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Background:

Students use social media for sharing information and connecting with their friends, also for peer support, peer learning and student engagement. Research indicates that approximately twice the number of students were using social media for educational purposes compared to academic staff and almost all students discuss academic issues on social media. However, little is known about how diverse cohorts of student nurses use social media for specific purposes at different stages of their learning.

Objectives:

- Identify how student nurses in each country of study use social media for learning.
- Identify how each generation of student nurses use social media for learning.
- Identify how student nurses use social media as their education progresses

Design:

A cross-sectional survey

Settings:

The study was undertaken across three countries Jamaica, Trinidad and Tobago and the UK.

Participants:

Student nurses from each of the countries that consented to participate met the inclusion criteria.

Methods:

1050 student nurses across the three countries self-completed the cross-sectional survey between March and September 2019. Data was analysed using descriptive and inferential statistics.

Results:

WhatsApp® was the most used platform for learning amongst participants. Watching videos and downloading articles represented two-thirds of social media usage for learning. Smart phones were the most used device to access social media. Kruskal-Wallis tests were significant (≤ 0.001) for checking social media and messaging in lecture, use of social media for studies and classroom activities by country, generation (except classroom activities) and year of education. Use of social media for classroom activities had no significance by generation.

Conclusion:

Country, generation and year of education are factors that influence the use of social media in student nurses' learning. These should be considered by Universities in curriculum development and in teaching and learning delivery. From a pragmatic approach, social media is available and used by a majority of student nurses and can be widely assimilated into the nursing curriculum.

Keywords:

Student nurses; Social Media; Teaching and Learning; Caribbean; Social Media Guidance

1. Introduction

Contemporary societies increasingly use and connect to social media SoMe (SoMe) for personal and/or professional purposes. This also applies to the nursing community's SoMe experiences in learning (Moorley & Chinn, 2019). SoMe are open and accessible platforms available on the internet. They allow communication, knowledge sharing, support and discussion and can facilitate connections between nurses, educators, academics and student nurses, which improves nursing community dynamics (Authors, 2020a). Oducado et al. (2019) reported the use of SoMe among millennial student nurses. SoMe are embedded in student nurses' professional development despite the lack of guidance at national and international levels (Authors 2020b). SoMe enhances learning and needs further integration into student nurses' curriculum (Pimmer et al., 2018; Jones et al., 2016; Tower, Latimer & Hewitt, 2014; Chugh, Grose, & Macht, 2020). To be able to effectively integrate SoMe into student nurses' learning it is important to understand how they use SoMe for learning, which is the aim of this study.

1.1 Background

Most students use SoMe for sharing information and social networking (Booth, 2015). SoMe can be used for peer support, peer learning and student engagement (Authors, 2020a) and also professionally (Wang et al., 2019). Duke et al. (2017) surveyed Canadian student nurses, and identified that twice the number of students were using SoMe for educational purposes compared to academic staff and almost all students discussed academic issues on SoMe. The most used SoMe for formal and informal learning were YouTube®, text messaging and

Facebook®. There was a marked difference between faculty and students regarding use of Facebook® for formal learning. Price et al. (2018) examined 1st year nursing students' educational use of SoMe prior to starting their nursing programme and found that most students used at least one type of platform Facebook®, Instagram® or Twitter®. During their nursing education, most used Facebook®, Instagram® and Twitter®, with an increase in Twitter® and Facebook® usage. They concluded an increase in student confidence and SoMe being beneficial in knowledge acquisition. SoMe increases cooperative learning, teacher/student communication (Qi, 2019; Bal & Bicen, 2017) and increased motivation in learning (Bal & Bicen, 2017).

