



# A mixed study systematic review of social media in nursing and midwifery education: Protocol

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## Abstract

**Aim:** To synthesize evidence on the use of social media in nursing and midwifery education.

**Background:** Social media is one type of online platform that is being explored to determine if there is value in using interactive, digital communication tools to support how nurses and midwives learn in a variety of settings.

**Design:** A sequential explanatory synthesis approach will be used for this mixed study review.

**Method:** Five bibliographic databases; PubMed, MEDLINE, CINAHL, Scopus, and ERIC will be searched using a combination of keywords relevant to social networking and social media, nursing and midwifery, and education. The search will not be limited by year of publication. Titles, abstracts, and full papers will be screened by two independent reviewers against inclusion and exclusion criteria, with any disagreements resolved via a third reviewer. Selected studies will undergo quality assessment and data extraction. Data synthesis will occur in three sequential phases, with quantitative and qualitative data analysed separately and then integrated where possible to provide a conceptual framework illustrating learning via social media. Funding for this review was confirmed in May 2016 by Sigma Theta Tau International and the National League for Nursing.

**Discussion:** The mixed study systematic review will produce the first rigorous synthesis on the use of social media in nursing and midwifery education and will have important implications for educators as well as students. It will also highlight knowledge gaps and make recommendations on the use of this novel technology in higher and continuing education.

## KEYWORDS

assessment, education, learning, midwifery, nursing, protocol, social media, social networking, student, teaching

## 1 | INTRODUCTION

Nursing and midwifery education has undergone dramatic changes in the last few decades with both professions transitioning from informal training approaches in clinical settings to a more formal qualification gained through baccalaureate education and supervision in clinical practice (American Association of Colleges of Nursing 1999; Bourgeault, 2000; Zabalegui et al., 2006). A subsequent evolution in the nursing and midwifery professions is the rise of information and communication technology (ICT) in education. The growing adoption of ICT has generated new opportunities for educators towards how students are taught and assessed. eLearning has become commonplace as a means to convey educational material and activities, assist students in accessing additional resources and enabling them to undergo elements of assessment via digital means (Moule, Ward, & Lockyer, 2010). Desktop computers and more recently mobile devices, such as smartphones and tablet computers, are being used to facilitate elements of eLearning and enable students access a variety of educational information to support their learning needs in a range of academic, clinical, and community environments (Andrews & Cole, 2015; O'Connor & Andrews, 2015). However, technology used in isolation does not guarantee learning and a pedagogical approach is needed to support the electronic mode of education delivery to ensure students achieve successful outcomes (Button, Harrington, & Belan, 2014).

### 1.1 | Background

Social networking applications are one type of popular online platform that have begun to gain popularity amongst nurses and midwives in the last few years (Lau, 2011; Levati, 2014). Boyd and Ellison define social network sites (SNSs) as any web-based application that enables people to create virtual profiles within a "bounded system" as a means to connect and communicate with users on this platform, which is freely available for others to view and interact with (Boyd & Ellison, 2007, p. 211). Current examples of popular SNSs include applications like Facebook, Twitter, and YouTube. The term "social media" has evolved during this period, as a neologism used to refer to various aspects related to the creation, sharing, and exchange of user-generated content, such as text, images, audio, and video, on a variety of online platforms, including SNSs. Subsequently, the term social media has come to refer to both a range of Internet technologies (e.g. Facebook, Twitter) and also the culture of communicating and sharing afforded by these sorts of online tools (Fraser, Booth, Tietze, & McBride, 2015).

