



"Have you seen what's on Facebook?" The use of social networking software by healthcare professions students.

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Title

“Have you seen what’s on Facebook?” The use of social networking software by healthcare professions students

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Competing Interest Declaration

"All authors have completed the Unified Competing Interest form at www.icmje.org/coi_disclosure.pdf (available on request from the corresponding author) and declare that (1) [initials of relevant authors] have support from [name of company] for the submitted work; (2) [initials of relevant authors] have [no or specified] relationships with [name of companies] that might have an interest in the submitted work in the previous 3 years; (3) their spouses, partners, or children have [specified] financial relationships that may be relevant to the submitted work; and (4) [initials of relevant authors] have no [or specified] non-financial interests that may be relevant to the submitted work."

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All authors are justifiably credited with authorship, according to the authorship criteria. In detail:
Jonathan White: study conception and design, analysis and interpretation of data, revising the article, final approval of the version to be published
Paul Kirwan Wallace: data collection, analysis and interpretation of data, interviewer, input to drafts of the article, final approval of the version to be published
Krista Lai: analysis and interpretation of data, input to drafts of the article, final approval of the version to be published
Jennifer Walton: analysis and interpretation of data, input to drafts of the article, final approval of the version to be published
Shelley Ross: study conception and design, analysis and interpretation of data, revising the article, final approval of the version to be published

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Ethical Approval

Ethics approval was obtained from the University of Alberta Health Research Ethics Board (ref: 22787).

Data sharing

Requests for original data should be directed to the corresponding author. Data sharing is governed by our local ethics board.

ABSTRACT (316 words)

Objective. The use of social networking software has become ubiquitous in our society. The aim of this study was to explore the attitudes and experiences of healthcare professional students using Facebook at our school, and to determine if there is a need for development of policy to assist students with utilizing this technology during their professional education.

Design. A mixed-methods approach was employed, using semi-structured interviews to identify important themes which were further explored using an online survey. A combination of descriptive statistics and thematic analysis was used to analyse the data obtained.

Setting & Participants: Students of Medicine, Nursing, Pharmacy, Speech & Language Pathology, Occupational Therapy, Physical Therapy, Dentistry, Dental Hygiene and Medical Laboratory Science at a large North American university.

Results. 14 interviews were analysed in-depth, and 682 healthcare professions students responded to the survey. 93% reported current Facebook use. Themes identified included: patterns of use and attitudes to friendship, attitudes to online privacy, breaches of professional behaviour on Facebook, and attitudes to guidelines relating to Facebook use. A majority considered posting of the following material unprofessional: use of alcohol and drugs, crime, obscenity, patient/client information, sexual content and nudity and criticism of others. 44% reported seeing such material posted by a colleague, and 27% reported posting such material themselves. A majority

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3 of participants agreed that guidelines for Facebook use would be beneficial.
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6 **Conclusions.** This study demonstrates that the use of social networking software is
7
8 widespread amongst healthcare students at our school, and highlights the challenges
9
10 which accompany the use of this new technology. We believe that studies such as this
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12 are important in understanding the pedagogy and practices of Facebook use and in
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14 helping students navigate the dilemmas associated with becoming 21st century
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16 healthcare professionals.
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Article focus

The use of social networking software has become ubiquitous in our society. Healthcare practitioners and their students have struggled to integrate this new technology with the expectations of professional behaviour.

Key messages

- Social networking software is widespread amongst healthcare students at our school. This paper highlights the challenges which accompany the use of this new technology, including the posting of unprofessional and inappropriate material online.
- We discuss the dilemma of students wanting to share information in a mixed social network in order to remain popular, while also being wary about how material shared will make them appear.
- We suggest that guidelines for the use of social networking software may help our students deal with this dilemma more effectively.

Strengths and limitations of this study

Although this study had a relatively low response rate and is possibly subject to response bias, we believe we have shown that use of Facebook is widespread among healthcare students, and that we have identified important areas for education policymakers to focus on.

INTRODUCTION

In recent years, the use of social networking websites such as Facebook, MySpace and Twitter has become ubiquitous in our society. At the time of writing, there are over 18.5 million Facebook users in Canada alone, and over 70% of the Canadian population possesses a Facebook account [1]. Facebook use is highly prevalent among medical students: at least 60% of medical students in the US, and over 70% of medical students in the UK are active users [2].

A number of authors have written that social networking software has the potential to revolutionize healthcare by increasing interaction between providers and clients and facilitating the free flow of information relating to healthcare [3]. A recent study among primary care physicians and oncologists demonstrated that a majority of those studied used social networking software to keep abreast of new developments in their field and to share knowledge [4]. A recent series of articles has called for surgeons to embrace social media as well [5].

Other authors have called for caution in healthcare providers engaging with social networking software. The software encourages users to share the events of their lives; for individuals training to enter the health professions, such sharing may be in conflict with requirements for confidentiality and professionalism of the profession for which they are training [6]. Some have suggested that Facebook will lead to an unacceptable blurring of the professional and the personal, and make it difficult to maintain proper

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3 boundaries and professional principles [7,8]. Other authors have gone further and
4 suggested that it may be best for healthcare providers not to engage in social
5 networking online [9], or that Facebook use should be monitored or policed in some way
6 [10,11].
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15 This study grew out of a discussion within our medical school about our own students'
16 use of Facebook, based on a number of incidents in which we thought our students
17 could have used Facebook more appropriately. This led to a debate about how (or
18 indeed if) we should advise our students about using such social networking software.
19 We decided to focus on Facebook use instead of Twitter or MySpace, as this has been
20 shown to be the most widely-adopted form of social networking software at the moment
21 [2,5,12,13]. Most other studies on online social networking in healthcare education have
22 focused on medical students, but we decided to sample a larger population to obtain a
23 broad snapshot of the use of Facebook in all of our healthcare faculties at our school.
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39 The aim of this study was to explore the attitudes and experiences of healthcare
40 professional students using Facebook at our university, with the aim of determining if
41 there is a need for development of policy or guidelines to assist students with integrating
42 this new technology as they progress in their education.
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METHODS

We employed a mixed-methods approach, conducting interviews with a small number of healthcare professions students first to identify important themes related to the use of social networking software, and then developing an online survey which was administered to a larger group.

Semi-structured interviews were conducted with 14 healthcare professions students at our university about participants' current use of social networking services. Interview questions were developed by the authors after a review of the literature. Convenience sampling was used: participants were contacted through email, inviting voluntary participation in an interview. Students in nursing, medicine, dentistry, pharmacy, dental hygiene, speech and language pathology, occupational therapy and physical therapy were included in the invitation email distribution list and a single reminder email was sent. There were no specific exclusion criteria. Consent was obtained in person by the interviewer. Interviews lasted 30-45 minutes, and were designed to elicit information about participants' current use of social networking software. Interviews were audio-recorded and transcribed by a research assistant; transcripts were then analyzed to identify common themes.

Themes identified from interview data were used to construct an anonymous online survey. Items included a range of single-best-choice, Likert-scale, ranking and free response items. All items were revised by testing with health professions students

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3 before the survey was distributed. Convenience sampling was again employed, and the
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5 survey was distributed by email to students in all of the healthcare professions listed
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7 above. Participants were contacted through email, inviting voluntary participation in the
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9 survey; participants who had been interviewed were free to respond to the survey too.
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11 Descriptive statistics were used to describe responses to each question. Free-text
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13 responses were analyzed to identify common themes and representative quotations.
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15 This study reports our findings relating to students' use of Facebook, unprofessional
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17 behaviours observed online, and about the need for guidelines relating to social
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19 networking software for healthcare professionals. Ethics approval was obtained from the
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21 local Health Research Ethics Board.
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29 **RESULTS**

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31 The study took place in fall 2011. We identified the following themes at interview:
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33 patterns of Facebook use, attitudes to friendship on Facebook, attitudes to online
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35 privacy, breaches of professional behaviour on Facebook (including use of alcohol and
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37 drugs, crime, obscenity, patient/client information, sexual content and nudity, criticism of
38
39 others) and attitudes to guidelines relating to Facebook use.
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46 A total of 682 students responded to the survey, a response rate of approximately 17%
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48 (estimated total number of students: 3984). The number of students from each faculty
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50 was as follows: Medicine: 232, Nursing: 200, Pharmacy: 82, Speech & Language
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52 Pathology: 54, Occupational Therapy: 43, Physical Therapy: 24, Dentistry/Dental
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54 Hygiene 23, Medical Laboratory Science: 23. Over 75% of respondents were aged 18-
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3 25, and the gender balance was 3.2:1 (521 females: 158 males). In the following
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5 section, quotations from free-response items are presented to highlight particular
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7 themes identified, while percentages in brackets are used to indicate the proportion of
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9 respondents to the online survey who expressed agreement with a particular theme or
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11 statement observed. Additional representative quotations are presented in Table 1.
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17 93% of respondents reported having a Facebook account; 76% described checking
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19 their account at least 2 times per day, with 39% checking at least 5 times a day. When
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21 asked "who is on your friend list?", respondents indicated the following categories: other
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23 students 96%, previous work colleagues 73%, current work colleagues 44%, previous
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25 instructors 21%, current instructors 5%, previous patients/clients 2%, current
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27 patients/clients 0.3% .
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34 Respondents were asked to consider the types of material that they would consider
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36 unprofessional in principle if posted to Facebook (Table 2). 99% of respondents agreed
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38 that it would be unprofessional to post images or text which could be used to identify a
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40 patient. 40% of respondents said it was unprofessional to post anything at all relating to
41
42 a patient/client, even without identifying information.
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48 • *A girl I know openly posts "quotes of the day" from patients she works with in mental*
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50 *health. She does not say who said them, and they are funny, but since I work there*
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52 *too, the info is identifying. I think it crosses a line.*
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3 Over 80% considered posts or images relating to the following activities unprofessional:
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5 illicit drug consumption, criminal activity, overt sexual content, partial nudity and
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8 condescending or superior behaviour. At least 50% considered the following
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10 unprofessional: critical comments about a teacher, drunkenness/excessive drinking,
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12 swearing, and obscene gestures. Less than 10% objected to posts or photos depicting
13
14 drinking in moderation, and to posting current relationship status.
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20 • *Plenty of students in my class post pictures of heavy drinking, many swear or have*
21
22 *inappropriate sexual innuendo in their status updates.*
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27 44% of respondents described seeing unprofessional material which had been posted
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29 to Facebook by a colleague (153 responses). The most common specific examples
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31 given included criticism of teachers and programs (56 instances), inappropriate
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33 photographs (47 instances), depictions of drunkenness (27), posts about patients (21)
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35 and negative comments about patients (13). Other examples included parties attended
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37 (9), swearing (8), references to sex (7), inappropriate posts about work (5), negative
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39 comments about other professions (5) and consumption of illegal drugs (3). There were
40
41 also descriptions of errors, negative comments about co-workers, inappropriate
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43 behaviour in uniform, nudity, criminal activity, obscene gestures, racist and sexist
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45 comments and pictures of a cadaver (1-2 of each).
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53 • *I know a medical student who often posts complaints about her faculty and also*
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55 *personal patient information*
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6 27% of respondents admitted to posting material which, with hindsight, they now
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8 considered unprofessional (81 responses). The most common transgressions described
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10 were posting inappropriate pictures (15 instances), swearing (13), criticizing teachers
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12 and programs (9), drinking (9), posting comments open to misinterpretation (8) and
13
14 parties (5). There were 3 instances of posting sexual content, 2 posts about patients
15
16 and 1 example of expressing negative views about a patient.
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- 22 • *I've wrote personal posts before that probably shouldn't have been posted.*
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27 44% described having material posted about them which they felt made them look
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29 unprofessional (137 examples). The vast majority of these instances related to the
30
31 posting of photographs online (106); the most common areas of concern related to
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33 alcohol consumption (39) and attending parties (15); there were also examples of nudity
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35 (4), sexual material (3) and information pertaining to a relationship (1). 18% of
36
37 respondents reported that the posting of such material had made them consider
38
39 withdrawing from the use of social networking software.
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- 46 • *People have posted hilarious photos from parties and other events some of which*
47
48 *depict me as being intoxicated but once again I'm hoping that due to privacy settings*
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50 *the general public cannot see these.*
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55 As a group, respondents were ambiguous about posting material on Facebook. Some
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3 students considered it intrusive that faculty should even be enquiring about their
4 Facebook use, as they considered this too personal a topic for discussion. Others
5 expressed concern that faculty's expectations around their online activities were
6 unreasonable. Others took the view that they should be able to post what they like as
7 long as they could control who has access.
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18 • *Just because we are in a health care profession does not mean that we do not have*
19 *freedom of speech.*
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24 Students expressed the view that posting material to Facebook was associated with
25 some risk to their current position and future prospects.
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32 • *I am aware that my behaviour in all domains affects my reputation, so I am*
33 *careful about who I am seen with and what I do.*
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38 Many students described censoring themselves and removing material they had posted
39 or been tagged in previously, or requesting to have their name removed from photos
40 posted by other users.
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46 • *I went through my Facebook photos and took down the photos I had posted with*
47 *me in party pictures from my first undergrad degree. If I even looked drunk or*
48 *questionable, or if the party had a funny, (but inappropriate theme) then I took*
49 *those pictures down as well. I don't generally post a lot of comments, and none*
50 *that I regret, but a picture is still worth a thousand words.*
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6 98% of respondents described having altered the privacy settings of their Facebook
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8 account on at least one occasion; the reasons given for this included protection from
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10 strangers 99%, not trusting Facebook 62%, risk of viewing by potential employers 52%,
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12 advice from peers 30%, and advice from instructors 17%.
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18 • *I don't really understand the privacy settings, so I just made them strict, just in case.*
19
20 • *I don't post anything on Facebook that could compromise me for work in any way.*
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25 Lastly, respondents were asked about the use of guidelines relating to the use of social
26
27 networking software in health professions education. Many were unfamiliar with existing
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29 guidelines (43%); only 15% agreed that existing guidelines were adequate. A majority
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31 agreed that guidelines would be beneficial: 79% agreed that others would benefit, and
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33 62% stated they would benefit personally.
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39 • *There are certain guidelines that I think any professional or role model should follow:*
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41 *no photos of inappropriate conduct (nudity, heavy drinking, sexual content, etc),*
42
43 *patients/clients should not be added as friends or be able to view photos,*
44
45 *confidential information remains confidential.. otherwise, if people are stupid enough*
46
47 *to jeopardize their profession by posting something on facebook, they should deal*
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49 *with the consequences (losing a current or potential job, etc)*
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DISCUSSION