Concerns have been expressed regarding, privacy and professionalism on SoMe (De Gange et al., 2019), as well as the addictive nature of SoMe (Azizi, Soroush, & Khatony, 2019) especially with a lack of guidance and policies that could impact student nurses use of SoMe (Authors, 2020a). The literature illustrates that student nurses are using SoMe for educational purposes and they are using them more than educators. Therefore, a gap exists where little evidence on how and what student nurses use SoMe for, particularly those from the Caribbean where no evidence exists. There is a lack of effective implementation and use of SoMe in higher education teaching and learning and in particularly nurse education (Greenhow and Galvin, 2020). The purpose of this research is to investigate student nurses use of SoMe for learning to support and guide Higher Education Institutions and nursing educators to use SoMe effectively in teaching and learning, especially in relation to country, generation and year of education settings, to help adapting SoMe use to the student population. To address these gaps in knowledge and to enhance student nurses teaching and learning through SoMe, this study had two research

questions: 1. What do student nurses use SoMe for in their learning? 2. What are the differences in SoMe use in learning between generations, years of study and the 3 countries investigated?

This study is the first study investigating and comparing Caribbean student nurses use of SoMe for learning with UK student nurses. The findings may offer new knowledge on how the student nurses of Trinidad and Tobago, Jamaica and the UK use social media for learning. The study outcomes have potential to support the theory that SoMe is useful and beneficial in student learning and provide guidance on the implementation of SoMe use in the learning process. This provides support and understanding towards the management of SoMe in the curriculum and delivery of education by nursing educators to improve effectiveness and use.

1.2 Aim and objectives

This study aimed to identify how SoMe is used for learning purposes by student nurses across 3 countries.

The objectives were to:

- Identify how student nurses in each country use SoMe for learning.
- Identify how each generation of student nurses use SoMe for learning.
- Identify how student nurses use SoMe as education progresses.

2. Methods

2.1 Population

Participants were student nurses from Jamaica, Trinidad and Tobago and the UK. The setting was chosen as a move towards working with Caribbean nurses and students to build academic and

research capacity particularly in the current climate where Black researchers and academics encounter barriers in undertaking research and publishing. Other influencing factors include existing collaborations and the lack of research on Caribbean student nurses, which guided the selection and inclusion of the countries in this study. A total of 1077 participants from the three countries responded from a possible pool of 63533 participants (63000 in the UK, 233 in Trinidad and Tobago and 340 in Jamaica). The UK and Trinidad and Tobago met the sample size target calculated with Yamane's formula using $\pm 5\%$ level of precision and the population size stated. Jamaica experienced recruitment challenges and did not meet the sample size requirement. Inclusion and exclusion criteria were applied (table 1).

(insert table 1 here)

2.2 Recruitment

To ensure recruitment consistency and ethical requirements across countries a flowchart was created to organise and structure the research linked to ethical practice. First, creation of recruitment folders per country including the participant information sheet (PIS) stating the ethical approval and contacts, the survey link and file, virtual learning environment (VLE) invitation and a thank you email. Second, recruitment folders were sent to the research lead in each country for review and queries. The third step outlined ethical practice regarding participants recruitment at each University. The VLE invitation with the survey link and PIS were uploaded onto the University's VLE advertising the study. Students' participation was voluntary. Where possible the study was advertised face to face to support the VLE invitation and on Twitter®, in the UK supported by @WeNurses, @WeStudentNurses and by a very active student

nurses' community in Scotland. The fourth step during the data collection involved response monitoring, weekly VLE re-advertising, daily for the first week on SoMe, then weekly. Originally planned for 3 months, however due to recruitment difficulties in the Caribbean sites the deadline was extended to 6 months, after which data collection closed (step 5).

2.3 Data collection

A cross-sectional survey was used comprising 31 items, with 6 questions on demography and 24 on SoMe use and learning utilising a 5 point Likert scale, yes or no responses and one open ended question. The free text comments will be reported in a subsequent paper. The survey was developed by the authors specifically for this study based on a literature search and authors' knowledge and research in SoMe for education and piloted with the student body and academic staff from the Schools and no changes were required. The pilot helped us to identify if any modifications to questions were required and to ensure cultural congruence. Data cleaning identified anomalies in age for three observations, which were excluded.