SNSs are an important type of social media, as they allow users to share and interact with others in seamless and rapid fashions. For instance, most SNSs allow people to generate distinct user profiles, whereby users can create a range of identification markers (e.g. name, location), avatar images, and other personalization components. SNSs also provide users the ability to generate interactive content that can be shared, manipulated, and exchanged by other users. Images, videos, comments, and other types of media can be

### Why this study or review is needed?

- Numerous technology enhanced learning platforms exist but social media has unique properties that set it apart from other eLearning applications.
- Nursing and midwifery education programs are beginning to use social media in various ways to engage students and deliver teaching and assessment.
- This mixed study systematic review will synthesize the literature on how valuable social media is for learning among nursing and midwifery students and the perspectives of key stakeholders towards this new pedagogical approach.

created and shared in SNSs, generating (at times) an almost real-time, digital environment where communication can occur (Fuchs, 2013). Given the high level of engagement potential offered by most SNSs, they are commonly more dynamic and interactive than other types of social media technology. For instance, other online platforms such as blogs, wikis, podcasts, and webcasts can also be considered a form of social media. Regardless, the level of dynamic interaction and real-time engagement afforded by these types of social media are highly attenuated in comparison to SNSs. Given the broad and sweeping definition of social media, for the purposes of this review we will use the term social media to refer to an online, virtual network in a publicly accessible environment. Specifically, social media that fit the SNS complexion will be targeted for exploration.

To date, numerous descriptive articles have been published outlining a large array of social media technology and educational practices in relation to nursing and midwifery (Ashton, 2016; Clifton & Mann, 2011; Schmitt, Sims-Giddens, & Booth, 2012; Stewart, Sidebotham, & Davis, 2012), including more robust studies examining the use of social media in this literature (Booth, 2015; Kitching, Winbolt, MacPhail, & Ibrahim, 2015; Richardson, Grose, Nelmes, Parra, & Linares, 2016; Uppal, Davies, Nuttall, & Knowles, 2016). There has also been some past review efforts completed to synthesize how social media technology has been used to support mentorship activities between nursing faculty (Bassell, 2010); for health professional education in university settings (Smith & Lambert, 2014); and, in nursing education in general (Arrigoni, Alvaro, Vellone, & Vanzetta, 2016). Regardless, there is a current and sizable gap in synthesis of research exploring the efficacy, impact or value of social media in nursing and midwifery education. The synthesis efforts to date have typically adopted a sweeping, generalized definition of social media that includes all ranges of technologies, from wikis, to blogs, SNSs, podcasts, and other related online platforms (Bassell, 2010). Other reviews have limited studies relevant to nursing or midwifery (Smith & Lambert, 2014) or have applied weak methodological approaches (Arrigoni et al., 2016). Due to the uniqueness and higher level of communication fidelity afforded by SNSs, it was deemed important

to generate a mixed study systematic review exploring the use of this particular form of social media in nursing and midwifery education. By conducting this review, it is hoped that the findings will provide useful evidence for educators towards the potential of social media like SNSs in nursing and midwifery education. Given the proliferation of these types of online platforms over the last few years, a systematic review on the use of social media in nursing and midwifery education is both timely and a needed addition in the literature to support future education, practice, and policy.

## 2 | THE REVIEW

### 2.1 | Aims

The aim of this mixed study systematic review is to synthesize the relevant literature on social media in nursing and midwifery education to enhance the evidence base for using the technology in this setting. The review will highlight knowledge gaps and provide recommendations on how to improve the use of social media in nursing and midwifery education.

#### 2.1.1 | Review questions

- What is the effect of social media applications on learning among nursing and midwifery students?
- What are the perspectives of nursing and midwifery faculty, students and practice staff towards using social media for this purpose?

### 2.2 | Design

A multidisciplinary team of researchers with expertise ranging from nursing, to education, health informatics and information systems are involved in the design and conduct of the systematic review. A sequential explanatory design will be employed for this mixed study review (Pluye & Hong, 2014), with the corresponding workflow outlined in Figure 1. The Preferred Reporting for Systematic Reviews and Meta-Analysis Protocols guideline was followed when writing this protocol (Appendix S1) (Moher et al., 2015).

