



## Review

## A narrative synthesis on healthcare students use and understanding of social media: Implications for practice

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## ABSTRACT

**Objectives:** The aim of this review was to explore healthcare students' professional and personal use and understanding of social media.

**Design and data sources:** A comprehensive search was performed in October 2017 using CINAHL, Academic Search Complete, Education Search Complete, ERIC, MEDLINE and British Education Index. A further search was completed in February 2018 including Google Scholar.

**Review methods:** A summary table was used to organise data by author, year, type of study, methods, findings, limitations, recommendations and additional comments. Qualitative findings were organised into related themes and these were reviewed and discussed amongst the authors to confirm their relevance.

**Results:** The prevalent themes that emerged were; understanding social media, perceptions of professional & safe social media use, positive aspects of social media and factors influencing social media usage.

**Conclusions:** Social media is predominately used by students to communicate with peers and to access course related information. It can provide a collaborative environment which allows engagement and promotion of the nursing profession. Student nurses are generally aware of what constitutes safe and professional social media usage but there remains a need for additional training on how students should navigate the online world as there remains a significant risk of unprofessional behaviours.

## 1. Introduction

Social media covers a multitude of online platforms allowing the user to create and exchange content (Van Dijck and Poell, 2013). Carr and Hayes (2015, p49) believe there is no universal definition of social media considering it to be “mass-personal communication facilitating perceptions of interactions among users...” This perspective raises an interesting point as there is a juxtaposition between ‘mass’ and ‘personal’ with the word ‘mass’ implying use by a large number of people and ‘personal’ reflecting the individual nature of social media. We view social media as a form of online media that allows individuals to connect and network for personal or professional purposes. Connecting and networking can include sharing and exchanging content relevant to any parties involved. We also believe that social media allows individuals to share ideas, concerns and perspectives which can yield real time responses which is often instantaneous.

The increasing influence of social media has provided healthcare students with a new realm of knowledge. Social media offers the potential to interact with peers and experts to keep up to date with clinical

practice (Wilson et al., 2014). Despite the positive prospects provided it is often viewed with suspicion and fear and this is particularly prominent in the healthcare setting where such sites are often blocked by management (Ferguson, 2013) Online platforms may provide healthcare practitioners the opportunity to display unprofessional behaviours relating to patients, carers, relatives, colleagues and employers (Jones and Hayter, 2013). This review of contemporary literature provides some context in relation to student nurses interaction and engagement with social media, examining their perceptions of safe and professional use.

## 2. Aim

The aim of this review was to explore healthcare students' professional and personal use and understanding of social media.

There was an inclusion criteria that considered (I) Any article involving healthcare students, social media or social networking (II) Only articles published in English and (III) No narrowing of publication year was required at this stage as this is a contemporary topic of research

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**Table 1**  
Initial search.

|  |   |
|--|---|
| Databases searched                       | CINAHL, Academic Search Complete, Education Search Complete, ERIC, MEDLINE, British Education Index |
| Search terms                             | “student nurse” OR “nursing student”<br>AND<br>“social media”                                       |
| Number of articles identified            | 110   |
| Added Limiters                           | None  |
| Number of relevant articles after review | 23  |

Our exclusion criterion did not consider (I) Any studies involving patient-led social media and (II) Patient education and health promotion initiatives.

An initial literature search was completed using appropriate search terms as identified in [Table 1](#).

It was important to carry out a comprehensive review, which not only focused on nursing and healthcare related studies but also on educational theory and pedagogy. As can be seen in [Table 1](#) the search yielded 110 articles, of these, twenty-three articles were deemed to be relevant to the topic after applying the exclusion criteria.

A further search was undertaken with more general search terms that identified five relevant articles ([Table 2](#)).

Articles deemed not relevant generally focused on patient education, patient communication forums, patient engagement or an unsuitable demographic - for example one article explored urologists' use of social media which is not generalisable or relatable to the experiences of student nurses or allied health students. To ensure the search was as thorough as possible a discussion with a colleague who has significant experience in the field of social media in nursing identified some further well-known authors resulting in 3 more suitable publications. The final search utilised Google Scholar, which did not yield any more suitable articles but did reassuringly identify the majority of the papers already selected. A total of 28 papers were reviewed (see [Fig. 1](#)).

A thorough review was carried out on all relevant papers and a brief summary of each article documented, where and when the research took place, the aims, the methods used, the findings, any limitations and any recommendations (see [Table 3](#)). The prevalent themes that emerged were understanding social media, perceptions of professional & safe social media use, positive aspects of social media and factors influencing social media usage.

In order to understand any phenomena it must be observed and described before it can be understood. Eight publications reported the social media habits of students ([Garner and O'Sullivan, 2010](#); [Chretien et al., 2010](#); [Giordano and Giordano, 2011](#); [Maloney et al., 2014](#); [Usher et al., 2014](#); [Benetoli et al., 2015](#); [Ferguson et al., 2016](#); [Mather et al., 2016](#)). One of the most comprehensive studies investigated Australian health professional students from a variety of courses with 55% being student nurses ([Usher et al., 2014](#); [Mather et al., 2016](#)). This cross-sectional study of 637 first year and 451 final year students explored

**Table 2**  
Second search.

|  |   |
|--|---|
| Databases searched                       | CINAHL, Academic Search Complete, Education Search Complete, ERIC, MEDLINE, British Education Index |
| Search terms                             | “healthcare professionals”<br>AND<br>professional use of social media                               |
| Number of articles found                 | 162   |
| Added Limiters                           | 2010–2017; English; All adult   |
| Number of articles after limiters        | 10  |
| Number of relevant articles after review | 5   |

social media usage at twelve universities using an online survey devised by [Giordano and Giordano \(2011\)](#). Both groups provided similar results with around 50% of students using online media as their primary source of information and Facebook being the most widely used social media platform with at least 91% of students utilising it. This research suggested that universities need to engage with students via social media. Their study was limited because they did not fully identify the motivations for using social media. The high prevalence of Facebook usage amongst health students is comparable to the findings of [Benetoli et al. \(2015\)](#) who reported in their systematic literature review between 76% and 100% of pharmacy students had an account. Benetoli did not identify whether these accounts were solely for personal use or whether they were also used for professional activities.