2.4 Ethical consideration

Ethical approval was granted from all the participating institutions. We ensured no coercion by reminding students at every stage that participation was voluntary and did not impact their studies. We also reiterated responses were anonymous, and that data were protected using a University password locked server ensuring General Data Protection Regulation and local ethical compliance. The first question of the survey was a consent question, any participants who did

not consent were excluded. Participants were informed that once the survey was submitted, we could not withdraw them from the study.

2.5 Data analysis

To achieve the study's aim and objectives descriptive and inferential statistics were performed using SPSS® statistics software version 25.0. Kruskal-Wallis tests and Dunn post hoc tests with Bonferroni corrections were used to test for differences in SoMe use by country, generation and year of study. Statistical significance was set at $p < 0.05$ (two-tailed).

3. Results

Data cleaning removed those that did not meet the eligibility criteria (e.g., non-consent) $N=1050$. Data management involved creating a codebook with identified variables. The UK response was $N=832$, Trinidad and Tobago $N=158$ and Jamaica $N=60$.

3.1 Demography: Age, gender and ethnicity

Previously reported demographic data (Authors, 2020b) showed that participants from Jamaica and Trinidad and Tobago had similar mean age of 23yrs (6.00) and a mean age for UK participants of 29yrs (9.01). Participants were predominately females for all countries.

The sample included twelve ethnic groups. Jamaican student nurses identified 4 ethnicities, Trinidad and Tobago 6 and UK participants 11 (table 2).

(Insert table 2 here)

3.2 Social media platforms and usage per country

Tables 3, 7, and 9 show the use of SoMe by country, generation and for each year of nursing education. Both Caribbean countries pre-registration BSc nursing programmes were over 4 year, while the UK had 3 year programmes. Participants had a choice of six different SoMe platforms. The entire Jamaican sample used WhatsApp®, with most from Trinidad and Tobago (97.5%) and the UK (86.6%) also reporting WhatsApp® use. Instagram® use was similar in all countries ranging from 76.1% (UK) to 81.7% (Jamaica). Jamaica and Trinidad and Tobago had similar use of YouTube® (93.3% and 88.6% respectively) while the UK used it less (59.7%). Facebook® was used more in the UK (88.7%) compared to the Caribbean countries (69%). Twitter® was used less by the Caribbean participants (20%) compared to the UK (60%). The least used platform in all countries was LinkedIn® with a use between 7.6% (Trinidad and Tobago) and 13.3% (Jamaica). Watching videos and downloading articles represented two-thirds of SoMe uses. Knowledge concerning the Nursing Council's SoMe guidance was 15% in Jamaican participants and 22.8% of Trinidad and Tobago participants were aware of guidance. In the UK, 86.1% of the sample reported knowledge of the Nursing Council's guidance.

(Insert table 3 here)

Kruskal-Wallis tests (KWT) showed statistically significant differences between countries in checking SoMe during lectures, ($p < 0.001$). The post hoc test showed that there were no significant differences in checking SoMe in lectures between the UK and Trinidad and Tobago ($p = 0.261$). Significant differences were observed between the UK and Jamaica ($p < 0.001$) and Trinidad and Tobago and Jamaica ($p = 0.002$). Jamaican participants checked their SoMe during

lectures more than the other countries. Messaging during lectures was analysed and KWT showed a significant difference between the 3 countries ($H(2)=29.7$, $p<0.001$). Dunn's test showed that messaging during lectures was significantly different between the UK and Jamaica ($p<0.001$) and Trinidad and Tobago and Jamaica ($p=0.002$). Jamaican students' message more during lectures than those in the UK and Trinidad and Tobago. Concerning the use of SoMe for studies and SoMe in classroom activities, a significant differences was found between counties ($H(2)=97.7$, $p<0.001$; $H(2)=24.4$, $p<0.001$). Dunn's tests demonstrated that the use of SoMe in studies was significantly different between the UK and Trinidad and Tobago ($p<0.001$) and UK and Jamaica ($p<0.001$), and no significance between Jamaica and Trinidad and Tobago. UK Participants used SoMe less for studies than in Jamaica and Trinidad and Tobago. This same test revealed that the use of SoMe in classroom activities were significantly different between the UK and Trinidad and Tobago ($p<0.001$) and the UK and Jamaica ($p=0.003$), but not between Trinidad and Tobago and Jamaica. Participants in the UK used SoMe less in classroom activities than in Jamaica and Trinidad and Tobago. (table 4)

All countries most common SoMe access mode was smart phones followed by laptops and desktop computers. Most participants accessed SoMe from multiple devices.