This study demonstrates that the use of social networking software is widespread amongst students in the healthcare professions at our university and highlights some of the dilemmas which accompany the use of this new technology.

There was widespread agreement that posting material that can identify a patient/client should be considered unprofessional, as should material relating to drugs, sex, nudity, drunkenness, crime and obscenity. A majority also considered it unprofessional to post critical comments about teachers/programs and posts which could be considered condescending. Despite these stated understandings, nearly half of the students we studied reporting seeing their colleagues posting unprofessional material on Facebook, and over a quarter reported posting such material themselves. There was a wide range of transgressions reported, including criticism of teachers/programs, posting of inappropriate photographs, drunkenness, parties and swearing.

Our findings agree with other recent papers in the field. A study by Giordano & Giordano on healthcare students found that 77% of students used Facebook, and that use was inversely correlated with age [12]. This paper also showed that the main reasons for use were to maintain personal and professional connections, and to obtain up-to-date information. Thompson *et al* examined Facebook use in US medical students and residents, and found that 47% had Facebook accounts, and that only one-third had privacy settings set sufficiently high to prevent public access. A number of accounts

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3 contained material relating to substance abuse, sexism, racism, or lack of respect to
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5 patients [14]. A similar study on New Zealand physicians found that 65% had Facebook
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7 accounts, many of which contained public information relating to alcohol consumption,
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9 sexual orientation, and religion [15]. Similar findings have also been observed in US
10
11 otolaryngology residents and British medical students [16]. In a recent study, 60% of US
12
13 medical schools reported incidents relating to the use of social networking software,
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15 including breaches of patient confidentiality, profanity relating to the school, intoxication
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17 or substance abuse and nudity and sexual relationships. The majority of schools had
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19 issued a warning to the students involved, and a small number had dismissed a student
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21 over the issue [17].
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29 Our findings on student attitudes about posting unprofessional material are also
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31 supported by a study which used focus groups to explore the issue among US medical
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33 students [18]. As in our study, students generally agreed that it was unprofessional to
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35 breach patient confidentiality online, but there was less consensus about material
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37 relating to alcohol, drugs, sex and speaking poorly of others. This study also found that
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39 students expressed ambiguity about their use of Facebook, and “viewed online activity
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41 through a lens of personal risk”, considering how what they post could be used to harm
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43 them.
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50 The types of material which our students considered problematic are congruent with
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52 other work outside healthcare describing the five main “Facebook Follies” which
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54 employers consider relevant when hiring new employees: negative attitudes to work,
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3 profanity, alcohol, drugs, and sexual activity [19]. Students also appear to be aware of
4
5 the impact of their online activities, and have identified similar areas that they do not
6
7 wish employers to see including drinking and drugs, photographs from parties,
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9 comments from friends, and comments about work [20-22].
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15 Christofides *et al* have observed that social networking software encourages people to
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17 disclose more personal information that they would otherwise do in order to remain
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19 popular within a social network, but also generates concern about information control
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21 and privacy [23]. Inappropriate pictures, especially of parties and drinking are a
22
23 common cause of concern. As they write:
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29 *(Online) identity ... is a social product created not only by what you share, but also by*
30
31 *what others share and say about you... the people who are most popular are those*
32
33 *whose identity construction is most actively participated in by others... (by) limiting*
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35 *access to personal information... the individual also... potentially reduces his or her*
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37 *popularity. [23]*
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43 We hypothesize that students are faced with a difficult dilemma: wanting to share
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45 information in a mixed personal/professional social network in order to remain popular,
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47 while also being wary about how the material they share will make them appear and
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49 who will see it. Others have also described this 'balancing act' between the need to
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51 share information and the desire to manage how one's self is presented [24]. This is a
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53 process of trial and error, and students express regret for the negative consequences of
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3 material posted previously [25]. We believe that this process is similar to other
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5 processes of conforming in healthcare education which have been described elsewhere
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7 [26].
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12 Given the concerns over the use of Facebook by healthcare professions students, it is
13
14 surprising to find that in a recent study, only 10% of US medical schools had a policy of
15
16 any kind relating to social networking, and only 5 of the 132 schools studied provided
17
18 advice on how students could avoid posting inappropriate content [27]. The American
19
20 Medical Association has recently issued a report on professionalism in the use of social
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22 media [28], and a number of other organizations have suggested guidelines for
23
24 physicians using social networking sites [29-33], but so far there is no generally-
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26 accepted policy for students of the health professions.
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34 Some have gone so far as to suggest we need to “divorce” the personal from the
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36 professional online, creating separate Facebook identities with “dual-citizenship” [34].
37
38 We believe that such concerns about Facebook use by healthcare professionals may be
39
40 excessive and that social networking software is not dangerous or something to be
41
42 feared, policed, or banned [35]. Online technologies are simply tools which are neither
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44 inherently good nor bad [36,37]; in some ways, social networking technologies act as a
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46 “mirror” which reflects all of our activities, including some activities we would rather not
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48 show to the world [38].
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3 Our study was limited in several areas. Firstly, we estimated the response rate to the
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5 online survey at about 17%. This is relatively low, although the total number of
6
7 responses is higher than most previous studies in this area. Secondly, response bias is
8
9 likely: non-users of social networking software would probably be less likely to respond
10
11 to a survey about Facebook, and would have less strong opinions about its use. Despite
12
13 these limitations, we believe we have shown that use of Facebook is widespread among
14
15 healthcare students, and that we have identified important areas for education
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17 policymakers to focus on.
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24 We believe that studies such as this are important in exploring and understanding the
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26 pedagogy and practices of Facebook use and help students navigate the dilemmas
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28 associated with becoming 21st century healthcare professionals.
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6 **Disclosures**
7

8
9 *Disclaimers*

10
11 None

12
13
14 *Previous presentations*

15
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17 published in abstract form as:
18

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20
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22 Online Professionalism? P Kirwan, J White, S Ross. *Medical Education* 2012; 46
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24 (Suppl. 1): 53
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Table 1. Representative Quotations

Patient confidentiality	<p>Disclosing confidential information about a patient to the general public is never permissible.</p> <p>One fellow student ... described the age of the patient, gender, and exactly what injuries they sustained in detail ... she did not disclose the name of this patient, but if my Grandma had an accident and was taken to this small rural hospital last night, it would not be hard to figure out that was who she was talking about. If you want to "debrief" to your friends on a one to one level about what you saw or experienced that it is fine. But putting it up as your "status" is inappropriate and not necessary. She was doing it so that all the other non-nurses on her friends list can see what a cool job she has. When people say they had, "the worst patient ever today", or when they discuss "helped deliver a baby in the front lobby of the hospital today".... I know if that had been me I would not want someone posting it all over Facebook.</p>
Activities considered unprofessional	<p>Many students post pictures of them partying on the weekend, which could generate negative opinions about the healthcare profession because it is not the behavior expected of a professional.</p>
Unprofessional material observed from others	<p>A lot of nursing students share their frustrations of the faculty on Facebook, and will tell positive stories about their time at clinical.</p> <p>My most appalling example is photos of a peer with a cadaver that were posted on Facebook.</p>
Unprofessional material posted by self	<p>I have unprofessional pictures on Facebook, and don't see any conflict with this in my professional life as a soon to be registered nurse</p> <p>The odd time this has happened has been when I've been intoxicated.</p> <p>In my first career, around 5 years ago (when FB was relatively new), I posted on a colleagues wall asking about a client. I was asking in a caring manner, but still should not have. Lesson learned. Now I do not have work colleagues on my FB nor would I write about a client.</p> <p>Something inappropriate was said in class by a professor and I joined a thread poking fun at that professor. I did remove the post when I realized what I had done</p>
Unprofessional material affecting self	<p>I'm sure a lot of the pictures of me during my undergrad could be considered unprofessional.</p>
Freedom of speech	<p>If patients and clients have the right to have their personal lives and information kept from being disclosed, then me being a health professional - I also have a personal life. One that is enjoyed and should be able to be enjoyed freely without interference or judgment.</p>

Risk	<p>Facebook is tons of fun... but a scary place! Way too much info floating around. People can make things up, or post photos of you without your consent.</p> <p>I think one has to be very careful with Facebook, and often I don't think people realize the negative affects it can have.</p> <p>Many people can misjudge a post on a social media site or take it out of context, resulting in a false negative image for the user.</p>
Control	<p>I have no control over who snaps a picture of me doing something in my personal life and posting them on Facebook.</p> <p>You have to be squeaky clean everywhere in life, or Facebook could be used to haunt you.</p> <p>A friend posted pictures of me and some of my other friends acting silly, and I was upset that she had not earlier asked for my consent or the consent of my friends who were against the pictures being posted, so i made her remove the pictures.</p> <p>There are photos of me being silly/drunk from earlier years of my life on Facebook, but I have untagged myself. There is nothing really bad because I would never let someone take a really unprofessional picture of me.</p>
Attitudes to guidelines	<p>I firmly support the idea of social media guidelines imparted by the university and/or professional licensing body.</p> <p>Some guidelines should be in place to set a standard but definitely not a list of "Don'ts" that would restrict our freedom</p> <p>Guidelines could help by making things more concrete, though in the end, I think things are up to one's professional judgment</p>

Table 2.