There is some evidence of smaller scale studies that have tried to explore the habits of students navigating social media, [Maloney et al. \(2014\)](#) carried out a survey of 142 physiotherapy students and discovered the main drivers for using social media were peer collaboration and enhanced communication which enabled accessible and instantaneous conversations with fellow students and university staff. [Ferguson et al. \(2016\)](#) carried out focus groups and agree that collaboration is a key factor in social media engagement but with the added caveat that this is carried out at a ‘safe distance’. The students reported it be a less intrusive way to communicate compared to phoning or direct one-to-one communication. The studies discussed here indicate the majority of health professional students use social media regularly. They find it helpful in communicating with fellow students and sourcing information relating to their studies. Importantly these studies indicate a professional use by students even if it is unintentional. As time progresses and social media develops, it is important to recognise the type of media being used by health care students as we need to be aware of how fake news can influence learning for example a student may read a piece of research that is fake and think it is real. Therefore, there is an obligation on Universities to educate students on how to recognise fake news.

### 3. Professional and safe social media use

A number of researchers ([Garner and O'Sullivan, 2010](#), [Jain et al., 2014](#), [Maloney et al., 2014](#), [Nyangeni et al., 2015](#), [Ferguson et al., 2016](#), [Barnable et al., 2018](#)) have explored the perceptions of what is ‘safe’ whilst using social media. All of this research with the exception of the South African study ([Nyangeni et al., 2015](#)) discovered that the majority of students understood the general concepts of what was meant by professional use of social media. Students in South Africa did not appear to appreciate patient confidentiality with all students indicating they took pictures of patients and shared this on social media platforms. This information was reported directly to the researcher and despite this being an unprofessional behaviour, it was not escalated or reported for further investigation. This may, however be linked to cultural practices and local nursing council regulations. In the United Kingdom post Francis Report, there is a clear need to inform the relevant authorities and not to allow such behaviours to continue ([Francis, 2015](#)). There appears to be variation on guidance on how social media is used by health care students in different countries. This opens the door for a more global and international approach on safe professional usage.

Despite most students having an awareness of unprofessionalism, there were some causes for concern identified. [Barnable et al. \(2018\)](#) found 34% of pharmacy students in one university in Canada were aware of other students who had breached confidentiality, although the nature of these breaches is not quantified. [Westrick \(2016\)](#) explored some recent cases of online misconduct and their consequences with one student nurse being dismissed from the course for posting a picture of a patient online, she also posted the hospital where the patient was receiving treatment Another nursing student had a blog page and discussed a clinical error that occurred. The incident was written in such

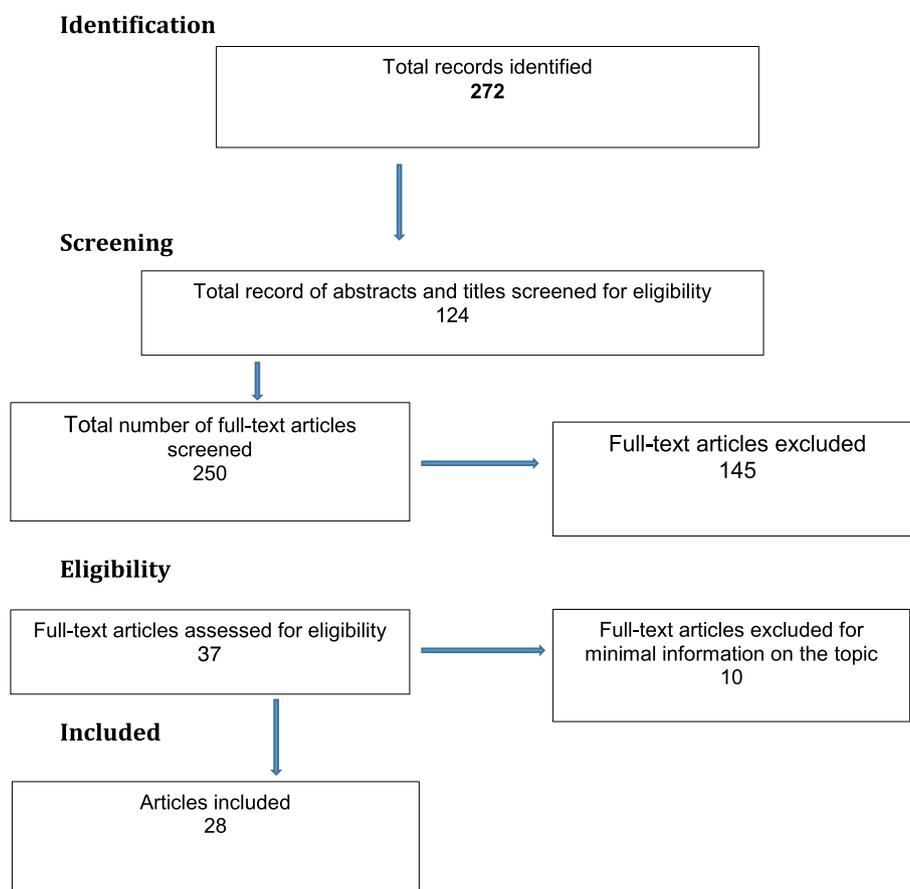


Fig. 1. PRISMA flow chart.

detail that it could be determined where it took place; again, this student was dismissed.