#### 2.2.1 | Search strategy

A scoping search will be carried out to help identify key papers and search terms relevant to the three concepts in the review i.e. social media, nursing and midwifery, and education. This preliminary search will be undertaken via several online bibliographical databases accessed through Ovid to inform the design of the search strategy. This will be piloted in PubMed and refined for each research database used. A combination of free text keywords and Medical Subject Heading (MeSH) terms will be used where appropriate. These will include some of the following terms; "nurs\*" OR "midwi\*" AND "student" OR "educat\*" AND "social media" OR "social network\*" OR "Facebook" OR "Twitter" (Table 1). As the number and type of social media

platforms being used rises continuously, we will limit the search terms to the top most frequently used English language SNS applications and those that are directly relevant to health care or education. The following five online databases; PubMed Central, MEDLINE (Ovid), CINAHL (EBSCOHost), Scopus, and ERIC will be systematically searched to identify published peer-reviewed scientific literature that is relevant to the research questions. The results will be downloaded to Mendeley, where duplicate citations will be removed and exported to Microsoft Excel to facilitate screening and data management. Additional techniques such as reference and citation tracking will be used to address the limitations of traditional database searching.

#### 2.2.2 | Eligibility criteria

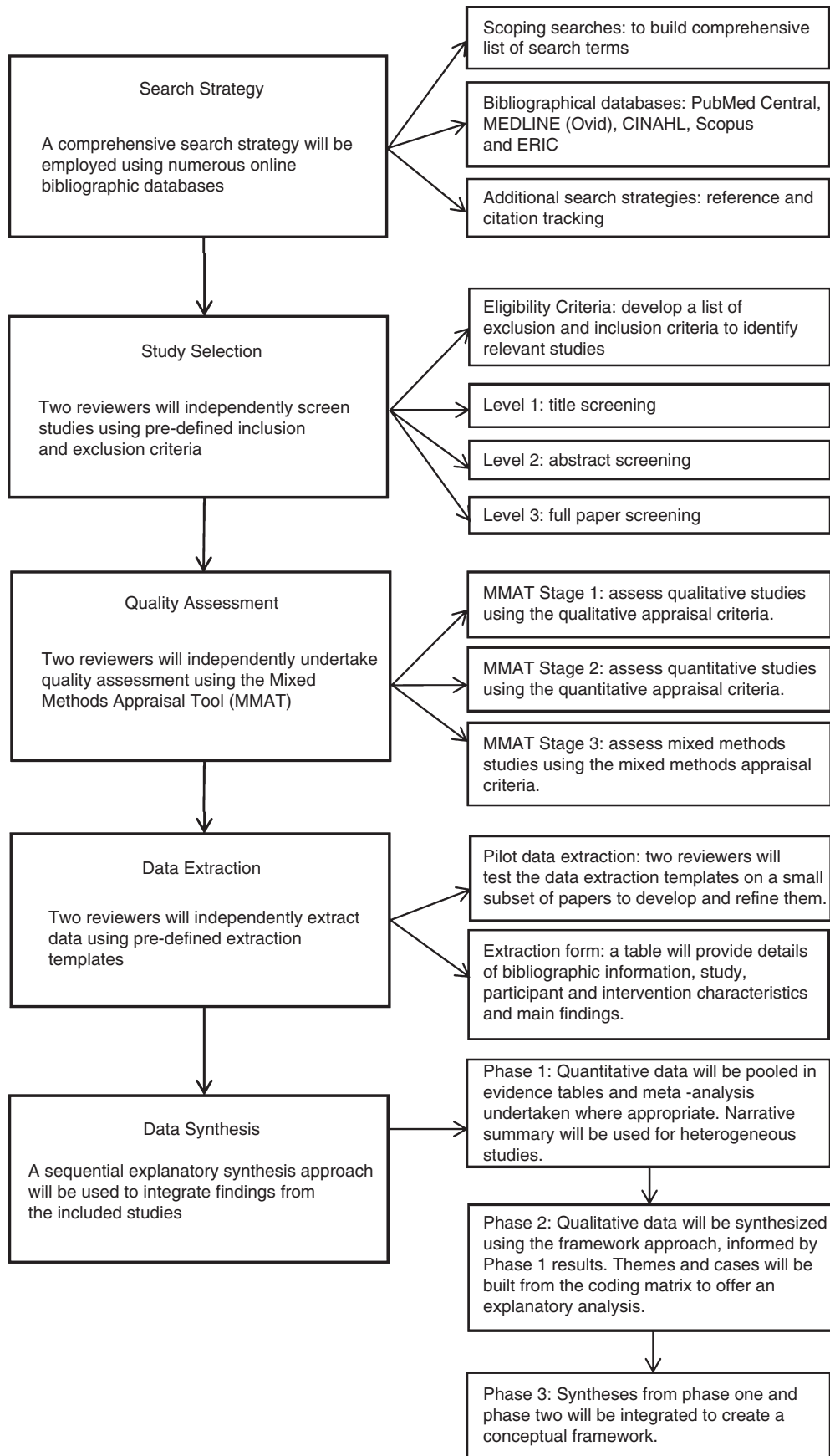
The review will adhere to the following eligibility criteria that were developed using the PICO framework i.e. population, intervention, control, outcome (Cullum, Ciliska, Haynes, & Marks, 2013). Papers will be included if they correspond with the following PICO criteria:

- Population will include nurses or midwives at any stage of education i.e. undergraduate, postgraduate, or continuing professional development. Where mixed health professional populations are used nurses or midwives must be a clearly identifiable group.
- Interventions will include social media platforms (SNS based) used as educational tools. Where blended eLearning interventions are used the social media (SNS based) component must be clearly discernible.
- No comparison will be used.
- Outcomes will include: changes in knowledge and skills related to professional practice or personal development, which could include health, nursing or other expertise and clinical, interpersonal or cognitive skills among others; Perspectives of educators, students, and practice staff towards this pedagogical approach, which could include measures of student satisfaction with the technology or their level of engagement with it or other findings related to learning via social media.

All types of study designs will be included, such as any kind of quantitative (descriptive, correlational, quasi-experimental or experimental), qualitative (case study, ethnography, grounded theory, narrative, phenomenology, or descriptive), or mixed methods design. Due to the relativeness newness of the research topic, a specific date range for publications will not be imposed. Only English language peer-reviewed publications which undertake primary research will be included, while any type of commentary, editorial or opinion piece, thesis, conference proceeding, grey literature or a purely descriptive or review article will be excluded.

#### 2.2.3 | Screening

The first phase of screening will be undertaken independently by two reviewers. During this phase, the reviewers will individually examine the article titles to assess their relevancy to the review topic. Those articles which meet the review criteria will be included



**FIGURE 1** Flow chart of proposed mixed study systematic review

**TABLE 1** Sample search strategy for PubMed

Search	Search terms will be modified for use across multiple databases
#1	Search nurs*
#2	Search midwi*
#3	#1 OR #2
#4	Search student*
#5	Search educat*
#6	Search learn*
#7	Search teach*
#8	#4 OR #5 OR #6 OR #7
#9	Search Social Networking [MeSH term]
#10	Search "social media"
#11	Search Facebook
#12	Search Twitter
#13	Search YouTube
#14	#9 OR #10 OR #11 OR #12 OR #13
#15	#3 AND #8 AND #14

in the next round of screening. After this initial round of screening, a pair of independent reviewers will examine the abstract of each remaining article. Finally, the full text of all journal articles resulting from the two previous rounds of screening will be obtained and assessed independently by two reviewers. A third member of the research team will be involved to resolve any conflicts that occur in determining the relevance of the titles, abstracts, and full text papers, so that a consensus will be reached whether to include or exclude a study. The PRISMA guidelines will be followed to create a flow diagram that will report the article selection process and reasons for exclusion from the review (Moher, Liberati, Tetzlaff, & Altman, 2009).