Online behaviour	Percentage classifying as 'unprofessional'
Posts that disclose information about a patient/client	99
Posts depicting illicit drug consumption	94
Petty criminal activity	91
Photos of a patient/client	91
Posts involving overt sexual content	86
Attitudes of superiority or condescending behaviour (assumed because of professional status)	73
Posts containing partial nudity	82
Obscene gestures in photos (middle finger, etc)	72
Status updates describing substantial alcohol consumption at a party	69
Pictures of an individual clearly acting drunk	68
Endorsements of a pharmaceutical or health product without a conflict of interest disclosure	58
Critical comments about a lecturer or preceptor	69
Swearing or foul language	60
Critical comments of course material, your program, faculty, or the university	49
Posts describing an interaction with a patient/client, that do not reveal any identifying information	40
Making opinionated comments about controversial issues	22
Displaying membership in online groups dealing with controversial issues	17
A picture of an individual having one alcoholic beverage	9
Displaying your current relationship status	5

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"Have you seen what's on Facebook?" The use of social networking software by healthcare professions students.

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Title

“Have you seen what’s on Facebook?” The use of social networking software by healthcare professions students

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Competing Interest Declaration

"All authors have completed the Unified Competing Interest form at www.icmje.org/coi_disclosure.pdf (available on request from the corresponding author) and declare that (1) [initials of relevant authors] have support from [name of company] for the submitted work; (2) [initials of relevant authors] have [no or specified] relationships with [name of companies] that might have an interest in the submitted work in the previous 3 years; (3) their spouses, partners, or children have [specified] financial relationships that may be relevant to the submitted work; and (4) [initials of relevant authors] have no [or specified] non-financial interests that may be relevant to the submitted work."

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Contributorship statement

All authors are justifiably credited with authorship, according to the authorship criteria. In detail:
Jonathan White: study conception and design, analysis and interpretation of data, revising the article, final approval of the version to be published
Paul Kirwan Wallace: data collection, analysis and interpretation of data, interviewer, input to drafts of the article, final approval of the version to be published
Krista Lai: analysis and interpretation of data, input to drafts of the article, final approval of the version to be published
Jennifer Walton: analysis and interpretation of data, input to drafts of the article, final approval of the version to be published
Shelley Ross: study conception and design, analysis and interpretation of data, revising the article, final approval of the version to be published

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Ethical Approval

Ethics approval was obtained from the University of Alberta Health Research Ethics Board (ref: 22787).

ABSTRACT

Objective. The use of social networking software has become ubiquitous in our society. The aim of this study was to explore the attitudes and experiences of healthcare professional students using Facebook at our school, and to determine if there is a need for development of policy to assist students with utilizing this technology during their professional education.

Design. A mixed-methods approach was employed, using semi-structured interviews to identify important themes which were further explored using an online survey. A combination of descriptive statistics and thematic analysis was used to analyse the data obtained.

Setting & Participants: Students of Medicine, Nursing, Pharmacy, Speech & Language Pathology, Occupational Therapy, Physical Therapy, Dentistry, Dental Hygiene and Medical Laboratory Science at a large North American university.

Results. 14 interviews were analysed in-depth, and 682 healthcare professions students responded to the survey, an approximate 17% response rate. 93% reported current Facebook use. Themes identified included: patterns of use and attitudes to friendship, attitudes to online privacy, breaches of professional behaviour on Facebook, and attitudes to guidelines relating to Facebook use. A majority considered posting of the following material unprofessional: use of alcohol and drugs, crime, obscenity, patient/client information, sexual content and nudity and criticism of others. 44% reported seeing such material posted by a colleague, and 27% reported posting such

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3 material themselves. A majority of participants agreed that guidelines for Facebook use
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5 would be beneficial.
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9 **Conclusions.** This study demonstrates that the use of social networking software is
10
11 widespread amongst healthcare students at our school, and highlights the challenges
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13 which accompany the use of this new technology. We believe that studies such as this
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15 are important in understanding the pedagogy and practices of Facebook use and in
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17 helping students navigate the dilemmas associated with becoming 21st century
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19 healthcare professionals.
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Article focus

The use of social networking software has become ubiquitous in our society. Healthcare practitioners and their students have struggled to integrate this new technology with the expectations of professional behaviour.

Key messages

- Social networking software is widespread amongst healthcare students at our school. This paper highlights the challenges which accompany the use of this new technology, including the posting of unprofessional and inappropriate material online.
- We discuss the dilemma of students wanting to share information in a mixed social network in order to remain popular, while also being wary about how material shared will make them appear.
- We suggest that guidelines for the use of social networking software may help our students deal with this dilemma more effectively.

Strengths and limitations of this study

Although the survey element of this study had a relatively low response rate, it did gather data from a large number of students training in several different health professions, and we believe it provides an interesting snapshot of attitudes to social networking software at our school. The low response rate to the survey means that we cannot exclude the possibility of response bias and that we cannot easily generalize our findings to the whole population. Given these limitations, we believe that we have

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3 shown that use of Facebook is widespread among the healthcare students we studied,
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5 and that we have identified areas for education policymakers to focus on.
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For peer review only

INTRODUCTION

In recent years, the use of social networking websites such as Facebook, MySpace and Twitter has become ubiquitous in many western countries. At the time of writing, there are over 18.5 million Facebook users in Canada alone, and over 70% of the Canadian population possesses a Facebook account [1]. Facebook use is highly prevalent among medical students: at least 60% of medical students in the US, and over 70% of medical students in the UK are active users [2,3].

A number of authors have written that social networking software has the potential to revolutionize healthcare by increasing interaction between providers and clients and facilitating the free flow of information relating to healthcare [4]. A recent study among primary care physicians and oncologists demonstrated that a majority of those studied used social networking software to keep abreast of new developments in their field and to share knowledge [5]. A recent series of articles has called for surgeons to embrace social media as well [6].

Other authors have called for caution in healthcare providers engaging with social networking software. The software encourages users to share the events of their lives; for individuals training to enter the health professions, such sharing may be in conflict with requirements for confidentiality and professionalism of the profession for which they are training [7]. Some have suggested that Facebook will lead to an unacceptable blurring of the professional and the personal, and make it difficult to maintain proper

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3 boundaries and professional principles [8,9]. Other authors have gone further and
4 suggested that it may be best for healthcare providers not to engage in social
5 networking online [10], or that Facebook use should be monitored or policed in some
6 way [11,12].
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15 This study grew out of a discussion within our medical school about our own students'
16 use of Facebook, based on a number of incidents in which we thought our students
17 could have used Facebook more appropriately. This led to a debate about how (or
18 indeed if) we should advise our students about using such social networking software.
19 We decided to focus on Facebook use instead of Twitter or MySpace, as this has been
20 shown to be the most widely-adopted form of social networking software at the moment
21 [6,13,14]. Most other studies on online social networking in healthcare education have
22 focused on medical students, but we decided to sample a larger population to obtain a
23 broad snapshot of the use of Facebook in all of our healthcare faculties at our school.
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39 The aim of this study was to explore the attitudes and experiences of healthcare
40 professional students using Facebook at our university, with the aim of determining if
41 there is a need for development of policy or guidelines to assist students with integrating
42 this new technology as they progress in their education.
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METHODS

We employed a mixed-methods approach, conducting interviews with a small number of healthcare professions students first to identify important themes related to the use of social networking software, and then developing an online survey which was administered to a larger group.

Semi-structured interviews were conducted with 14 healthcare professions students at our university about participants' current use of social networking services. Interview questions were developed by the authors after a review of the literature (Appendix 1). Convenience sampling was used for recruitment of interview subjects: participants were contacted through email, inviting voluntary participation in an interview. Students in nursing, medicine, dentistry, pharmacy, dental hygiene, speech and language pathology, occupational therapy and physical therapy were included in the invitation email distribution list and a single reminder email was sent. There were no specific exclusion criteria. Consent was obtained in person by the interviewer. Interviews lasted 30-45 minutes, and were designed to elicit information about participants' current use of social networking software. Interviews were audio-recorded and transcribed by a research assistant; transcripts were then analyzed to identify common themes using a simple thematic analysis approach.

Themes identified from interview data were used to construct an anonymous online survey (Appendix 2). Items included a range of single-best-choice, Likert-scale, ranking

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3 and free response items. All items were revised by testing with health professions
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5 students before the survey was distributed. The survey was distributed by email to
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7 students in all of the healthcare professions listed above. Participants were contacted
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9 through email, inviting voluntary participation in the survey; participants who had been
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11 interviewed were free to respond to the survey too.
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17 Descriptive statistics were used to describe responses to each question. Free-text
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19 responses were analyzed to identify common themes and representative quotations.
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21 This study reports our findings relating to students' use of Facebook, unprofessional
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23 behaviours observed online, and about the need for guidelines relating to social
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25 networking software for healthcare professionals. Ethics approval was obtained from the
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27 local Health Research Ethics Board.
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33 34 **RESULTS**

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36 The study took place in fall 2011. We identified the following themes at interview:
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38 patterns of Facebook use, attitudes to friendship on Facebook, attitudes to online
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40 privacy, breaches of professional behaviour posted on Facebook (including use of
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42 alcohol and drugs, crime, obscenity, patient/client information, sexual content and
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44 nudity, criticism of others) and attitudes to guidelines relating to Facebook use.
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51 A total of 682 students responded to the survey, a response rate of approximately 17%
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53 (estimated total number of students: 3984). The number of respondents, response rate
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55 and gender balance from each faculty are shown in Table 1. As expected, females
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3 outnumbered males in all the faculties sampled. In the following section, quotations from
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5 free-response items are presented to highlight particular themes identified, while
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7 percentages in brackets are used to indicate the proportion of respondents to the online
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9 survey who expressed agreement with a particular theme or statement observed.
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12 Additional representative quotations are presented in Table 2.
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17 93% of respondents reported having a Facebook account; 76% described checking
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19 their account at least 2 times per day, with 39% checking at least 5 times a day. When
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21 asked “who is on your friend list?”, respondents indicated the following categories: other
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23 students 96%, previous work colleagues 73%, current work colleagues 44%, previous
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25 instructors 21%, current instructors 5%, previous patients/clients 2%, current
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27 patients/clients 0.3% .
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34 Respondents were asked to consider the types of material that they would consider
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36 unprofessional in principle if posted to Facebook (Table 3). 99% of respondents agreed
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38 that it would be unprofessional to post images or text which could be used to identify a
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40 patient. 40% of respondents said it was unprofessional to post anything at all relating to
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42 a patient/client, even without identifying information.
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- 48 • *A girl I know openly posts "quotes of the day" from patients she works with in mental*
49 *health. She does not say who said them, and they are funny, but since I work there*
50 *too, the info is identifying. I think it crosses a line.*
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3 Over 80% considered posts or images relating to the following activities unprofessional:
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5 illicit drug consumption, criminal activity, overt sexual content, partial nudity and
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Over 80% considered posts or images relating to the following activities unprofessional: illicit drug consumption, criminal activity, overt sexual content, partial nudity and condescending or superior behaviour. At least 50% considered the following unprofessional: critical comments about a teacher, drunkenness/excessive drinking, swearing, and obscene gestures. Less than 10% objected to posts or photos depicting drinking in moderation, and to posting current relationship status.