Jain et al. (2014) study examined nursing students, lecturers and the public's perceptions of appropriate postings on social media. The participants were unaware that these were fictitious posts prior to the study, this gained ethical approval and gave a more realistic response to these posts. A series of fictitious posts were created relating to topics such as illegal substance use, comments on patients, kissing (same-sex pairs and opposite sex-pairs) – the viewers were asked to rate the appropriateness of the image using a Likert scale. The overall findings found that the public and staff were in agreement with the unprofessional nature of topics such as disclosing patient information and illegal drug use. The one area where there was some difference of opinion was same-sex relationships with the public and university staff predominately supporting traditional relationship values. This reflects the current changing public attitudes with only 41% of those born in the 1940's agreeing that same-sex relationships are acceptable compared with 73% of those born in the 1980's (NatCen Social Research, 2016). Social media has the power to affect change by instigating societal participation allowing individuals to communicate easily and freely and can have the power to break down long-held prejudices (Ahlgvist et al., 2010).

A worrying and emerging trend is the increasing prevalence of cyber-bullying, which was identified, in a systematic review carried out by de Gagne et al. (2016). The review found there were cases of cyber-bullying reported via the university online learning environment (OLE) and these were not only directed towards students but also university

staff. Marnocha et al. (2015) surveyed 293 US Nursing schools to identify unprofessional behaviours and how these were managed, 11% of incidents were in relation to cyber-bullying – with one incident concerning two nursing students exchanging words on social media which escalated into the classroom. This type of behaviour does not only exist in nursing students' communities, it is an increasingly reported phenomena in wider society, particularly amongst school children (Walrave and Heirman, 2011; Monks et al., 2012).

The studies discussed here predominantly reported that students had an awareness of what constituted safe and professional social media use. Despite the self-reporting of appropriate use, there were instances of unprofessional behaviours resulting in student's dismissal from their studies and also an emergence of cyber-bullying against fellow students and university staff. In the next paragraphs we discuss the findings on positive use of social media.

The majority of published studies focused on the negative impacts of social media, however there are positive outcomes associated with its use. Ferguson et al. (2016) carried out research into first year nursing students' experiences of social media during the transition to university. Analysis of their focus group interviews concluded that students found social media particularly helpful when discussing forthcoming assignments, particularly those involving group work. This was a very small study of ten students and it cannot be considered to be generalisable to all students, nevertheless the benefits of engaging with peers on social media was confirmed by Maloney et al. (2014) who identified peer collaboration as a commonly reported theme by physiotherapy students. When reviewing some of the research in relation to social media

**Table 3**  
Summary of data.

| Authors   | Study   | Aim   | Methods  | Findings   | Limitations  | Recommendations   | My observations   |
|---|---|---|--|--|--|---|---|
| George, D.R. (2011)   | At Penn State University - descriptive account of course and limited evaluation of its benefits. The course was 3 part minicourse exploring professional use of Facebook, RRS, Twitter, LinkedIn. | Descriptive overview of course; evaluation of course and how lessons learned may be applied more widely   | 15 healthcare professionals attended 3 day course. Completed standard University evaluation with Likert responses and some open-ended questions. Field notes from course instructor.   | Likert responses positive with scores of 4 and above (5 = more satisfactory). Positive quotes from open ended questions. Course instructor identified initial resistance to use of social media & detailed social media platforms that the group 'preferred'.  | Small group.   | Unsubstantiated recommendations? Social media should be promoted, participants less willing to engage in 'overt' networking platforms (FB, Twitter). No recommendations for further research.                                 | No detail of why or how participants chose to enrol on course. No note of ethics approval? Instructors notes reliable or unbiased? Limited discussion of results and more of a descriptive account? |
| Mather, C., Cummings, E. and Nichols, L. (2016)   | Australian cross-sectional study of first and final year undergraduate nurses. It was part of a larger multi-site survey.   | To explore first and final year students use of social media to understand how it is utilised by them during their course.  | Descriptive statistical analysis of in total 103 females and 23 males. Online survey between July and November 2013. Asked a series of questions.  | Online media was the preferred source of primary information for 43% of females and 26% of males. 87% of students used Facebook and 12% used Twitter. Only 11% of final year students used LinkedIn to engage with employers. No significant difference found in the use of social media between first and final year students.                              | Students self-reported therefore may have not been completely factual.   | Research on the impact of social media etiquette once it is incorporated in to the curriculum. Study to capture use of social media in healthcare environments to identify emerging trends and adapt student nurse education. | Perhaps it would have been more useful to follow same students and determine whether any changes in social media use in final year?   |
| Jain, A., Petty, E.M., Jaber, R.M., Tackett, S., Purkiss, J., Fitzgerald, J. and White, C. (2014) | Study at University of Michigan using an online survey to measure medical students, faculty & public perceptions of appropriateness of Facebook posts.  | To ascertain what medical students, doctors and the public felt was unprofessional for medical students, as future doctors to post on Facebook.   | Winter 2009 online survey emailed out, members of the public were university employees. Data collected via SurveyGizmo platform. Combination of Likert responses and open-ended questions. Used 29 fake Facebook posts showing a variety of topics: kissing, inappropriate comments about patients & drunken activity. 1413 respondents' data reviewed - using a variety of statistical tools including chi-squared tests. | Medical students were less likely to find some posts inappropriate compared to doctors and the public. All three groups rated derogatory or private info about patients, followed by socio-economic groups; marijuana use as least appropriate. Same sex couples were perceived by the public to be significantly more inappropriate than the student group. | Reported limitations: single study; not enough screenshots to indicate for example same sex couples from different ethnicities, age groups; not able to fully interpret all variables e.g. individuals prejudices or biases or religious beliefs? Did not tell participants that the profiles were fake but did gain ethics approval for this. | Additional studies to evaluate the use of privacy settings as 89% of respondents reported using them completely public.   | This study only explored the assumption that profiles were completely public and did not have some level of privacy filters.  |
| Osman, A., Wardle, A. and Caesar, R. (2012)   | UK study from 2012, cross-sectional from medical students, junior doctors and senior doctors' views of professionalism when using Facebook. A comparable study of the different groups' views.    | To establish & compare the extent of Facebook use & privacy options in each group. Establish & compare the nature of material made public. Assess the degree of awareness of specific guidance on online privacy & professionalism. | Cross sectional survey using questionnaire - categorical scale strongly agree to strongly disagree. 42 students, 20 FYDs and 6 SSGs. Statistical analysis using Kruskal-Willis and GraphPad Prism.   | Privacy: majority of students & FYDs used real name. 93% of students activate privacy settings, 50% for FYDs & 67% for SSGs. Inappropriate posts: 45% of students, 60% of FYDs & 67% of SSGs believe there are compromising photos of them on FB. Other than a p analysis know other statistical data is presented.  | Small sample size. Reliant on 'self-reporting'. Strengths reported as comparable study between students and doctors.   | Study over time. Study to assess the impact of new guidelines introduced by the BMA. Comparable study looking at international & sociocultural differences.   |   |