This analysis demonstrated how student nurses use SoMe in their learning. Students from the Caribbean countries use and integrate SoMe more in their studies compared to the UK. The next variable analysed in this study was age as a factor in student nurses using SoMe for learning.

(Insert table 4 here)

3.3 Generational use of social media

Age was recoded into four generational groups Boomers II (BII), Generation X (GenX), Generation Y (GenY), and Generation Z (GenZ) (Strauss and Howe, 1991) (table 5 and 6).

(insert table 5 here)

(Insert table 6 here)

While the range of SoMe platforms used were similar, within group analysis of generational use of SoMe platforms showed that BII all used Facebook®, YouTube® and WhatsApp® most followed by Twitter® (25%) and Instagram® (25%). GenX used WhatsApp® (92%) the most followed by Facebook® (86.7%), YouTube® (62.7%), Twitter® (46.7%), Instagram® (44.0%) and LinkedIn® (17.3%). GenY reported using WhatsApp® (92%) the most followed by Facebook® (84.3%), Instagram® (68.5%), YouTube® (62.2%), Twitter® (49.5%) and LinkedIn® (15%). GenZ's platform usage was highest for Instagram® (88.6%) followed by WhatsApp® (86.3%), Facebook® (84.3%), YouTube® (69%), Twitter® (54.6%) and LinkedIn® (7.7%). Participants were asked if they used SoMe for watching videos and short clips, downloading articles, participating in an online chat, sharing information and ideas or completing a SoMe learning task. All BII participants downloaded articles, followed by shared information and ideas (75%), watched videos (50%) and completed SoMe learning tasks (25%). In GenX the most frequent reason for using SoMe was downloaded articles (70.7%), followed by shared information and ideas (60%), watched videos (58.7%), participated in online chat (54.7%) and completed SoMe learning tasks (28%). GenY, downloaded articles (62.7%) was the most common reason, followed by watched videos (57.7%), shared information and ideas (47.7%), participated in an online chat (46.2%) and completed a SoMe learning task (22.3%). GenZ watched videos the most (62.5%), followed by downloaded articles (62.4%), participated in online chat (37.1%), shared information and ideas (34.5%) and

completed SoMe learning tasks (25.6%). Reporting knowledge of Nursing Council's SoMe guidance was more common by BII (100%), GenX (86.7%), and GenY (80.8%) than GenZ (63.8%). BII (50%) checked SoMe the least during lectures followed by GenX (61.3%), Gen Y (77.5%) and GenZ (91.3%).

(insert Table 7 here)

Kruskal-Wallis tests showed significant differences between generations in SoMe checking during lectures ($H(3)=116.2$, $p<0.001$). Dunn's tests showed significant differences between GenX and GenY ($p=0.003$), GenX and GenZ ($p<0.001$) and GenY and GenZ ($p<0.001$) in checking SoMe during lectures. There were no significant differences between GenX and BII ($p=1.000$), BII and GenY ($p=1.000$) and BII and GenZ ($p=0.440$). GenZ reported checking SoMe the most, followed by GenY, BII and GenX. Concerning messaging during lectures, KWT demonstrated significant differences in messaging during lectures between generations ($H(3)=121.8$, $p<0.001$). Dunn's tests identified a significant difference between BII and GenZ ($p=0.014$), GenX and GenY ($p=0.002$), GenX and GenZ ($p<0.001$) and GenY and GenZ ($p<0.001$) in messaging during lectures. No significant difference was observed between BII and GenX ($p=1.000$) and BII and GenY ($p=0.321$). BII texted the least, followed by GenX, GenY and GenZ. Generational use of SoMe for studies was investigated and KWT showed statistically significant differences ($H(3)=18.0$, $p<0.001$) between generations in SoMe use for studies. Dunn's test was significant for GenY and GenZ ($p<0.001$) but not significant between the other generations. GenZ used SoMe the most in their studies, followed by GenX, GenY and BII. There were no significant differences between SoMe use in classroom activities by generations ($H(3)=7.7$, $p=0.053$) (table 8).