### 2.3 | Quality appraisal

It is recommended to critically appraise research studies in systematic reviews as a mechanism to assess whether each individual study adequately addresses the different dimensions of research quality. Furthermore, using this form of quality appraisal process can also give an indication of the contribution of the paper to the overall review (Popay, Rogers, & Williams, 1998). Due to the likelihood that the included studies will be a mixture of designs, the Mixed Methods Appraisal Tool (MMAT) will be used to undertake quality assessment (Pluye, Gagnon, Griffiths, & Johnson-Lafleur, 2009). MMAT enables the appraisal of several methodological criteria from quantitative, qualitative, and mixed methods studies, including how suitable the design is to answer the research aims, risk of bias, appropriateness of outcome measures, quality of reporting, and the generalizability of results (Souto et al., 2015). Two reviewers will independently assess the quality of the included studies and any conflicts resolved through group discussion. If necessary an independent third reviewer will be contacted to settle any unresolved disagreements. No study will be excluded based on the results of the quality assessment, as

methodologically weak studies may still offer valuable insights into the use of social media in nursing and midwifery education (Barnett-Page & Thomas, 2009).

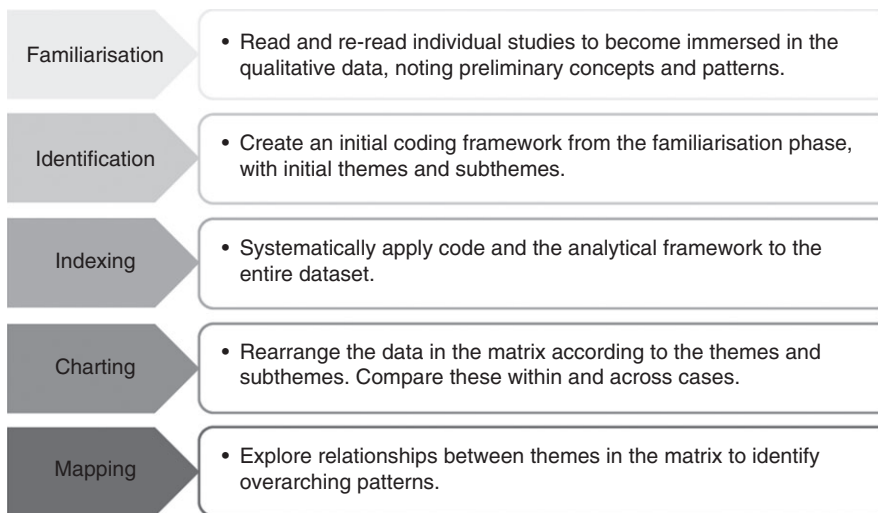
#### 2.3.1 | Data extraction

Standardized data extraction templates will be designed in Excel and will be based on the specific characteristics of the papers in the review. They will be piloted and refined using a subset of articles. Bibliographic information (authors, country, journal name, year, volume), study characteristics (theoretical framework, study design, ethics), participant characteristics (age, gender, ethnicity, type of student, or learner), intervention characteristics (type of social media application, educational setting, frequency, duration) and the main findings from the results and discussion sections related to the review questions will be extracted. Two independent reviewers will extract data based on the relevant articles identified through the screening process. A third reviewer will be involved where disagreements arise over the relevancy of the data to the review topic. Tables of the characteristics of the included studies will be presented to provide an overview of the quantitative, qualitative and mixed methods papers in the review.