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Table 3 (continued)

| Authors  | Study  | Aim   | Methods   | Findings   | Limitations  | Recommendations  | My observations   |
|--|--|---|---|--|--|--|---|
| Maloney, S., Moss, A. and Ilic, D. (2014)  | An Australian mixed method study from 2012 - using physiotherapy students to explore their perspectives of the use of social media and its benefits as a learning tool.                              | To identify the behaviours of entry-level health professionals regarding social media. To examine student perspectives on social medias application as teaching tool. | Online questionnaire of 142 students. Created own questionnaire and piloted it with former student. Combination of Likert scale questions, multiple choice and open ended questions. Qualitative & quantitative data obtained.  | Brief summary of quantitative findings in relation to demographics, levels of social media use, types of sites used. 4 themes identified with some good quotes: peer collaboration, need for separation between personal and professional realms.  | Specificity of population. No demographic details for non-respondents.   | None given   |   |
| Chretien, K.C., Goldman, E.F., Beckman, L. and Kind, T. (2010)   | A US qualitative study carried out in Nov 2009. Medical students' perceptions on the risks of social media.  | To inform institutional policies and curricula by exploring medical students perspectives of online posting.  | 6 focus groups split into pre-clinical & clinical medical students - 64 students in total. Open-ended questions derived from existing literature using 3 different group moderators. Results independently read & coded.  | 4 main themes identified: general web habits, online professionalism, concerns and guidelines. No definitive agreement on what constitutes 'professional use' other than if it was in breach of professional body. Students felt reluctant to have too much policing of their online use.  | Single study. Focus group dynamics may have meant that some students felt uncomfortable expressing a view contrary to popular opinion. | Exploration of how students' professional identity is impacted by the blurring of professional and personal identities online. |   |
| Hemming, M.A., Hawken, S., MacDonald, J., McKimm, J., Brown, M., Moriarty, H., Gasquoin, S., Chan, K., Hilder, J. and Wilkinson, T. (2017) | Multinational study between 2013 & 2014. Purpose to establish a learning need assessment of medic students, nursing students & paramedic students in relation to maintaining a safe online presence. | To establish the most effective health professional students to enable them to maintain a professionally safe online presence.  | Use of focus groups and interviews. Some clips of 'unprofessional' behaviour were used to stimulate discussion in focus groups. All interviews used a semi-structured approach. A content analysis was carried out followed by a thematic analysis.   | Data obtained from 57 participants. 3 themes emerged: (1) Negotiating risks (2) Distancing (3) Risks. Students used social media to keep up with friends and find info relating to uni. They wanted a lecture and group work relating to safe online use with some practical 'scenarios'. The majority of students found the 'unprofessional' YouTube clips 'harmless' initially but changed opinion when this was explored further in focus groups. | Reported limitation of small sample size   | Studies with larger numbers of participants at different stages of training and career.  | On review I spotted that the data from Australia & NZ was coded using HYPERSEARCH software but not in Wales? Does this mean that the findings are comparable?   |
| Marmocha, S., Marmocha, M., Cleveland, R., Lambie, C., Limberg, C.Y. and Wnutk, J. (2017)  | US study (doesn't state when carried out) at 1 University. Wants to explore whether a 30 minute peer-taught session improves cyber professionalism.  | To assess the effects of a peer-facilitated social media education session.   | 72 new student nurses were given a pre-test questionnaire to determine understanding of unprofessional online use - combination of Likert questions and open-ended questions where they could list examples of unprofessional usage. Followed up by a post-test to determine knowledge and also to list examples of | Majority of students had good understanding of what unprofessional online use was prior to the teaching. There was a slight improvement in all questions post teaching. The examples of unprofessional use pre-test were in relation to personal repercussions. Post-test there were more in relation to breach of professional standards. The study   | Reported limitation of not comparing peer reviewed learning to traditional teaching already?   | Larger study. Research on whether peer-reviewed learning is useful.  | The study does not appear to attempt to research students' thoughts on being taught by other students. Does the research have any value? All the students already seemed to have a good understanding of cyber-professionalism? |