(insert table 8 here)

3.4 Social media usage by year of education

In Jamaica and Trinidad and Tobago, a nursing degree is 4 years, while in England, Ireland and Scotland the programme is 3 years, with an optional 4th year in Scotland to obtain a Master of Science. SoMe use was analysed by different cohorts (years) of the nursing programme, the mean age for each year of study in the entire sample was similar 28yrs (8.77). Regarding the distribution of countries, apart from the 4th year the UK was the most represented for each year of study followed by Trinidad and Tobago and Jamaica (Table 9).

Cross tabulation by year of study was performed to investigate the use of SoMe, starting with the platform used. The 1st year students used WhatsApp® (88.5%) the most, followed by Facebook® (80.7%), Instagram® (77.6%), YouTube® (65%), Twitter® (47.4%) and LinkedIn® (8.8%). The 2nd year had similar usage. For the 3rd year students, the distribution differed slightly, Facebook® (88.3%) was the most used then WhatsApp® (85.9%), Instagram® (77.2%), Twitter® (64.8%), YouTube® (57.6%) and LinkedIn® 15.5%). The 4th year used WhatsApp® most (96.3%) then YouTube® (88.9%) followed by Instagram® and Facebook® equally used (83.3%), Twitter® (20.4%) and finally LinkedIn® (13.0%). The main uses of SoMe for the 1st year were watching videos (61.9%), downloading articles (59.5%), online chat (40.5%), sharing information (34.7%) and completing a SoMe learning task (25.7%). The 2nd year mostly used SoMe for downloading articles (65.1%) followed by watching videos (61.9%), online chat (42.7%), sharing information (40.3%) and completing SoMe tasks (26.1%). 3rd year students mainly used SoMe for downloading articles (66.6%), watching videos (53.8%), sharing information (52.1%), online chat (46.6%) and completing SoMe learning tasks (23.4%). The 4th year students mostly watched videos (72.2%),

downloaded articles (57.4%), shared information (42.6%), online chat (22.2%) and completed SoMe learning tasks (11.1%). Knowledge of Nursing Council SoMe guidance was reported most by 2nd year students (80.8%), followed by 3rd year (75.5%), 1st year (67.1%) and 4th year students (31.5%).

(Insert table 9)

There were significant differences in checking SoMe during lectures by year of nursing study ($H(3)=30.0$, $p<0.001$). Dunn's tests showed significant differences between 1st and 3rd year ($p<0.001$) and 2nd and 3rd year students ($p=0.007$) but there were no significant differences between other years regarding checking SoMe during lectures. 1st years reported checking SoMe the least during lectures, followed by 2nd year, 3rd year and 4th year students. There was significance between years of study and messaging in lectures ($H(3)=34.5$, $p<0.001$). Dunn's tests showed significant differences between 1st and 2nd year ($p=0.042$), 1st and 3rd year ($p<0.001$), 1st and 4th year ($p=0.004$) and 2nd and 3rd year students ($p=0.015$), but no significant difference between 2nd and 4th year and 3rd and 4th year in messaging during lectures. 4th year students reported messaging during lectures the most, followed by 3rd year, 2nd year and 1st year students. A significant difference between the use of SoMe for studies by year of study was observed ($H(3)=17.8$, $p<0.001$). Dunn's tests showed significant differences between 1st and 4th year students ($p<0.001$), 2nd and 4th year students ($p<0.001$) and 3rd and 4th year students ($p=0.027$) in SoMe use for studies. 1st years reported using SoMe in their studies least, followed by 2nd year, 3rd year and 4th year students. There was a significant difference in the use of SoMe in the classroom by year of study ($H(3)=15.9$, $p<0.001$). Dunn's tests showed significant differences between 1st and 3rd year students ($p=0.023$) and 1st and 4th year students ($p=0.005$) in the use of

SoMe in the classroom. 1st year students reported using SoMe in the classroom the least, followed by 2nd year students, 3rd year students and 4th year students (Table 10).