- *Plenty of students in my class post pictures of heavy drinking, many swear or have inappropriate sexual innuendo in their status updates.*

44% of respondents described seeing material they considered unprofessional which had been posted to Facebook by a colleague (153 responses). The most common specific examples given included criticism of teachers and programs (56 instances), inappropriate photographs (47 instances), depictions of drunkenness (27), posts about patients (21) and negative comments about patients (13). Other examples included parties attended (9), swearing (8), references to sex (7), inappropriate posts about work (5), negative comments about other professions (5) and consumption of illegal drugs (3). There were also descriptions of errors, negative comments about co-workers, inappropriate behaviour in uniform, nudity, criminal activity, obscene gestures, racist and sexist comments and pictures of a cadaver (1-2 of each).

- *I know a medical student who often posts complaints about her faculty and also personal patient information*

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6 27% of respondents admitted to posting material which, with hindsight, they now
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8 considered unprofessional (81 responses). The most common transgressions described
9
10 were posting inappropriate pictures (15 instances), swearing (13), criticizing teachers
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12 and programs (9), drinking (9), posting comments open to misinterpretation (8) and
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14 parties (5). There were 3 instances of posting sexual content, 2 posts about patients
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16 and 1 example of expressing negative views about a patient.
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- 22 • *I've wrote personal posts before that probably shouldn't have been posted.*
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27 44% described having material posted about them which they felt made them look
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29 unprofessional (137 examples). The vast majority of these instances related to the
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31 posting of photographs online (106); the most common areas of concern related to
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33 alcohol consumption (39) and attending parties (15); there were also examples of nudity
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35 (4), sexual material (3) and information pertaining to a relationship (1). 18% of
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37 respondents reported that the posting of such material had made them consider
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39 withdrawing from the use of social networking software.
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- 46 • *People have posted hilarious photos from parties and other events some of which*
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48 *depict me as being intoxicated but once again I'm hoping that due to privacy settings*
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50 *the general public cannot see these.*
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55 As a group, respondents were ambiguous about posting material on Facebook. Some
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3 students considered it intrusive that faculty should even be enquiring about their
4 Facebook use, as they considered this too personal a topic for discussion. Others
5 expressed concern that faculty's expectations around their online activities were
6 unreasonable. Others took the view that they should be able to post what they like as
7 long as they could control who has access.
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18 • *Just because we are in a health care profession does not mean that we do not have*
19 *freedom of speech.*
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24 Students expressed the view that posting material to Facebook was associated with
25 some risk to their current position and future prospects.
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32 • *I am aware that my behaviour in all domains affects my reputation, so I am*
33 *careful about who I am seen with and what I do.*
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39 Many students described censoring themselves and removing material they had posted
40 or been tagged in previously, or requesting to have their name removed from photos
41 posted by other users.
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46 • *I went through my Facebook photos and took down the photos I had posted with*
47 *me in party pictures from my first undergrad degree. If I even looked drunk or*
48 *questionable, or if the party had a funny, (but inappropriate theme) then I took*
49 *those pictures down as well. I don't generally post a lot of comments, and none*
50 *that I regret, but a picture is still worth a thousand words.*
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6 98% of respondents described having altered the privacy settings of their Facebook
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8 account on at least one occasion; the reasons given for this included protection from
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10 strangers 99%, not trusting Facebook 62%, risk of viewing by potential employers 52%,
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12 advice from peers 30%, and advice from instructors 17%.
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18 • *I don't really understand the privacy settings, so I just made them strict, just in case.*
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20 • *I don't post anything on Facebook that could compromise me for work in any way.*
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25 Lastly, respondents were asked about the use of guidelines relating to the use of social
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27 networking software in health professions education. Many were unfamiliar with existing
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29 guidelines (43%); only 15% agreed that existing guidelines were adequate. A majority
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31 agreed that guidelines would be beneficial: 79% agreed that others would benefit, and
32
33 62% stated they would benefit personally.
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39 • *There are certain guidelines that I think any professional or role model should follow:*
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41 *no photos of inappropriate conduct (nudity, heavy drinking, sexual content, etc),*
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43 *patients/clients should not be added as friends or be able to view photos,*
44
45 *confidential information remains confidential.. otherwise, if people are stupid enough*
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47 *to jeopardize their profession by posting something on facebook, they should deal*
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49 *with the consequences (losing a current or potential job, etc)*
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DISCUSSION

This study demonstrates that the use of social networking software is widespread amongst students in the healthcare professions at our university and highlights some of the dilemmas which accompany the use of this new technology.

There was widespread agreement that posting material that can identify a patient/client should be considered unprofessional, as should material relating to drugs, sex, nudity, drunkenness, crime and obscenity. A majority also considered it unprofessional to post critical comments about teachers/programs and posts which could be considered condescending. Despite these stated understandings, nearly half of the students we studied reporting seeing their colleagues posting unprofessional material on Facebook, and over a quarter reported posting such material themselves. There was a wide range of transgressions reported, including criticism of teachers/programs, posting of inappropriate photographs, drunkenness, parties and swearing.

Our findings agree with other recent papers in the field. A study by Giordano & Giordano on healthcare students found that 77% of students used Facebook, and that use was inversely correlated with age [13]. This paper also showed that the main reasons for use were to maintain personal and professional connections, and to obtain up-to-date information. Thompson *et al* examined Facebook use in US medical students and residents, and found that 47% had Facebook accounts, and that only one-third had privacy settings set sufficiently high to prevent public access. A number of accounts

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3 contained material relating to substance abuse, sexism, racism, or lack of respect to
4 patients [3]. A similar study on New Zealand physicians found that 65% had Facebook
5 accounts, many of which contained public information relating to alcohol consumption,
6 sexual orientation, and religion [15]. Similar findings have also been observed in US
7 otolaryngology residents and British medical students [16]. In a recent study, 60% of US
8 medical schools reported incidents relating to the use of social networking software,
9 including breaches of patient confidentiality, profanity relating to the school, intoxication
10 or substance abuse and nudity and sexual relationships. The majority of schools had
11 issued a warning to the students involved, and a small number had dismissed a student
12 over the issue [17].
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29 Our findings on student attitudes about posting unprofessional material are also
30 supported by a study which used focus groups to explore the issue among US medical
31 students [18]. As in our study, students generally agreed that it was unprofessional to
32 breach patient confidentiality online, but there was less consensus about material
33 relating to alcohol, drugs, sex and speaking poorly of others. This study also found that
34 students expressed ambiguity about their use of Facebook, and “viewed online activity
35 through a lens of personal risk”, considering how what they post could be used to harm
36 them.
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51 The types of material which our students considered problematic are congruent with
52 other work outside healthcare describing the five main “Facebook Follies” which
53 employers consider relevant when hiring new employees: negative attitudes to work,
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3 profanity, alcohol, drugs, and sexual activity [19]. Students also appear to be aware of
4
5 the impact of their online activities, and have identified similar areas that they do not
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7 wish employers to see including drinking and drugs, photographs from parties,
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10 comments from friends, and comments about work [20-22].
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15 Christofides *et al* have observed that social networking software encourages people to
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17 disclose more personal information that they would otherwise do in order to remain
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19 popular within a social network, but also generates concern about information control
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21 and privacy [23]. Inappropriate pictures, especially of parties and drinking are a
22
23 common cause of concern. As they write:
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29 *(Online) identity ... is a social product created not only by what you share, but also by*
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31 *what others share and say about you... the people who are most popular are those*
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33 *whose identity construction is most actively participated in by others... (by) limiting*
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35 *access to personal information... the individual also... potentially reduces his or her*
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37 *popularity. [23]*
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43 We hypothesize that students are faced with a difficult dilemma: wanting to share
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45 information in a mixed personal/professional social network in order to remain popular,
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47 while also being wary about how the material they share will make them appear and
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49 who will see it. Others have also described this 'balancing act' between the need to
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51 share information and the desire to manage how one's self is presented [24]. This is a
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53 process of trial and error, and students express regret for the negative consequences of
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3 material posted previously [25]. We believe that this process is similar to other
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5 processes of conforming in healthcare education which have been described elsewhere
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7 [26].
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12 Given the concerns over the use of Facebook by healthcare professions students, it is
13
14 surprising to find that in a recent study, only 10% of US medical schools had a policy of
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16 any kind relating to social networking, and only 5 of the 132 schools studied provided
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18 advice on how students could avoid posting inappropriate content [27]. The American
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20 Medical Association has recently issued a report on professionalism in the use of social
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22 media [28], and a number of other organizations have suggested guidelines for
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24 physicians using social networking sites [29-33], but so far there is no generally-
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26 accepted policy for students of the health professions.
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34 Some have gone so far as to suggest we need to “divorce” the personal from the
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36 professional online, creating separate Facebook identities with “dual-citizenship” [34].
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38 We believe that such concerns about Facebook use by healthcare professionals may be
39
40 excessive and that social networking software is not dangerous or something to be
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42 feared, policed, or banned [35]. Others have shown that both students and educators
43
44 are struggling to integrate this new technology into our existing practices of teaching
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46 and learning [36]. Online technologies are simply tools which are neither inherently
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48 good nor bad [3 37]; in some ways, social networking technologies act as a “mirror”
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50 which reflects all of our activities, including some activities we would rather not show to
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52 the world [38].
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6 Our study was limited in several areas. Although the survey element of this study had a
7
8 relatively low response rate, it did gather data from a large number of students training
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10 in several different health professions, and we believe it provides an interesting
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12 snapshot of attitudes to social networking software at our school across a number of
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14 different faculties. The low response rate to the survey means that we cannot exclude
15
16 the possibility of response bias and that we cannot easily generalize our findings to the
17
18 whole population. Given these limitations, we believe that we have shown that use of
19
20 Facebook is widespread among the healthcare students we studied, and that we have
21
22 identified areas for education policymakers to focus on.
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29 We believe that studies such as this are important in exploring and understanding the
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31 pedagogy and practices of Facebook use and help students navigate the dilemmas
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33 associated with becoming 21st century healthcare professionals.
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6 **Disclosures**
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8
9 *Disclaimers*

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11 None

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14 *Previous presentations*

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16 Previously presented at the 2012 Canadian Conference on Medical Education and
17 published in abstract form as:
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21 Facebook Use By Healthcare Students And Faculty: Do We Need Guidelines For
22 Online Professionalism? P Kirwan, J White, S Ross. *Medical Education* 2012; 46
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24 (Suppl. 1): 53
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Table 1. Respondents to the online survey

Faculty	Number of respondents to the online survey	Approx response rate (%)	Female:male ratio
Medicine	232	33	58:42
Nursing	200	15	95:5
Pharmacy	82	16	73:27
Speech & Language Pathology	54	24	94:6
Occupational Therapy	43	11	81:19
Physical Therapy	24	5	83:17
Dentistry & Dental Hygiene	24	8	61:39
Medical Laboratory Science	23	20	78:22
Total	682	17	77:23