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Table 3 (continued)

| Authors   | Study  | Aim  | Methods   | Findings   | Limitations   | Recommendations   | My observations  |
|---|--|--|---|--|---|---|--|
| Nyangeni, T., du Rand, S. and van Rooyen, D. (2015) | South African study published in 2015 but does not state when research was carried out. Purpose was to explore students' perceptions of responsible use of social media.               | To explore and describe the perceptions of nursing students regarding responsible use of social media. | unprofessional online usage.<br>Qualitative, explorative and contextual design where 12 students were interviewed. Researcher determined which students to invite - by typical attributes or characteristics of population. This must create bias?!!  | reports completing a content analysis of these but this is not presented!<br>2 main themes: (1) There is no awareness of media - some very disturbing examples of posting pictures of patients online without any consent. (2) There are blurred boundaries between private and public roles and a lack of accountability.   | Reported limitations: small sample size - although author stated they have reached data saturation! Other reported limitation is that this is self-reported and no evidence provided of actual social media posts. My concern with this research is that some of the posts by students are grossly unprofessional and should have been reported to the appropriate professional regulatory body. If the students were so willing to discuss this with an academic - it makes me think that this type of practice is common place in | To disseminate findings to healthcare organisations to allow them to develop social media usage policies. |  |
| Stephens, T.M. and Gunther, M.E. (2016)             | US study at 2 universities, which hoped to explore the effectiveness of Twitter as an educational intervention. Published in 2016 but does not identify when research was carried out. | To explore the effectiveness of Twitter as an intervention delivery method for student nurses.         | 70 participants with 35 each randomly assigned to control and experimental groups. Experimental group 4 educational tweets each week for 6 weeks - topic related to 'finding your resilience'. Some tweets requested a response or participants to reflect. Control group had nursing trivia or basic nursing knowledge tweets - they were told they could choose not to respond. | Follow-up email online survey - poor response rate with only 8 from experimental group and 15 from the control group responding. It was suggested that this was due to the survey being sent out at the end of semester immediately prior to winter break - although this is unsubstantiated. Both groups were asked to consider whether the found the Twitter messages helpful and to explain 'why' or 'why not'. Positive response from 87.5% of experimental group and 80% of control group. Control group found basic nursing knowledge helpful as it was like revision. Experimental group found it helped them when they felt stressed to reflect on why this was and what would help. | Small group and poor response rate. Only nine participants actually engaged in Twitter dialogue and no interactions amongst group. The authors also acknowledge that there was no way to know whether participants had even read tweets.  | None given  | I also wonder whether students from control & experiment group talked to each other? Some participants were experienced Twitter users whilst others were new to the site - was this an influencing factor? |

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Table 3 (continued)

| Authors  | Study   | Aim  | Methods   | Findings   | Limitations  | Recommendations  | My observations |
|--|---|--|---|--|--|--|-----------------|
| Ferguson, C., DiGiacomo, M., Saliba, B., Green, J., Moorley, C., Wyllie, A. and Jackson, D. (2016) | Australian study using focus groups to determine whether social media eased the transition into university. Carried out in October 2015.                            | To explore first year nursing student experiences with social media in supporting student transition and engagement in higher education. | 10 first year students invited to attend 3 focus groups (5 male & 5 female). Snowball sampling. Open ended questions and probes to determine frequency, duration, type of use, content of material, use of private online groups, applications and instant chat features.   | 3 key themes: (1) facilitating familiar & collaboration at a safe distance (2) promoting independent learning by facilitating access to resources (3) mitigating hazards of social media. The overall findings were positive and most students found Facebook in particular a helpful way to engage with other students and find information. International students did seem less favourable and one said they were 'forced' to create a Facebook page. There were also some comments that students vented frustrations in large group forums of up to 200 students.  | Small sample size. Students highlighted positives but likely to be fearful of any unprofessional disclosures for fear of repercussions. Unexpected level of male student participation which does not reflect the workforce - main researcher was male and taught students - was this an influencing factor? | The differences between home students and international students' usage. Research on the differences and barriers between traditional learning platforms like Blackboard and social platforms.   |                 |
| Bamable, A., Cunning, G. and Parcon, M. (2018)   | Canadian study not yet published - does not identify the date research was carried out. Study looks at nursing students perceptions on professional use of Facebook | To examine nursing students perceptions of confidentiality, accountability and e-professionalism in relation to Facebook.                | A descriptive study of 97 students using an online survey using a survey adapted from research involving pharmacy students - Cain Survey. Set of statements on e-professionalism, accountability and confidentiality used a scale similar to Likert Scale. Completed comparative analysis with 2 groups - Group(1) 1st and 2nd year students; Group(2) 3rd and 4th year students. | 96.9% of students had a Facebook account. All students were aware that posting any patient info was a breach of confidentiality, although 34% students reported knowing of a student who had done this. 97% of students were aware of Facebook privacy settings. The more senior students felt more strongly that future employers should not review FB. The older students also thought more strongly that posts may affect people's opinions of them as future nursing professionals. The junior students had received some training on safe use of social media and they were more undecided as to whether they would want patients looking at their postings - there is an assumption that this is due to the training??? Not substantiated and it does not appear to have | Self-reported data. Not generalizable as only from one university in Newfoundland.   | No recommendations for further research. It does recommend strategies to integrate the appropriate use of FB into nursing curricula. It also suggests students signing a code of conduct in relation to professional behaviour online. |                 |