#### 2.3.2 | Synthesis

Data synthesis will follow a sequential explanatory approach for mixed study reviews (Pluye & Hong, 2014). It will be conducted by the primary author and discussed at regular intervals with the review team to ensure consistency in interpretation and reporting. The first phase will present and compare findings of quantitative studies or mixed methods studies with quantitative data in a pooled evidence table, to help determine the effectiveness of social media in improving student learning. Meta-analysis will be used, where appropriate, to increase the power and precision of the reported interventions effects or examine their differences (Egger, Davey-Smith, & Altman, 2001). However, it is anticipated that there will be significant variability in terms of the characteristics of students and the types of social media applications, educational settings, and outcomes used. For studies that are not appropriate for statistical analysis a narrative summary will be undertaken to explore the relationship and findings both within and between the studies to demonstrate how social media can affect student learning (Centre for Reviews and Dissemination, 2008; Mays, Pope, & Popay, 2005).

The second phase of synthesis will apply the framework approach to combine the qualitative results from both qualitative and mixed method studies (Ritchie & Spencer, 1994). The narrative summary from phase one will be used to form the initial coding framework that will be applied to the dataset. The analytic process outlined in Figure 2 will be followed to code and categorize data into a comprehensive matrix of cases and themes, exploring the perspectives of different stakeholders towards using social media to aid learning. This will enable the review team to move back and forth



**FIGURE 2** Steps in the framework approach

across the data, reflecting on the analysis and interpretation and developing associations and patterns in concepts and themes, until a coherent explanatory account emerges. Finally, the results from phase one and two syntheses will be integrated to construct a conceptual framework that illustrates learning via social media. The previous analyses will be interpreted, theorized, reflected on, and reviewed to organize the results into a meaningful synthesis that details the aspects of social media that affect student learning.

## 2.4 | Ethical considerations

There will be no ethical considerations as this review will consist of secondary analysis of published evidence.

## 2.5 | Validity and reliability and rigor

This study will be carried out following international best practice guidelines for conducting mixed study reviews (Pluye & Hong, 2014). Both the PRISMA guidelines (Moher et al., 2009) and the Enhancing Transparency in Reporting the Synthesis of Qualitative Research (ENTREQ) statement (Tong, Flemming, McInnes, Oliver, & Craig, 2012) will be followed when reporting the results of the mixed study systematic review.

## 3 | DISCUSSION

Although systematic reviews on eLearning in nursing and health professional education have been conducted (Childs, Blenkinsopp, Hall, & Walton, 2005; Lahti, Hätönen, & Välimäki, 2014), we feel social media is a special type of online platform with unique properties and as such a review of its specific uses in nursing and midwifery education is warranted. As a relatively new technological platform, social media has significant potential in nursing and midwifery education to give students a more interactive and student led environment within which to create, share, and consume

educational content and resources for learning. It could also assist educators to assess student knowledge and skills on a range of topics. This study will be the first to systematically review the literature on social media in nursing and midwifery education. The review will be beneficial to educators as it will summarize the evidence on what types of social media platforms are currently being used and if there is a link between this technology and learning, as similar reviews have done in other educational fields (Cheston, Flickinger, & Chisolm, 2013). Finally, the review will highlight how student nurses and midwives are interacting on social media to learn and what kinds of teaching material are being developed and digested in this new pedagogical environment. Several specific gaps in evidence may be identified and areas for further research suggested.

The results of this mixed study systematic review will be widely disseminated through several channels. It will be published in a peer reviewed academic journal and the findings presented at national and international nursing and midwifery education conferences. The results of the review will also be disseminated at research and teaching seminars at each of the author's institutions in the UK, Canada, and the USA, enabling a wide reach to numerous international educator and student audiences. It is also expected that the outcomes of the review will be publicised via several social media outlets. This work will help inform a future agenda for nursing and midwifery educational research, policy, and practice.

## AUTHOR CONTRIBUTIONS

All authors have agreed on the final version and meet at least one of the following criteria [recommended by the ICMJE (<http://www.icmje.org/recommendations/>)]:

- substantial contributions to conception and design, acquisition of data or analysis and interpretation of data;
- drafting the article or revising it critically for important intellectual content.

## CONFLICT OF INTEREST

No conflict of interest has been declared by the author(s).

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## SUPPORTING INFORMATION

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