(insert table 10 here)

4. Discussion

Types of SoMe platforms used across our sample was aligned with those identified in the study by Price et al., (2018). However, uses of SoMe were different and could reflect distinctive uses of SoMe by nurse educators in teaching and learning material and approaches as well as reflecting different learning styles. YouTube® video and short clips are particularly suitable in supporting behaviourist teaching especially in skills learning. In our study, all students regardless of country of origin, reported checking SoMe in lectures. It was not established if these were for professional or personal reasons. Furthermore, participants in Caribbean countries used SoMe more for messaging during lectures, in their studies, and in classroom activity than those from in UK. This is an important observation considering that Caribbean participants reported limited internet access. The majority of the student nurses a study by Duke et al. (2018) discussed academic issues on SoMe. Similarly, the majority of respondents in a study by Alsayed, Bano, and Alnajjar (2019) reported accessing SoMe platforms for academic purposes. Students from Caribbean countries clearly use and integrate more SoMe in their learning than their counterparts in the UK. The relatively low use of SoMe for learning in the UK could reflect: (i) educators' lack of knowledge; (ii) reluctance to adopt SoMe in teaching & learning practices; (iii) acknowledgement related to older generations learning style; and (iv) the educator's generation.

Older generations (BII) appeared to use fewer platforms than younger generations (Delello & McWhorter, 2017). Generational characteristic had an impact on students' learning style. Younger generations used more video and short clips and appeared to be visual learners whereas older generations seem to be reading learners. This could be related to their primary education, for example, BII were probably taught by reading compared to GenZ who may have been taught with videos and online technology. This can have an important impact on learning organisation and acquisition. The significant difference observed between generations regarding using SoMe during a lecture could be attributed to how technology has changed the way we communicate. Almost all SoMe platforms have a direct messaging function, making it easy to send messages over the internet. It may also be perceived as being less disruptive in a lecture. This data was interesting to contrast with Authors, (2020b) study that showed BII were messaging mostly when on duty in clinical practice. However, Usher et al. (2014) showed that participants' preferred primary source of information was online media. A generational difference was identified in SoMe use while studying, with younger generations using SoMe the most for this purpose. However, there was no significant difference in the generational use of SoMe in classroom activities. This could be explained by educational materials and resources embedded in SoMe platforms (Price et al. (2018); Männistö et al. (2019); Alsayed, Bano, & Alnajjar (2019)). SoMe use in classroom activities is mainly directed by the educator who plans the learning activity and can incorporate SoMe to meet the learning outcomes. This approach can minimise, generational differences on the use of SoMe for learning and enhance individual learning outside classroom activities and lectures.

During the 4th year of education, half of the SoMe platforms were used consistently but 2 had increased usage, Twitter® and LinkedIn®. This was represented mostly by Caribbean countries with an initial low use of Twitter®. This could be explained by Twitter® being linked with searching for clinical resources and materials, sharing and exchanging professional ideas (Kung & Oh, 2014), and LinkedIn® known for job prospects (Huang, Tunkelang & Karahalios, 2014). Our study clearly identified that the use of SoMe differs between the years of education. 1st year student nurses used mostly YouTube®, which is an efficient teaching resource for behaviourism, which is known as an effective teaching theory in skill learning and resonated with some skills of “watch and repeat” (Stewart, 2012). 1st year student nurses were from younger generations who seemed to be more visual learners and comfortable in SoMe use for learning. During the 2nd year of education YouTube® use decreased, while the use of SoMe for downloading articles, chat and discussion such as Twitter® increased. This phenomenon could be related to the increase of underpinning theories and academic skills teaching, older generations could have become more comfortable with the theoretical stage of “enlightenment” (Stewart, 2012) potentially involving more constructivist methods (reading, peer discussion). The 3rd and 4th year of education can be seen as “consolidation and going further” where theories of connectivism and constructivism can be applied to student nurses’ autonomies and prepare them for their new career. These stages in learning can support understanding of student nurses’ behaviour in relation to SoMe learning use. Since its inception SoMe has not only gained importance as a resource but also as teaching material which can explain its increased use in lectures, messaging in lectures, in studies and in classroom activities. Our study showed that SoMe use for learning increased as the course progressed, at an individual and group level, which could demonstrate a growth in confidence to