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Table 3 (continued)

| Authors  | Study   | Aim  | Methods  | Findings   | Limitations  | Recommendations  | My observations   |
|--|---|--|--|--|--|--|---|
| Giordano, C. and Giordano C. (2011)                | A US carried out between March 2010 and May 2010 that surveyed a large variety of healthcare students. The study does not identify if all students were from one university?                                    | To determine if health professional students use the Internet as their primary source of information, evaluate how active they are on sites such as FB and to evaluate how they responded to adverts.    | An online survey initially sent to 644 first year students and then sent to 413 graduating students via survey monkey. Each group was asked a different set of questions. Why different questions - this isn't really comparable?  | 56% of students used online media as their primary source of information. Facebook was used by 77% of respondents, with the majority not using Twitter. 64% of respondents make decisions based on online media ads.   | No reported limitations.   | Future studies on how faculty members use social media and how it can be integrated into the classroom.  | There was no real comparison between the 2 groups of students. Their evidence on whether students respond to online ads is very weak as they only asked the question 'have you ever clicked on a FB ad'. Very few students reported that they had but this contradicts the earlier reported that 64% make decisions on ads that they see on social media? |
| Marmocha, S., Marmocha, M.R. and Pillow, T. (2015) | A US study which does not state date of research but was published in 2015. Sent to Deans of schools of nursing to identify reported unprofessional online behaviour.   | To assess the presence, intensity and content of cyberprofessionalism incidents amongst student nurses and to gain general information about institutional responses to such issues.                     | Mixed method study online survey based on the survey by Chretien sent to 1107 deans. Quantitative data looked at percentage who were aware of unprofessional behaviour and categorised types of incidents using SPSS. Qualitative used open ended questions to look at specific details of reported incidents. | 26% response rate from 293 schools. 77% of respondents were aware of incidents in their own schools; 46% were aware of incidents in other schools. The most frequent incident was negative comments about patients, peers, work environment or nursing profession (57%). Deans reported a high level of concern with such behaviours. Most incidents were reported by other students with the majority of students being provided with a warning. The qualitative findings found 6 themes: (1) Affiliation with school or clinical site (2) Threats to patient confidentiality (3) Derogatory or unprofessional language (4) Cyberbullying (5) Depiction of intoxication or substance use (6) Sexually suggestive content. | Low response rate and sample bias (those Deans who were aware may have been more likely to complete survey?). The dynamic and ever evolving nature of social media may limit the mid to long term validity of such research. | No recommendations for further research. It does suggest more education for faculty and students on the ethical and professional standards that must be maintained online. Also how to address and report cyberbullying. |   |
| Copeland, G. and Knudson, T.K. (2016)              | A US study published in 2016 but does not identify when research was done. Looks at unethical behaviour of student nurses' in relation to extent of social media usage, academic cohort and age. Carried out to | To explore the differences in student nurses' unethical behaviour by age (millennial vs non-millennial) and clinical cohort, the relationship of unethical behaviour to the utilisation of social media. | Mixed method. Difficult to interpret some of the quantitative data findings. 55 student nurses were invited to complete an anonymous survey and this was followed up by 8 faculty led interviews. 49 students in total fully participated.   | Millennials reported almost 3 times as much unethical behaviour than non-millennials. Semester 2 students were the best behaved, with semester 1 students being the most unethical. There did not appear to be any correlation in time spent on  | No reported limitations.   | No recommendations made.   | I feel that there is no detail on what the researchers quantified as unethical so difficult to confirm findings. No information on findings from 8 interviews. The finding that older students are more ethical cannot be substantiated - were there  |

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Table 3 (continued)

| Authors  | Study   | Aim  | Methods   | Findings  | Limitations  | Recommendations  | My observations  |
|--|---|--|---|---|--|--|--|
|  | explore findings from previous dissertation.  |  |   | social media and unethical behaviour. Semester 2 students were found to be the most ethical and they were found on average to be the oldest group with average year of birth being 1976.  |  |  | any influencing factors for the semester 2 students?   |
| Westrick, S.J. (2016)  | A review of recent misconduct cases involving student nurses and some legal cases in the USA.   | To discuss the promotion of professionalism in nursing students in relation to Nursing Code of Ethics and statutory laws.  | Review of recent published cases.   | Nursing schools need to have explicit policies relating to the use and misuse of social media. Suggests have students sign a 'protective document' agreeing to complete patient confidentiality.  | Was not research merely a review of cases.                           | None.  |  |
| De Gagne, J.C., Choi, M., Ledbetter, L., Kang, H.S. and Clark, C.M. (2016) | A systematic review carried out in the US to explore the prevalence and consequences of cyberbullying. Last lit search carried out June 2015. | To synthesize the literature on cyber civility in health profession students by answering 3 questions. (1)To what extent do students and faculty experience cyber incivility (2)What are the direct and indirect effects and actions taken after cyber incivility (3) What are the key themes that guide strategies to address the phenomena of cyber incivility in education? | Systematic literature review using 2 methods. (1) Matrix method. (2) Gough's 'weight of evidence'.  | Of the 11 studies reviewed, 9 identified cyber incivility via social media. 1 study reported 60% of medical students were involved in study of nursing students found frequent unprofessional comments relating to peers, work and their profession. 3 studies also reported cyber incivility on the Online learning environment (OLE).   | Did not review the grey literature.                                  | (1) Include issues relating to cyber incivility in the curriculum (2)Raise students awareness of these issues (3) Develop policies. Future studies to determine the effectiveness of an academic curriculum that fosters cyber civility and the positive impact of implementing policies and guidelines. |  |
| Garner, J. and O'Sullivan, H. (2010)                                       | A UK study exploring the professional behaviours of medical students using Facebook. Carried out at Lancaster University in May–June 2009.    | To investigate how medical students use Facebook, and to identify unprofessional behaviour displayed online.   | 180 students emailed survey which was voluntary and anonymous. 56 students completed the survey (31% response rate). Series of questions which stipulate Yes or No response and opportunity for some free text. | 96% of respondents had a Facebook account with 90% saying they used privacy settings. 19% admitted accepting friend requests from people they did not know well. 52% admitted there was photo of them on Facebook that was embarrassing. 54% reported unprofessional behaviour from colleagues. 30% think what happens on Facebook is separate from what happens in medical school. | No reported limitations other than small sample size.                | Suggests using the policy developed by Farman which recommends that any material relating to role as a medical student or identifies the institution showed be reviewed by faculty staff before being posted.  | Lack of information on methods used - brief mention of SPSS analysis but no mention of any statistical validity. No mention of how free text was analysed. |
| Benetoli, A., Chen, T.F. and Aslani, P. (2015)                             | A systematic review looking at social media usage in pharmacists including students. Carried out in Australia - published 2015.               | To investigate the use of social media in professional pharmacy practice and pharmacy education, and includes an evaluation of the research designs utilised.  | Broad search of peer-reviewed studies restricted to 2000-June 2013.   | 24 studies met the inclusion criteria with 14 of the studies involving pharmacy students. Between 76 and 100% reported having a Facebook account. 34% had a Twitter account. 4  | Small number of studies found and they were not directly comparable. | Research into the effects of different education systems on social media use. Majority of studies have been descriptive - opportunity to attempt more rigorous comparative or controlled design studies.   |  |

