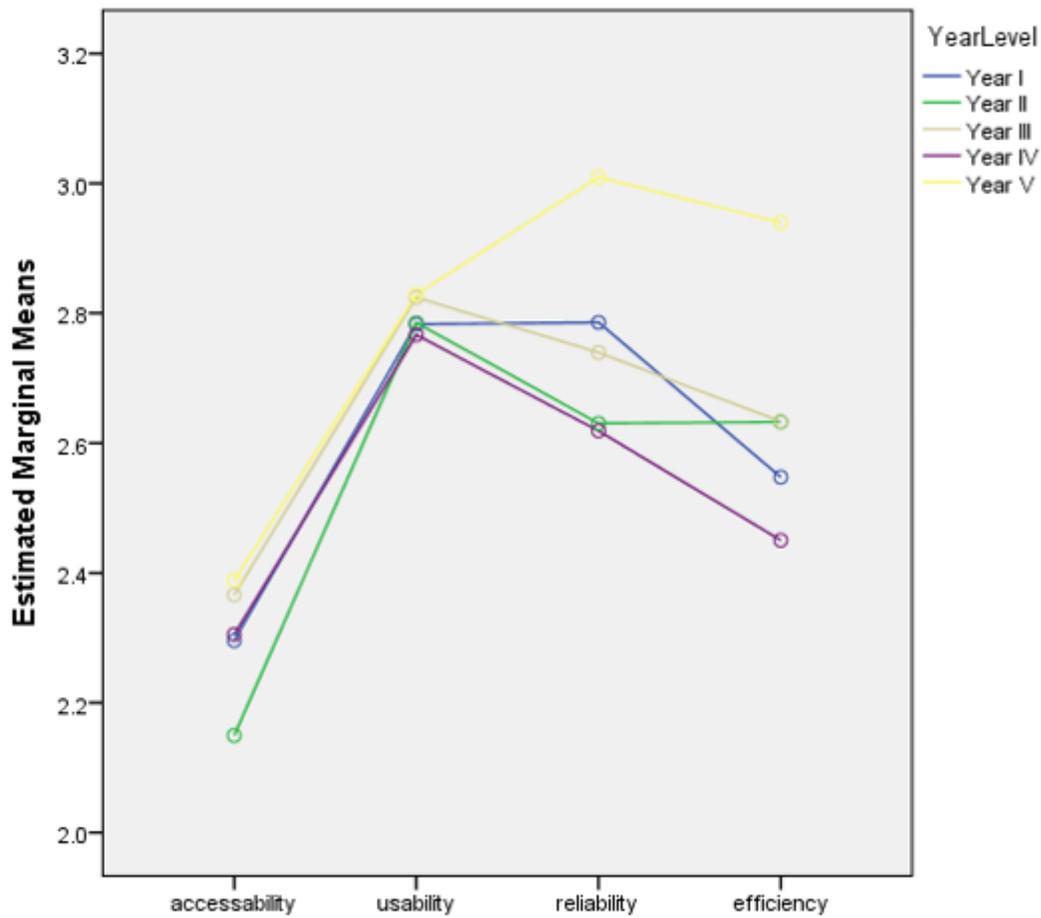


Figure 3

Line Chart of the Extent of Utilization of the Nursing Students Across All Domains when grouped by Year

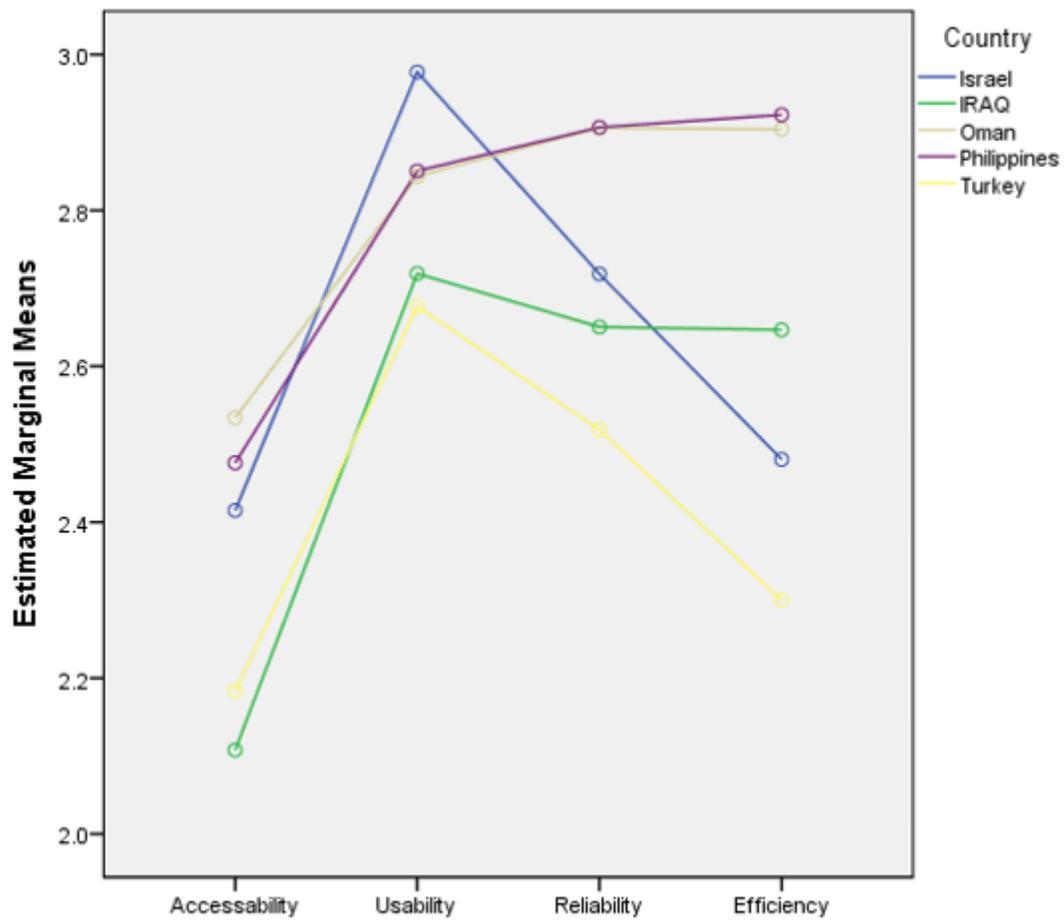


Figure 4

Line Chart of the Extent of Utilization of the Nursing Students Across All Domains when grouped by Country

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