use SoMe toward the final year (Price et al., 2018) but also by an augmentation of the integration of SoMe in the classroom. Across the study, the smartphone was the most common device used to access SoMe, followed by laptops and tablets. Student nurses' use of social media through the various years of education can be linked to elements of VARK (visual, auditory, reading/ writing, and kinaesthetic) pedagogical theory (Prithiskumar & Michalel 2014). Importantly educators should not use VARK and social media to label student learning styles but use the knowledge to improve the way students learn, augmenting social media learning with classroom activities and incorporating it into the curriculum. In our experience of VARK and social media learning, students tend to sit in the middle between visual and auditory learning styles. Therefore, social media can be a way of helping students to identify learning styles and help educators to meet learning needs (Idrizi and Fillposka 2018).

This study has limitations, it focussed on student nurses' SoMe use in learning and not in the general use of SoMe or qualified nurses' use. The survey was a self- assessment, developed by the authors and was used for the first time. Jamaica did not meet the sample size, but UK and Trinidad and Tobago did. The survey sample was not random and therefore may not be representative of the wider student nurse populations in these countries. The results may be applicable to other countries with a similar nursing education system. However, further research in a wider range of countries would be necessary to demonstrate this empirically.

5. Conclusion and recommendation

Understanding SoMe usage by student nurses for learning is fundamental. Country, generation and year of education are factors that influence the use of SoMe in learning and should be taken into consideration by educational institutions in curriculum development and teaching and learning delivery. The knowledge generated from this study can be linked with learning theories facilitating transferability into practice and present important information to effectively use SoMe to tailor teaching and learning to the student population. SoMe should be incorporated into the nursing curriculum as a learning tool and guidance and support offered to student nurses on its appropriate use. From a pragmatic approach, SoMe is already available and used by a majority of student nurses and can be widely assimilated into the nursing curriculum and teaching and learning processes. A wider choice of teaching and learning approaches as well as a more individual learning experience by using SoMe can increase inclusivity and equity.

6. References

Adeyemi-Adelanwa, O., Gooden, A. B., Dawkins, P., & Lindo, J. L. (2015). Attitudes of patients towards being cared for by male nurses in a Jamaican hospital. *Caribbean Journal of Nursing*. DOI: 10.1016/j.apnr.2015.06.015.

Authors, (2020a). To be added following double-blind review

Authors, (2020b). To be added following double-blind review

Azizi, S.M., Soroush, A. & Khatony, A. (2019). The relationship between social networking addiction and academic performance in Iranian students of medical sciences: a cross-sectional study. *BMC psychology*, 7(1), pp.1-8.

Bal, E. & Bicen, H. (2017). The purpose of students' social media use and determining their perspectives on education. *Procedia Computer Science*, 120, pp.177-181.

Booth, R.G. (2015). Happiness, stress, a bit of vulgarity, and lots of discursive conversation: A pilot study examining nursing students' tweets about nursing education posted to Twitter. *Nurse education today*, 35(2), pp.322-327.

Chugh, R., Grose, R. & Macht, S.A. (2020). Social media usage by higher education academics: A scoping review of the literature. *Education and Information Technologies*, pp.1-17.

De Gagne, J.C., Hall, K., Conklin, J.L., Yamane, S.S., Roth, N.W., Chang, J. & Kim, S.S. (2019). Uncovering cyberincivility among nurses and nursing students on Twitter: A data mining study. *International journal of nursing studies*, 89, pp.24-31

Delello, J.A. & McWhorter, R.R. (2017). Reducing the digital divide: Connecting older adults to iPad technology. *Journal of Applied Gerontology*, 36(1), pp.3-28.