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Table 3 (continued)

| Authors   | Study   | Aim   | Methods  | Findings  | Limitations   | Recommendations   | My observations |
|---|---|---|--|---|---|---|-----------------|
| Booth, R.G. (2015)  | A content analysis of content of tweets by nursing students carried out in the US in October 2011                                       | To examine how nursing students use Twitter to discuss situations or issues related to their experiences in a nursing programme.        | Use search engine <a href="http://Socialmention.com">Socialmention.com</a> to identify tweets containing the words <i>nurse</i> or <i>nursing</i> in conjunction with class, clinical or course. Captured over 2 time periods in October 2011. | studies looked at e-professionalism and found that the majority of students felt pharmacy students should be held to higher standards when using social media that non-professional students. 69% of students considered that their professional reputation would be adversely affected if members of the public saw their online posts. Pharmacy students want more training and guidelines on social media. Difference in perceptions between first and final year students reported. | Small pilot study with results captured over short time period. The search terms used may not have captured all relevant tweets.  | Research in to how to infuse social media technology with nurse education.                  |                 |
| Sinclair, W., McLoughlin, M. and Warne, T. (2015)   | A review of a Twitter chat carried out in the UK in June 2013 led by @WeNurses. To discuss students experiences of clinical placements. | A case study on the student experience of clinical placements.  | A data analysis of a planned 1 h Twitter chat on clinical placement experience.  | Lots of themes relating to clinical placements but also found it generated a global discussion with mentors and other nurses. A candid 'real-time' discussion with thoughts and solutions offered.  |   | Consideration of how academics engage with student nurses via social media.                 |                 |
| Usher, K., Woods, C., Casella, E., Glass, N., Wilson, R., Mayner, L., Jackson, D., Duffy, E., Mather, C., Cummings, E. and Irwin, P. (2014) | A cross-sectional study carried out in Australia in 2013 of health profession students exploring their social media use.                | To determine first and final year health profession students' use of social media and their media preferences for sourcing information. | An online survey developed by <a href="#">Giordano and Giordano (2011)</a> was completed by 637 first years and 451 final year students between July 2013 & November 2013.   | 52% of first years use online media as primary source of information compared to 50% of final year students. Facebook was used by 93% if first years and 91% of final years. Some break down of usage amongst different age groups with lowest numbers in those aged 45 and over. 86% of first years do not use Twitter and 84% of final year students don't use it either. Only 11% of   | Students self-reported therefore may have not been completely factual. Self-report bias is possible as students interested in social media may have been more likely to complete the questionnaire. | More research on the use of LinkedIn during transition from student to health professional. |                 |

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Table 3 (continued)

| Authors   | Study  | Aim   | Methods  | Findings  | Limitations  | Recommendations  | My observations  |
|---|--|---|--|---|--|--|--|
| Price, A.M., Devis, K., LeMoine, G., Crouch, S., South, N. and Hossain, R. (2018) | A cross-sectional study carried out in the UK. First year students from all fields' experiences of using Twitter before and after a module, which used social media. | To identify students experience of the use of social media through nurse education. To evaluate the benefits and limitations of the use of social media in nurse education. | Online self-reporting questionnaire using a combination of Likert scales and open questions. Data was collected from May 2016 to June 2016. 121 responses (32% of sample). | final year students used LinkedIn. Majority of students used social media prior to commencing their nursing studies. When asked if they had been taught how to use Twitter (optional session) 52.1% had. 57.8% understood the purpose of Twitter in the module. 38% of students felt they would continue to use Twitter but 38.8% said No. 47.1% of students saw social media as being very beneficial in increasing awareness of nursing issues. | Authors suggest carrying out a pre and post survey. Again like similar studies this is self-reported which may affect the results. | Accessing student social media data to determine engagement. Research to consider different learning styles and assessment strategies. | It would have been good to see more analysis of the qualitative data. There is a brief discussion of themes and a few small excerpts but not enough in my opinion. |

platforms other than Facebook there appears to be more benefits reported; with Twitter being identified as an effective communication tool, which permits students to engage in a safe environment (Sinclair et al., 2015; Stephens and Gunther, 2016). Social media is undoubtedly here to stay and the focus needs to shift from its dangers to its benefits. A good way forward would be to have an international campaign on using social media safely for health care professionals this can help to remove some of the doubts and pitfalls that could negatively influence social media usage.