Table 2. Representative Quotations

Patient confidentiality	<p>Disclosing confidential information about a patient to the general public is never permissible.</p> <p>One fellow student ... described the age of the patient, gender, and exactly what injuries they sustained in detail ... she did not disclose the name of this patient, but if my Grandma had an accident and was taken to this small rural hospital last night, it would not be hard to figure out that was who she was talking about. If you want to "debrief" to your friends on a one to one level about what you saw or experienced that it is fine. But putting it up as your "status" is inappropriate and not necessary. She was doing it so that all the other non-nurses on her friends list can see what a cool job she has. When people say they had, "the worst patient ever today", or when they discuss "helped deliver a baby in the front lobby of the hospital today".... I know if that had been me I would not want someone posting it all over Facebook.</p>
Activities considered unprofessional	<p>Many students post pictures of them partying on the weekend, which could generate negative opinions about the healthcare profession because it is not the behavior expected of a professional.</p>
Unprofessional material observed from others	<p>A lot of nursing students share their frustrations of the faculty on Facebook, and will tell positive stories about their time at clinical.</p> <p>My most appalling example is photos of a peer with a cadaver that were posted on Facebook.</p>
Unprofessional material posted by self	<p>I have unprofessional pictures on Facebook, and don't see any conflict with this in my professional life as a soon to be registered nurse</p> <p>The odd time this has happened has been when I've been intoxicated.</p> <p>In my first career, around 5 years ago (when FB was relatively new), I posted on a colleagues wall asking about a client. I was asking in a caring manner, but still should not have. Lesson learned. Now I do not have work colleagues on my FB nor would I write about a client.</p> <p>Something inappropriate was said in class by a professor and I joined a thread poking fun at that professor. I did remove the post when I realized what I had done</p>
Unprofessional material affecting self	<p>I'm sure a lot of the pictures of me during my undergrad could be considered unprofessional.</p>
Freedom of speech	<p>If patients and clients have the right to have their personal lives and information kept from being disclosed, then me being a health professional - I also have a personal life. One that is enjoyed and should be able to be enjoyed freely without interference or judgment.</p>

Risk	<p>Facebook is tons of fun... but a scary place! Way too much info floating around. People can make things up, or post photos of you without your consent.</p> <p>I think one has to be very careful with Facebook, and often I don't think people realize the negative affects it can have.</p> <p>Many people can misjudge a post on a social media site or take it out of context, resulting in a false negative image for the user.</p>
Control	<p>I have no control over who snaps a picture of me doing something in my personal life and posting them on Facebook.</p> <p>You have to be squeaky clean everywhere in life, or Facebook could be used to haunt you.</p> <p>A friend posted pictures of me and some of my other friends acting silly, and I was upset that she had not earlier asked for my consent or the consent of my friends who were against the pictures being posted, so i made her remove the pictures.</p> <p>There are photos of me being silly/drunk from earlier years of my life on Facebook, but I have untagged myself. There is nothing really bad because I would never let someone take a really unprofessional picture of me.</p>
Attitudes to guidelines	<p>I firmly support the idea of social media guidelines imparted by the university and/or professional licensing body.</p> <p>Some guidelines should be in place to set a standard but definitely not a list of "Don'ts" that would restrict our freedom</p> <p>Guidelines could help by making things more concrete, though in the end, I think things are up to one's professional judgment</p>

Table 3. Types of material participants would consider unprofessional in principle if posted to Facebook

Online behaviour	Percentage classifying as 'unprofessional'
Posts that disclose information about a patient/client	99
Posts depicting illicit drug consumption	94
Petty criminal activity	91
Photos of a patient/client	91
Posts involving overt sexual content	86
Attitudes of superiority or condescending behaviour (assumed because of professional status)	73
Posts containing partial nudity	82
Obscene gestures in photos (middle finger, etc)	72
Status updates describing substantial alcohol consumption at a party	69
Pictures of an individual clearly acting drunk	68
Endorsements of a pharmaceutical or health product without a conflict of interest disclosure	58
Critical comments about a lecturer or preceptor	69
Swearing or foul language	60
Critical comments of course material, your program, faculty, or the university	49
Posts describing an interaction with a patient/client, that do not reveal any identifying information	40
Making opinionated comments about controversial issues	22
Displaying membership in online groups dealing with controversial issues	17
A picture of an individual having one alcoholic beverage	9
Displaying your current relationship status	5

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Title

“Have you seen what’s on Facebook?” The use of social networking software by healthcare professions students

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Competing Interest Declaration

"All authors have completed the Unified Competing Interest form at www.icmje.org/coi_disclosure.pdf (available on request from the corresponding author) and declare that (1) [initials of relevant authors] have support from [name of company] for the submitted work; (2) [initials of relevant authors] have [no or specified] relationships with [name of companies] that might have an interest in the submitted work in the previous 3 years; (3) their spouses, partners, or children have [specified] financial relationships that may be relevant to the submitted work; and (4) [initials of relevant authors] have no [or specified] non-financial interests that may be relevant to the submitted work."

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Contributorship statement

All authors are justifiably credited with authorship, according to the authorship criteria. In detail:

Jonathan White: study conception and design, analysis and interpretation of data, revising the article, final approval of the version to be published

Paul Kirwan Wallace: data collection, analysis and interpretation of data, interviewer, input to drafts of the article, final approval of the version to be published

Krista Lai: analysis and interpretation of data, input to drafts of the article, final approval of the version to be published

Jennifer Walton: analysis and interpretation of data, input to drafts of the article, final approval of the version to be published

Shelley Ross: study conception and design, analysis and interpretation of data, revising the article, final approval of the version to be published

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Ethical Approval

Ethics approval was obtained from the University of Alberta Health Research Ethics Board (ref: 22787).

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60**ABSTRACT (316 words)**

Objective. The use of social networking software has become ubiquitous in our society. The aim of this study was to explore the attitudes and experiences of healthcare professional students using Facebook at our school, and to determine if there is a need for development of policy to assist students with utilizing this technology during their professional education.

Design. A mixed-methods approach was employed, using semi-structured interviews to identify important themes which were further explored using an online survey. A combination of descriptive statistics and thematic analysis was used to analyse the data obtained.

Setting & Participants: Students of Medicine, Nursing, Pharmacy, Speech & Language Pathology, Occupational Therapy, Physical Therapy, Dentistry, Dental Hygiene and Medical Laboratory Science at a large North American university.

Results. 14 interviews were analysed in-depth, and 682 healthcare professions students responded to the survey, an approximate 17% response rate. 93% reported current Facebook use. Themes identified included: patterns of use and attitudes to friendship, attitudes to online privacy, breaches of professional behaviour on Facebook, and attitudes to guidelines relating to Facebook use. A majority considered posting of the following material unprofessional: use of alcohol and drugs, crime, obscenity, patient/client information, sexual content and nudity and criticism of others. 44% reported seeing such material posted by a colleague, and 27% reported posting such

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9 material themselves. A majority of participants agreed that guidelines for Facebook use
10 would be beneficial.
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13 **Conclusions.** This study demonstrates that the use of social networking software is
14 widespread amongst healthcare students at our school, and highlights the challenges
15 which accompany the use of this new technology. We believe that studies such as this
16 are important in understanding the pedagogy and practices of Facebook use and in
17 helping students navigate the dilemmas associated with becoming 21st century
18 healthcare professionals.
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Article focus

The use of social networking software has become ubiquitous in our society. Healthcare practitioners and their students have struggled to integrate this new technology with the expectations of professional behaviour.

Key messages

- Social networking software is widespread amongst healthcare students at our school. This paper highlights the challenges which accompany the use of this new technology, including the posting of unprofessional and inappropriate material online.
- We discuss the dilemma of students wanting to share information in a mixed social network in order to remain popular, while also being wary about how material shared will make them appear.
- We suggest that guidelines for the use of social networking software may help our students deal with this dilemma more effectively.

Strengths and limitations of this study

Although ~~Although~~ the survey element of this study had a relatively low response rate, it did gather data from a large number of students training in several different health professions, and we believe it provides an interesting snapshot of attitudes to social networking software at our school. -The low response rate to the survey means that we cannot exclude the possibility of response bias and that we cannot easily generalize our findings to the whole population. Given these limitations, we believe that we and is

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9 possibly subject to response bias, we believe we have shown that use of Facebook ~~is~~ is
10 widespread among the healthcare students we studied, and that we have identified
11 important areas for education policymakers to focus on.
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INTRODUCTION

In recent years, the use of social networking websites such as Facebook, MySpace and Twitter has become ubiquitous in ~~our many western countries~~society. At the time of writing, there are over 18.5 million Facebook users in Canada alone, and over 70% of the Canadian population possesses a Facebook account [1]. Facebook use is highly prevalent among medical students: at least 60% of medical students in the US, and over 70% of medical students in the UK are active users [2,3].

A number of authors have written that social networking software has the potential to revolutionize healthcare by increasing interaction between providers and clients and facilitating the free flow of information relating to healthcare [43]. A recent study among primary care physicians and oncologists demonstrated that a majority of those studied used social networking software to keep abreast of new developments in their field and to share knowledge [54]. A recent series of articles has called for surgeons to embrace social media as well [65].

Other authors have called for caution in healthcare providers engaging with social networking software. The software encourages users to share the events of their lives; for individuals training to enter the health professions, such sharing may be in conflict with requirements for confidentiality and professionalism of the profession for which they are training [76]. Some have suggested that Facebook will lead to an unacceptable blurring of the professional and the personal, and make it difficult to maintain proper

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9 | boundaries and professional principles [8,97,8]. Other authors have gone further and
10 | suggested that it may be best for healthcare providers not to engage in social
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12 | networking online [109], or that Facebook use should be monitored or policed in some
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14 | way [1,120,44].
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18 | This study grew out of a discussion within our medical school about our own students'
19 | use of Facebook, based on a number of incidents in which we thought our students
20 | could have used Facebook more appropriately. This led to a debate about how (or
21 | indeed if) we should advise our students about using such social networking software.
22 |
23 | We decided to focus on Facebook use instead of Twitter or MySpace, as this has been
24 | shown to be the most widely-adopted form of social networking software at the moment
25 |
26 | [2,65,132,143]. Most other studies on online social networking in healthcare education
27 | have focused on medical students, but we decided to sample a larger population to
28 | obtain a broad snapshot of the use of Facebook in all of our healthcare faculties at our
29 | school.
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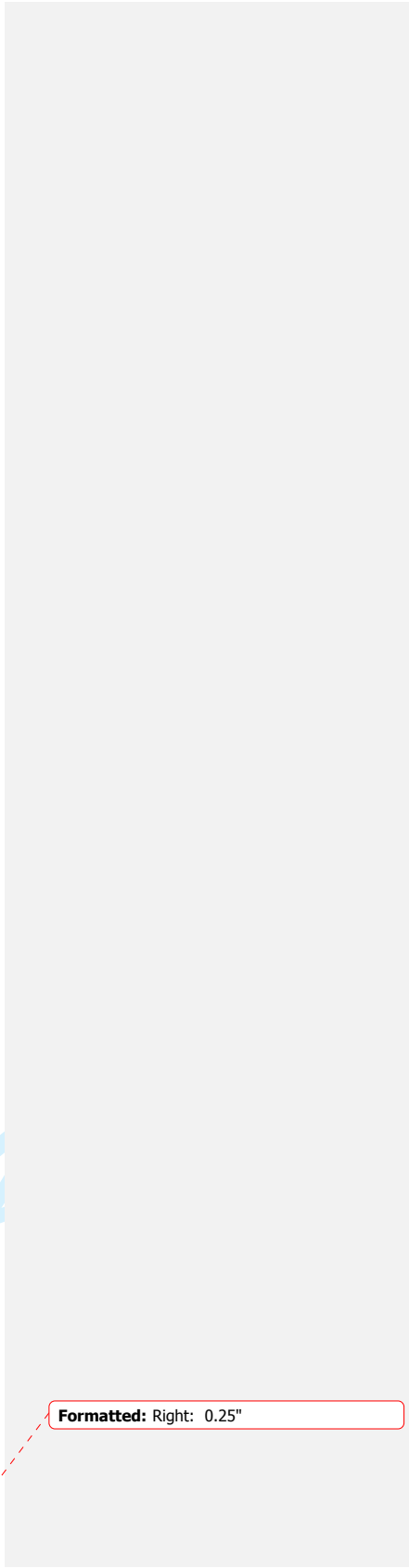
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39 | The aim of this study was to explore the attitudes and experiences of healthcare
40 | professional students using Facebook at our university, with the aim of determining if
41 | there is a need for development of policy or guidelines to assist students with integrating
42 | this new technology as they progress in their education.
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METHODS

We employed a mixed-methods approach, conducting interviews with a small number of healthcare professions students first to identify important themes related to the use of social networking software, and then developing an online survey which was administered to a larger group.