Duke, V.J., Anstey, A., Carter, S., Gosse, N., Hutchens, K.M. & Marsh, J.A. (2017). Social media in nurse education: Utilization and E-professionalism. *Nurse Education Today*, 57, pp.8-13.

Greenhow, C. and Galvin, S., 2020. Teaching with social media: Evidence-based strategies for making remote higher education less remote. *Information and Learning Sciences*

Huang, S.W., Tunkelang, D. & Karahalios, K. (2014). The role of network distance in linkedin people search. In *Proceedings of the 37th international ACM SIGIR conference on Research & development in information retrieval* (pp. 867-870).

Idrizi, E. and Filiposka, S., 2018. VARK learning styles and online education: Case Study. *learning*, pp.5-6.

Jones, R., Kelsey, J., Nelmes, P., Chinn, N., Chinn, T. & Proctor-Childs, T. (2016). Introducing Twitter as an assessed component of the undergraduate nursing curriculum: case study. *Journal of advanced nursing*, 72(7), pp.1638-1653.

Kung, Y.M. & Oh, S. (2014). Characteristics of nurses who use social media. *CIN: Computers, Informatics, Nursing*, 32(2), pp.64-72.

Lewis, P. (2011). Training nurses for export: A viable development strategy? *Social and Economic Studies*, pp.67-104.

Männistö, M., Mikkonen, K., Kuivila, H.M., Virtanen, M., Kyngäs, H. & Kääriäinen, M. (2020). Digital collaborative learning in nursing education: a systematic review. *Scandinavian journal of caring sciences*, 34(2), pp.280-292.

Moorley, C. & Chinn, T. (2019). Social media participatory CPD for nursing revalidation, professional development and beyond. *British Journal of Nursing*, 28(13), pp.870-877.

Oducado, R.M.F., Sales, M.R., Magarzo, A.J.P., Panes, P.M.A. & Lapastora, J.T.P. (2019) (a). Perceptions and attitude on using social media responsibly: Toward social media literacy in nursing education. *Belitung Nursing Journal*, 5(3), pp.116-122.

Pimmer, C., Brühlmann, F., Odetola, T.D., Dipeolu, O., Gröhbiel, U. & Ajuwon, A.J. (2018). Instant messaging and nursing students' clinical learning experience. *Nurse education today*, 64, pp.119-124.

Price, A.M., Devis, K., LeMoine, G., Crouch, S., South, N. & Hossain, R. (2018). First year nursing students use of social media within education: Results of a survey. *Nurse education today*, 61, pp.70-76.

Prithishkumar, I.J. and Michael, S.A., 2014. Understanding your student: Using the VARK model. *Journal of postgraduate medicine*, 60(2), p.183.

Qi, C. (2019). Social Media Usage of Students, Role of Tie Strength, and Perceived Task Performance. *Journal of Educational Computing Research*, 57(2), pp.385-416.

Stewart, M. (2012). Understanding learning: theories and critique. *University teaching in focus: A learning-centred approach*, pp.3-20.

Tower, M., Latimer, S. & Hewitt, J. (2014). Social networking as a learning tool: Nursing students' perception of efficacy. *Nurse education today*, 34(6), pp.1012-1017.

Tsuji, T. (2011). Trinidadian and Tobagonian immigrants. *Multicultural America: An encyclopedia of the newest immigrants*, pp.2135-2189.

Usher, K., Woods, C., Casella, E., Glass, N., Wilson, R., Mayner, L., Jackson, D., Brown, J., Duffy, E., Mather, C. & Cummings, E. (2014). Australian health professions student use of social media. *Collegian*, 21(2), pp.95-101.

Wang, Z., Wang, S., Zhang, Y. and Jiang, X. (2019). Social media usage and online professionalism among registered nurses: A cross-sectional survey. *International journal of nursing studies*, 98, pp.19-26