Our review found that age and experience were influencing factors when using social media.

Research into the benefits and risks of social media use amongst student nurses is gaining momentum but the experiences and usage of social media can have other influencing factors for example demographics. In particular, the age of students has been explored in some research studies (Osman et al., 2012; Usher et al., 2014; Benetoli et al., 2015; Copeland and Knudson, 2016; Mather et al., 2016). A mixed method survey of first, second, third and fourth semester nursing students by Copeland and Knudson (2016) initially discovered that second semester students were the least likely to display unethical behaviours, this seemed to contradict the rest of their findings and the general assumptions younger people are generally the most irresponsible online users. On further investigation, it was discovered that this cohort of students were on average older than any other which the study concludes is supporting evidence that age is a reliable variable when identifying unethical behaviour. This assumption is questionable as there may have been other influencing factors, perhaps in relation to some teaching on social media use or as this was self-reported data the older students may have preferred not to identify unprofessional online behaviours.

Osman et al. (2012) surveyed a cross-section of students, foundation doctors and senior doctors identifying the average age of each group with the student group being the youngest. Their findings in relation to safe social media use were not clear-cut but they did find the students were more likely to have installed privacy settings on Facebook than the other groups; however, they were the most prolific users of such sites. Health Education England commissioned a report exploring the generational differences and how this will affect the future NHS workforce. The report identified Generation Z born between 1995 and 2010 as 'digital natives' and digital connectivity as 'important as breathing' (Jones et al., 2015).

#### 4. Studies not involving Facebook

The majority of research discussed so far involved the use of Facebook with limited studies investigating other social media platforms; this is likely due to the prevalence of Facebook with it being the most popular site worldwide reporting 2 billion users (Fortune, 2017). Another reason may simply be that Facebook is one of the first (most accessible) social media platforms and therefore the one media the most people could use comfortably. The second most studied platform is Twitter with Booth (2015) finding 498 tweets from nursing students collected over a six day period in 2011 however the author did not state how many students the tweets were generated by. This study found that the majority of tweets were often what was identified as declarative or questioning statements. Similar to Facebook there were some that were categorised as vulgar or derogatory and appeared to be a direct consequence of an annoyance or course related stressors. Conversely Sinclair et al. (2015) discovered an unexpected positive outcome of a planned Twitter chat aimed at student nurses to discuss their experience of clinical placements. It turned into a global event with honest thoughts and solutions to the students' issues being suggested by experienced nurses. This offered 'real-time' help that would not have happened if the students had used the traditional feedback mechanisms of completing an evaluation on completion of the placement or contacting their link lecturer.

As part of a wider survey on social media use amongst student nurses Price et al. (2018) explored students' perceptions of Twitter as a learning tool. Their findings were somewhat mixed with 27.2% of respondents having little or no understanding of the purpose of Twitter in the course. This result does seem significant but does not clarify if these students attended the optional session on how to effectively use Twitter prior to attending classes. This could have increased their awareness of the benefits. There are more positive findings in relation to social media in general with 47.1% of students agreeing that social media is 'very beneficial' in identifying contemporary issues in nursing. The positive impact of social media appears to be a common finding but this study also explored some of the reasons why a small but significant group of students do not engage with social media, with 57% of participants feeling that a lack of time was a significant impeding factor and 42.1% being unclear of how to 'use social media effectively'. These statistics demonstrates the importance of providing suitable and timely training for student nurses.

## 5. Using social media safely

The previous examples of using Twitter as a professional forum highlights the benefits and power of such social media platforms but the majority of the literature still discusses the 'dangers'. There is limited research on teaching student nurses how to promote themselves safely and effectively. George (2011) describes a course on such a subject for health professionals, the course evaluations were very positive but with only fifteen staff taking part the findings are not generalizable. Marnocha et al. (2017) carried out a much larger study of 72 student nurses understanding of cyber-professionalism prior to and immediately after a peer led teaching session. It is difficult to interpret the benefits, as the majority of students appeared to have a good understanding of the topic prior to the session. It is important to note it was not discussed why the peer taught component of the learning was not measured and there is no interpretation of whether this was of any meaningful benefit.

Henning et al. (2017) undertook a more robust study to determine the educational needs of students in relation to social media. This multinational; multi-professional study involved a series of focus groups and individual interviews to explore Facebook usage and ideas for professional online conduct. It did in part confirm a preference for peer involvement, as one of the themes was to have teaching from a credible peer it could be assumed that students would prefer online teaching on social media. An unexpected theme was the students' preference for face-to-face teaching so that they could be told the rules of conduct. Most students then indicated a preference for a follow up with group work and some practical demonstrations, this is surprising at it could be assumed that social media use would imply a preference for some form of e-learning.

## 6. Conclusion

This narrative literature review found little research on the implementation of training for healthcare students to assist them in safely navigating and interacting with social media. Social media is predominately used by students to communicate with peers and to access course related information. It has the power to inform students in a collaborative environment, which promotes professionalism. The majority of studies reported that students are aware of what constitutes professional online behaviour but this has not stopped cases of inappropriate social media postings being investigated by universities and regulatory bodies. This apparent contradiction may be in part due to the current body of research relying on self-reporting of any online misdemeanours. It is imperative to understand that personal and

professional online personas impact on student nurses, therefore appropriate support and strategies should be in place to support student nurses.

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## Conflict of interest

None.

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