Semi-structured interviews were conducted with 14 healthcare professions students at our university about participants' current use of social networking services. Interview questions were developed by the authors after a review of the literature ([Appendix 1](#)). Convenience sampling was used [for recruitment of interview subjects](#): participants were contacted through email, inviting voluntary participation in an interview. Students in nursing, medicine, dentistry, pharmacy, dental hygiene, speech and language pathology, occupational therapy and physical therapy were included in the invitation email distribution list and a single reminder email was sent. There were no specific exclusion criteria. Consent was obtained in person by the interviewer. Interviews lasted 30-45 minutes, and were designed to elicit information about participants' current use of social networking software. Interviews were audio-recorded and transcribed by a research assistant; transcripts were then analyzed to identify common themes [using a simple thematic analysis approach](#).

Themes identified from interview data were used to construct an anonymous online survey ([Appendix 2](#)). Items included a range of single-best-choice, Likert-scale, ranking

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and free response items. All items were revised by testing with health professions students before the survey was distributed. ~~Convenience sampling was again employed, and~~ the survey was distributed by email to students in all of the healthcare professions listed above. Participants were contacted through email, inviting voluntary participation in the survey; participants who had been interviewed were free to respond to the survey too.

Descriptive statistics were used to describe responses to each question. Free-text responses were analyzed to identify common themes and representative quotations. This study reports our findings relating to students' use of Facebook, unprofessional behaviours observed online, and about the need for guidelines relating to social networking software for healthcare professionals. Ethics approval was obtained from the local Health Research Ethics Board.

RESULTS

The study took place in fall 2011. We identified the following themes at interview: patterns of Facebook use, attitudes to friendship on Facebook, attitudes to online privacy, breaches of professional behaviour ~~posted~~ on Facebook (including use of alcohol and drugs, crime, obscenity, patient/client information, sexual content and nudity, criticism of others) and attitudes to guidelines relating to Facebook use.

A total of 682 students responded to the survey, a response rate of approximately 17% (estimated total number of students: 3984). The number of ~~students-respondents~~.

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9 response rate and gender balance from fro each faculty was as follows: Medicine: 232,
10 Nursing: 200, Pharmacy: 82, Speech & Language Pathology: 54, Occupational
11 Therapy: 43, Physical Therapy: 24, Dentistry/Dental Hygiene 23, Medical Laboratory
12 Science: 23 are shown in Table 1. Over 75% of respondents were aged 18-25, and the
13 gender balance was 3.2:1 (521 females: 158 males). As expected, females
14 outnumbered males in all the faculties sampled. In the following section, quotations from
15 free-response items are presented to highlight particular themes identified, while
16 percentages in brackets are used to indicate the proportion of respondents to the online
17 survey who expressed agreement with a particular theme or statement observed.

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26 Additional representative quotations are presented in Table 24.

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30 93% of respondents reported having a Facebook account; 76% described checking
31 their account at least 2 times per day, with 39% checking at least 5 times a day. When
32 asked “who is on your friend list?”, respondents indicated the following categories: other
33 students 96%, previous work colleagues 73%, current work colleagues 44%, previous
34 instructors 21%, current instructors 5%, previous patients/clients 2%, current
35 patients/clients 0.3% .

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42 Respondents were asked to consider the types of material that they would consider
43 unprofessional in principle if posted to Facebook (Table 32). 99% of respondents
44 agreed that it would be unprofessional to post images or text which could be used to
45 identify a patient. 40% of respondents said it was unprofessional to post anything at all
46 relating to a patient/client, even without identifying information.

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11 • *A girl I know openly posts "quotes of the day" from patients she works with in mental*
12 *health. She does not say who said them, and they are funny, but since I work there*
13 *too, the info is identifying. I think it crosses a line.*
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18 Over 80% considered posts or images relating to the following activities unprofessional:
19 illicit drug consumption, criminal activity, overt sexual content, partial nudity and
20 condescending or superior behaviour. At least 50% considered the following
21 unprofessional: critical comments about a teacher, drunkenness/excessive drinking,
22 swearing, and obscene gestures. Less than 10% objected to posts or photos depicting
23 drinking in moderation, and to posting current relationship status.
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31 • *Plenty of students in my class post pictures of heavy drinking, many swear or have*
32 *inappropriate sexual innuendo in their status updates.*
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37 44% of respondents described seeing material they considered unprofessional material
38 which had been posted to Facebook by a colleague (153 responses). The most
39 common specific examples given included criticism of teachers and programs (56
40 instances), inappropriate photographs (47 instances), depictions of drunkenness (27),
41 posts about patients (21) and negative comments about patients (13). Other examples
42 included parties attended (9), swearing (8), references to sex (7), inappropriate posts
43 about work (5), negative comments about other professions (5) and consumption of
44 illegal drugs (3). There were also descriptions of errors, negative comments about co-
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9 workers, inappropriate behaviour in uniform, nudity, criminal activity, obscene gestures,
10 racist and sexist comments and pictures of a cadaver (1-2 of each).

- 14 • *I know a medical student who often posts complaints about her faculty and also*
15 *personal patient information*

19
20 27% of respondents admitted to posting material which, with hindsight, they now
21 considered unprofessional (81 responses). The most common transgressions described
22 were posting inappropriate pictures (15 instances), swearing (13), criticizing teachers
23 and programs (9), drinking (9), posting comments open to misinterpretation (8) and
24 parties (5). There were 3 instances of posting sexual content, 2 posts about patients
25 and 1 example of expressing negative views about a patient.

- 32 • *I've wrote personal posts before that probably shouldn't have been posted.*

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37 44% described having material posted about them which they felt made them look
38 unprofessional (137 examples). The vast majority of these instances related to the
39 posting of photographs online (106); the most common areas of concern related to
40 alcohol consumption (39) and attending parties (15); there were also examples of nudity
41 (4), sexual material (3) and information pertaining to a relationship (1). 18% of
42 respondents reported that the posting of such material had made them consider
43 withdrawing from the use of social networking software.
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- *People have posted hilarious photos from parties and other events some of which depict me as being intoxicated but once again I'm hoping that due to privacy settings the general public cannot see these.*

As a group, respondents were ambiguous about posting material on Facebook. Some students considered it intrusive that faculty should even be enquiring about their Facebook use, as they considered this too personal a topic for discussion. Others expressed concern that faculty's expectations around their online activities were unreasonable. Others took the view that they should be able to post what they like as long as they could control who has access.

- *Just because we are in a health care profession does not mean that we do not have freedom of speech.*

Students expressed the view that posting material to Facebook was associated with some risk to their current position and future prospects.

- *I am aware that my behaviour in all domains affects my reputation, so I am careful about who I am seen with and what I do.*

Many students described censoring themselves and removing material they had posted or been tagged in previously, or requesting to have their name removed from photos posted by other users.

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9 • *I went through my Facebook photos and took down the photos I had posted with*
10 *me in party pictures from my first undergrad degree. If I even looked drunk or*
11 *questionable, or if the party had a funny, (but inappropriate theme) then I took*
12 *those pictures down as well. I don't generally post a lot of comments, and none*
13 *that I regret, but a picture is still worth a thousand words.*
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20 98% of respondents described having altered the privacy settings of their Facebook
21 account on at least one occasion; the reasons given for this included protection from
22 strangers 99%, not trusting Facebook 62%, risk of viewing by potential employers 52%,
23 advice from peers 30%, and advice from instructors 17%.
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30 • *I don't really understand the privacy settings, so I just made them strict, just in case.*
31
32 • *I don't post anything on Facebook that could compromise me for work in any way.*
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35 Lastly, respondents were asked about the use of guidelines relating to the use of social
36 networking software in health professions education. Many were unfamiliar with existing
37 guidelines (43%); only 15% agreed that existing guidelines were adequate. A majority
38 agreed that guidelines would be beneficial: 79% agreed that others would benefit, and
39 62% stated they would benefit personally.
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47 • *There are certain guidelines that I think any professional or role model should follow:*
48 *no photos of inappropriate conduct (nudity, heavy drinking, sexual content, etc),*
49 *patients/clients should not be added as friends or be able to view photos,*
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9 *confidential information remains confidential.. otherwise, if people are stupid enough*
10 *to jeopardize their profession by posting something on facebook, they should deal*
11 *with the consequences (losing a current or potential job, etc)*
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18 **DISCUSSION**

20 This study demonstrates that the use of social networking software is widespread
21 amongst students in the healthcare professions at our university and highlights some of
22 the dilemmas which accompany the use of this new technology.
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29 There was widespread agreement that posting material that can identify a patient/client
30 should be considered unprofessional, as should material relating to drugs, sex, nudity,
31 drunkenness, crime and obscenity. A majority also considered it unprofessional to post
32 critical comments about teachers/programs and posts which could be considered
33 condescending. Despite these stated understandings, nearly half of the students we
34 studied reporting seeing their colleagues posting unprofessional material on Facebook,
35 and over a quarter reported posting such material themselves. There was a wide range
36 of transgressions reported, including criticism of teachers/programs, posting of
37 inappropriate photographs, drunkenness, parties and swearing.
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48 Our findings agree with other recent papers in the field. A study by Giordano &
49 Giordano on healthcare students found that 77% of students used Facebook, and that
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9 use was inversely correlated with age [132]. This paper also showed that the main
10 reasons for use were to maintain personal and professional connections, and to obtain
11 up-to-date information. Thompson *et al* examined Facebook use in US medical students
12 and residents, and found that 47% had Facebook accounts, and that only one-third had
13 privacy settings set sufficiently high to prevent public access. A number of accounts
14 contained material relating to substance abuse, sexism, racism, or lack of respect to
15 patients [344]. A similar study on New Zealand physicians found that 65% had
16 Facebook accounts, many of which contained public information relating to alcohol
17 consumption, sexual orientation, and religion [15]. Similar findings have also been
18 observed in US otolaryngology residents and British medical students [16]. In a recent
19 study, 60% of US medical schools reported incidents relating to the use of social
20 networking software, including breaches of patient confidentiality, profanity relating to
21 the school, intoxication or substance abuse and nudity and sexual relationships. The
22 majority of schools had issued a warning to the students involved, and a small number
23 had dismissed a student over the issue [17].
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39 Our findings on student attitudes about posting unprofessional material are also
40 supported by a study which used focus groups to explore the issue among US medical
41 students [18]. As in our study, students generally agreed that it was unprofessional to
42 breach patient confidentiality online, but there was less consensus about material
43 relating to alcohol, drugs, sex and speaking poorly of others. This study also found that
44 students expressed ambiguity about their use of Facebook, and “viewed online activity
45 through a lens of personal risk”, considering how what they post could be used to harm
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12 The types of material which our students considered problematic are congruent with
13 other work outside healthcare describing the five main “Facebook Follies” which
14 employers consider relevant when hiring new employees: negative attitudes to work,
15 profanity, alcohol, drugs, and sexual activity [19]. Students also appear to be aware of
16 the impact of their online activities, and have identified similar areas that they do not
17 wish employers to see including drinking and drugs, photographs from parties,
18 comments from friends, and comments about work [20-22].
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28 Christofides *et al* have observed that social networking software encourages people to
29 disclose more personal information that they would otherwise do in order to remain
30 popular within a social network, but also generates concern about information control
31 and privacy [23]. Inappropriate pictures, especially of parties and drinking are a
32 common cause of concern. As they write:
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39 *(Online) identity ... is a social product created not only by what you share, but also by*
40 *what others share and say about you... the people who are most popular are those*
41 *whose identity construction is most actively participated in by others... (by) limiting*
42 *access to personal information... the individual also... potentially reduces his or her*
43 *popularity. [23]*
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9 We hypothesize that students are faced with a difficult dilemma: wanting to share
10 information in a mixed personal/professional social network in order to remain popular,
11 while also being wary about how the material they share will make them appear and
12 who will see it. Others have also described this 'balancing act' between the need to
13 share information and the desire to manage how one's self is presented [24]. This is a
14 process of trial and error, and students express regret for the negative consequences of
15 material posted previously [25]. We believe that this process is similar to other
16 processes of conforming in healthcare education which have been described elsewhere
17 [26].
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28 Given the concerns over the use of Facebook by healthcare professions students, it is
29 surprising to find that in a recent study, only 10% of US medical schools had a policy of
30 any kind relating to social networking, and only 5 of the 132 schools studied provided
31 advice on how students could avoid posting inappropriate content [27]. The American
32 Medical Association has recently issued a report on professionalism in the use of social
33 media [28], and a number of other organizations have suggested guidelines for
34 physicians using social networking sites [29-33], but so far there is no generally-
35 accepted policy for students of the health professions.
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45 Some have gone so far as to suggest we need to "divorce" the personal from the
46 professional online, creating separate Facebook identities with "dual-citizenship" [34].

47 We believe that such concerns about Facebook use by healthcare professionals may be
48 excessive and that social networking software is not dangerous or something to be
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feared, policed, or banned [35]. Others have shown that both students and educators are struggling to integrate this new technology into our existing practices of teaching and learning [36]. Online technologies are simply tools which are neither inherently good nor bad [3,36,37]; in some ways, social networking technologies act as a “mirror” which reflects all of our activities, including some activities we would rather not show to the world [38].

Our study was limited in several areas. Although the survey element of this study had a relatively low response rate, it did gather data from a large number of students training in several different health professions, and we believe it provides an interesting snapshot of attitudes to social networking software at our school across a number of different faculties. The low response rate to the survey means that we cannot exclude the possibility of response bias and that we cannot easily generalize our findings to the whole population. Given these limitations, we believe that we have shown that use of Facebook is widespread among the healthcare students we studied, and that we have identified areas for education policymakers to focus on.

~~Firstly, we estimated the response rate to the online survey at about 17%. This is relatively low, although the total number of responses is higher than most previous studies in this area. Secondly, response bias is likely: non-users of social networking software would probably be less likely to respond to a survey about Facebook, and would have less strong opinions about its use. Despite these limitations, we believe we have shown that use of Facebook is widespread among healthcare students, and that we have identified important areas for education policymakers to focus on.~~

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11 We believe that studies such as this are important in exploring and understanding the
12 pedagogy and practices of Facebook use and help students navigate the dilemmas
13 associated with becoming 21st century healthcare professionals.
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Disclosures

Disclaimers

None

Previous presentations

Previously presented at the 2012 Canadian Conference on Medical Education and published in abstract form as:

Facebook Use By Healthcare Students And Faculty: Do We Need Guidelines For Online Professionalism? P Kirwan, J White, S Ross. *Medical Education* 2012; 46 (Suppl. 1): 53

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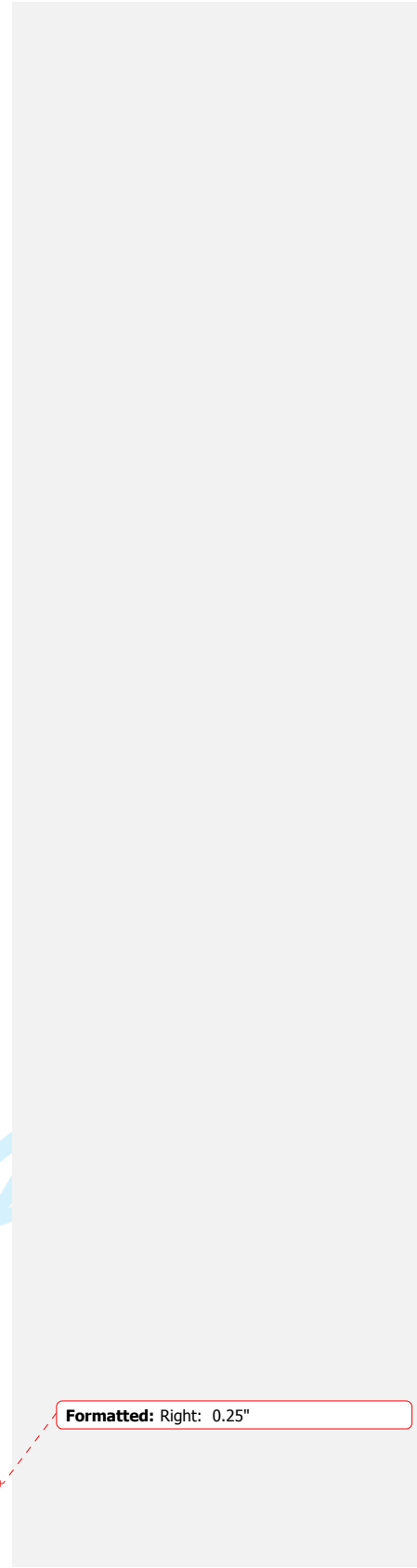
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Table 1. Respondents to the online survey

Faculty	Number of respondents to the online survey	Approx response rate (%)	Female:male ratio
Medicine	232	33	58:42
Nursing	200	15	95:5
Pharmacy	82	16	73:27
Speech & Language Pathology	54	24	94:6
Occupational Therapy	43	11	81:19
Physical Therapy	24	5	83:17
Dentistry & Dental Hygiene	24	8	61:39
Medical Laboratory Science	23	20	78:22
Total	682	17	77:23

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Table 4.2. Representative Quotations

Patient confidentiality	<p>Disclosing confidential information about a patient to the general public is never permissible.</p> <p>One fellow student ... described the age of the patient, gender, and exactly what injuries they sustained in detail ... she did not disclose the name of this patient, but if my Grandma had an accident and was taken to this small rural hospital last night, it would not be hard to figure out that was who she was talking about. If you want to "debrief" to your friends on a one to one level about what you saw or experienced that it is fine. But putting it up as your "status" is inappropriate and not necessary. She was doing it so that all the other non-nurses on her friends list can see what a cool job she has. When people say they had, "the worst patient ever today", or when they discuss "helped deliver a baby in the front lobby of the hospital today".... I know if that had been me I would not want someone posting it all over Facebook.</p>
Activities considered unprofessional	<p>Many students post pictures of them partying on the weekend, which could generate negative opinions about the healthcare profession because it is not the behavior expected of a professional.</p>
Unprofessional material observed from others	<p>A lot of nursing students share their frustrations of the faculty on Facebook, and will tell positive stories about their time at clinical.</p> <p>My most appalling example is photos of a peer with a cadaver that were posted on Facebook.</p>
Unprofessional material posted by self	<p>I have unprofessional pictures on Facebook, and don't see any conflict with this in my professional life as a soon to be registered nurse</p> <p>The odd time this has happened has been when I've been intoxicated.</p> <p>In my first career, around 5 years ago (when FB was relatively new), I posted on a colleagues wall asking about a client. I was asking in a caring manner, but still should not have. Lesson learned. Now I do not have work colleagues on my FB nor would I write about a client.</p> <p>Something inappropriate was said in class by a professor and I joined a thread poking fun at that professor. I did remove the post when I realized what I had done</p>
Unprofessional material affecting self	<p>I'm sure a lot of the pictures of me during my undergrad could be considered unprofessional.</p>
Freedom of speech	<p>If patients and clients have the right to have their personal lives and information kept from being disclosed, then me being a health professional - I also have a personal life. One that is enjoyed and should be able to be enjoyed freely without interference or judgment.</p>

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Risk	<p>Facebook is tons of fun... but a scary place! Way too much info floating around. People can make things up, or post photos of you without your consent.</p> <p>I think one has to be very careful with Facebook, and often I don't think people realize the negative affects it can have.</p> <p>Many people can misjudge a post on a social media site or take it out of context, resulting in a false negative image for the user.</p>
Control	<p>I have no control over who snaps a picture of me doing something in my personal life and posting them on Facebook.</p> <p>You have to be squeaky clean everywhere in life, or Facebook could be used to haunt you.</p> <p>A friend posted pictures of me and some of my other friends acting silly, and I was upset that she had not earlier asked for my consent or the consent of my friends who were against the pictures being posted, so i made her remove the pictures.</p> <p>There are photos of me being silly/drunk from earlier years of my life on Facebook, but I have untagged myself. There is nothing really bad because I would never let someone take a really unprofessional picture of me.</p>
Attitudes to guidelines	<p>I firmly support the idea of social media guidelines imparted by the university and/or professional licensing body.</p> <p>Some guidelines should be in place to set a standard but definitely not a list of "Don'ts" that would restrict our freedom</p> <p>Guidelines could help by making things more concrete, though in the end, I think things are up to one's professional judgment</p>

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Table 3. Types of material participants would consider unprofessional in principle if posted to Facebook
Table 2.

Online behaviour	Percentage classifying as 'unprofessional'
Posts that disclose information about a patient/client	99
Posts depicting illicit drug consumption	94
Petty criminal activity	91
Photos of a patient/client	91
Posts involving overt sexual content	86
Attitudes of superiority or condescending behaviour (assumed because of professional status)	73
Posts containing partial nudity	82
Obscene gestures in photos (middle finger, etc)	72
Status updates describing substantial alcohol consumption at a party	69
Pictures of an individual clearly acting drunk	68
Endorsements of a pharmaceutical or health product without a conflict of interest disclosure	58
Critical comments about a lecturer or preceptor	69
Swearing or foul language	60
Critical comments of course material, your program, faculty, or the university	49
Posts describing an interaction with a patient/client, that do not reveal any identifying information	40
Making opinionated comments about controversial issues	22
Displaying membership in online groups dealing with controversial issues	17
A picture of an individual having one alcoholic beverage	9
Displaying your current relationship status	5

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Interview script

“Are You on Facebook?”

First of all, thank you for agreeing to meet with me in order to take part in this study! Just to remind you, this study deals with the social networking site Facebook, and the role that it currently plays in healthcare professions education.

We have asked to meet with you in order to conduct an in-person interview, so that we can better understand your experiences as a user of Facebook, as well as your beliefs and attitudes surrounding its use in relation to the healthcare professions. We hope to learn about any factors that may have led you to begin, discontinue or refuse ever to use Facebook as a student or medical professional, and also understand any benefits or drawbacks that you might believe exist for those using this popular social networking site.

I also want to make you aware that this interview will be recorded and transcribed so that we are as accurate as possible in our data collection; however, your anonymity will be protected and your identity will in no way be associated with any of the answers that you provide.

Before we begin, please take your time to read the following information sheet and sign the consent form. By consenting to participate in this study you are allowing us to record and transcribe this interview as well as to analyze and, in the future, both publish and present the data we gather today.

Thank you.

Alright, let's begin:

- 1) Do you currently or have you ever had a personal Facebook account?
- 2) How often do you log on to Facebook? (Number of times per day, week, month, etc)
- 3) What would you say is the main purpose of your Facebook use (personal relationships, work relationships, staying in contact with family, sharing of educational information, etc.)?
- 4) Can you tell me what sorts of people are on your friends list on Facebook?
 - Family
 - Personal friends
 - Work colleagues
 - Fellow students
 - Teachers
 - Patients
 - Online friends I have never met in person
- 5) Do you think Facebook use has provided any benefits or opportunities to you as a student or professional other than personal/social communication?

Can you elaborate on that? (ask, if you feel it's necessary)

- 6) What about any motivating factors to use Facebook for educational purposes?

(Suggestions to use as prompts, possible examples: Inadequate classroom instruction, structure of teaching and assessment (piecing together individual work for a common exam), learning in different educational settings, tutorial group learning, etc.)

7) As a student/teacher, have you ever engaged with one of your teachers/students on Facebook?

8) As a student/teacher, have you ever engaged with other students or colleagues *at another university* through social networking sites? What was the nature or purpose of this communication?

9) As a student engaged in some kind of educational group on Facebook, have you or your fellow members ever invited or sought to involve any of your instructors? Why or why not?

10) As an instructor or preceptor in the medical field, have you ever sought to create a space for sharing information using social networking tools? Why or why not? Have students ever approached you about this matter or invited you to join them in some way on these sites?

11) What do you believe are some dangers that exist for professional members of the community using these social media websites?

12) Do you think that there are many people that agree with your opinions on Facebook use within the medical community or the student body? What about those who might oppose your views? Are there any particular demographics you think would support/oppose you?

13) In regards to any dangers or negative aspects you may have mentioned for Facebook use by healthcare professionals, do you feel the current guidelines or recommendations to protect users is adequate? If not, what kind of changes would you recommend?

14) What types of things would you recommend to include in a set of regulations that govern the appropriate use of sites like Facebook by students and medical professionals alike?

15) Do you have any other additional comments regarding your experiences as a user of Facebook?

Thank you once again for taking part in this study. Your responses to the questions I asked today will be invaluable to our ongoing research. As mentioned before, if you have any additional questions regarding the study please contact Dr. White or Dr. Ross.

Have a great day!

Facebook in Healthcare Education

Welcome Page and Consent

Facebook in Healthcare Education

Online Survey

For All Students, Instructors and Faculty Members in Health Professions Education at the University of Alberta

Thank you for taking the time to log on and complete this online survey!

This study deals with the social networking site Facebook, and the role that it currently plays in healthcare education.

The purpose of creating this survey was so that we can better understand your experiences as a user of Facebook, as well as your beliefs and attitudes surrounding its use in relation to the healthcare professions. We hope to learn about any factors that may have led you to begin, discontinue or refuse ever to use Facebook as a student or medical professional, and also understand any benefits or drawbacks that you might believe exist for those using this popular social networking site.

Please understand that by continuing beyond this point and completing this brief survey, you are acknowledging that you are aware your answers will be analyzed and, perhaps in the future, published as a way of presenting our findings. However, you can be certain that your anonymity will be protected and your identity will in no way be associated with any of the answers that you provide in this survey.

Thank you.

Section I: Demographic Information

1. What is your age?

- 18-20
- 21-25
- 26-30
- 31-40
- 41-50
- 51-60
- Over 60

2. Sex:

- Male
- Female

Facebook in Healthcare Education

3. What is your role/ title at the University?

- Student
- Professor/ lecturer
- Administrator
- Faculty assistant

Other (please specify)

4. What program are you affiliated with?

- Nursing
- Medicine
- Dentistry
- Dental Hygiene
- Pharmacy
- Medical Laboratory Science
- Occupational Therapy
- Physical Therapy
- Speech Language Pathology

Other (please specify)

Section II: Facebook Use

5. Do you currently have a Facebook account?

- Yes
- No

Section II: Facebook Use Continued

Facebook in Healthcare Education

6. Approximately how often do you check your Facebook account?

- More than 10 times/day
- 5-10 times/day
- 2-4 times a day
- Once/day
- 2-3 times/week
- Once/week or less

7. How do you most often access Facebook?

- On a desktop computer
- On a laptop
- On my phone
- Other (please specify)

8. When you check your account, how long do you spend each time?

- 0-5 minutes
- 5-10 minutes
- 10-30 minutes
- 30-60 minutes
- More than 1 hour

9. How selective are you in accepting 'Friend Requests' on Facebook?

- I only accept requests from people I know well and family members
- I accept requests from people I have met in person a few times
- I accept requests from people I have only met once
- If I recognize their name or share a few mutual friends, I will accept them, even though we have never met in person
- I accept friend requests from people I have never met in person and don't really know

Facebook in Healthcare Education

10. At the moment, who is on your Friends list on Facebook? (Please check all that apply)

- Undergraduate students
- Residents/postgraduate trainees
- Current instructors
- Previous instructors
- Current Work Colleagues
- Previous Work Colleagues
- Current Patients/Clients
- Previous Patients/Clients

11. If a patient/client sent you a friend request, would you accept?

- Yes
- No
- Maybe (please explain)

12. People use Facebook for many different purposes. To what extent do you use Facebook for the following purposes?

	Never	Rarely	Sometimes	Often
Personal communication with friends and family	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Sharing educational information or resources	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Planning or learning about upcoming events	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Surfing for entertainment	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Playing online games	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Raising awareness/ fundraising	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Any other main uses:

13. Consider any contact you have with peers or colleagues who are AT OTHER UNIVERSITIES through Facebook. Which of the following statements BEST describes the nature of that communication?

- It is entirely personal/social
- It is mostly personal/social. Sometimes we will compare parts of our programs, or discuss what we are currently learning, but it is rare.
- In addition to some personal/social communication, I frequently use it to do things such as: share links to good academic resources, discuss research findings, obtain input on my current academic assignments/endeavors, etc.

Facebook in Healthcare Education

Section III: Privacy Settings

14. Have you ever altered your personal privacy settings?

- Yes
- No

15. Which of the following played a role in your decision to change your personal privacy settings? (Choose all that apply):

- Protecting your personal information from strangers
- Risk of your account being viewed by an admissions committee or potential employers
- Served in a position where you were viewed as a role model (eg. Residence assistant, preceptor, volunteering with a youth mentorship program, etc.)
- Advice from peers
- Recommendation from an instructor, tutor, professor or mentor
- Not trusting Facebook's use of posted information

Other (please specify)

Section IV: Facebook in Education and Health

16. Findings from research suggest that people have differing opinions on issues surrounding Facebook and its use within education, healthcare, and personal contexts. Given this finding, which of the following would you say plays the LARGEST role in creating these differing views?

- Profession (including being in training for a specific profession)
- Country of origin
- Age
- Personality type (introvert or extrovert)
- Sex

Other (please specify)

Facebook in Healthcare Education

17. To what extent do you agree/disagree with the following statements about the use of Facebook in education?

	Strongly Disagree	Disagree	Agree	Strongly Agree
I think that Facebook is useful in education	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Our university should try harder to incorporate Facebook into all its courses	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Facebook has some features that could be useful in education, but I am unsure how well it would work	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I enjoy using Facebook for its personal and social benefits, but I try to avoid dealing with school or work-related content while using it. They should be separate	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
There is no need to incorporate Facebook in education. I believe our current online systems are more than adequate	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

18. To what extent do you agree/disagree with the following statements about the potential use of Facebook in healthcare?

	Strongly Disagree	Disagree	Agree	Strongly Agree
Facebook would be useful for online consultations	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Facebook would be useful for scheduling of appointments	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Facebook would be useful for filling prescriptions	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Facebook would be useful to provide forums being mediated by healthcare professionals to answer questions	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Facebook would be useful to provide opportunities for patients/clients with similar illnesses or conditions to connect for support, etc.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Section V: Online Professionalism

19. To what extent do you agree/disagree with the following statements about professionalism in the healthcare field?

	Strongly Disagree	Disagree	Agree	Strongly Agree
I have a good understanding of what professionalism is, and what is expected of me as a current or future professional	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I fully agree with the expectations of professionalism, and consciously strive to abide by them in all areas of my life	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
A high level of professionalism should be expected of healthcare students from the very beginning of their time as a student	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
There should be some leniency in regards to small incidents of unprofessional conduct in the early years of a professional program	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Facebook in Healthcare Education

20. Current literature suggests that professionalism may be dependent on context or the environment. In which of the following environments do you believe it is reasonable to expect healthcare students to act professionally AT ALL TIMES?

(Check all that apply)

- At the University (eg. In lecture halls, tutorial rooms)
- In the clinic/workplace/hospital
- During free time spent in view of the public

If you left any of the above choices unchecked, please explain why:

21. To what extent do you agree/disagree with the following statements about standards of professionalism relating to online activity?

	Strongly Disagree	Disagree	Agree	Strongly Agree
Professionalism is as important in online activity as it is in traditional environments	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
It is not always entirely possible to maintain professionalism in online activity	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
People have the opportunity to post pictures and document aspects of professionals' lives that would otherwise remain private	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Social media has removed protection for professionals from the public	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Professionals are never free to let their guard down	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The risks of social networking software far outweigh the benefits and its use by health professionals should be DISCOURAGED	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The risks of social networking software far outweigh the benefits and its use by health professionals should be BANNED	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I don't think my online activity has a bearing on who I am as a professional	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I should be able to do whatever I want online	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The university has no business interfering in my online activity	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Facebook in Healthcare Education

22. Consider the following list of possible negative outcomes resulting from unprofessional behaviour online. Please rank the items in the list from those you would personally find most concerning (1), to least concerning (5).

Rank (1-5) (Choose each number only once)

People having the opportunity to make inaccurate judgments about you solely based on posted content

The possibility that your behavior could affect the image of others in your profession

Not being hired by an employer or being accepted to a program because of information discovered about you online

The possibility of losing a position you already have (as an employee or student) because of information discovered about you online

Having privileged information about a patient/client distributed online without their consent

23. Do you believe the debate about online professionalism is more important or less important to other professions than your own?

- I believe this issue is more important for my faculty in particular, compared with some other health professions
- I believe this issue is equally important across all health professions faculties
- I believe this issue is more relevant in certain other health faculties than my own

(please explain, or name those faculties):

Online Professionalism contd.

Facebook in Healthcare Education

24. Which of the following types of material (if posted on Facebook) would you consider to be unprofessional? (Choose all that apply):

- A picture of an individual having one alcoholic beverage
- Pictures of an individual clearly acting drunk
- Status updates describing substantial alcohol consumption at a party
- Posts depicting illicit drug consumption
- Posts that disclose information about a patient/client
- Photos of a patient/client
- Posts describing an interaction with a patient/client, that do not reveal any identifying information
- Swearing or foul language
- Obscene gestures in photos (middle finger, etc)
- Petty criminal activity
- Endorsements of a pharmaceutical or health product without a conflict of interest disclosure
- Posts involving overt sexual content
- Posts containing partial nudity
- Displaying your current relationship status
- Displaying membership in online groups dealing with controversial issues
- Making opinionated comments about controversial issues
- Critical comments about a lecturer or preceptor
- Critical comments of course material, your program, faculty, or the university
- Attitudes of superiority or condescending behaviour (assumed because of professional status)

Other examples of unprofessionalism online (please specify)

25. Do you think that others would benefit from guidelines relating to using social networking software in a professional manner?

- Yes
- No

Facebook in Healthcare Education

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26. Are you aware of another a colleague posting material on Facebook, which you considered unprofessional?

Yes

No

If yes, please describe:

27. Have you yourself ever made any posts or comments on social media websites that, in hindsight, you probably shouldn't have?

Yes

No

If yes, please describe:

28. Has anyone else ever posted material about you online which you found embarrassing or which made you look unprofessional?

Yes

No

If yes, please describe:

29. How would you describe your typical actions or behavior in an online social media environment, given the following definitions?

-Active behavior: making comments, posting links or photos, sending invites

-Passive behavior: reading, observing, having pictures of you or other content relating to you posted by others

More active than passive

More passive than active

About half active, and half passive

I do not have an account on a social media website

Facebook in Healthcare Education

30. In light of your response to the previous question, which do you think is a better strategy for protecting your online image?

- Abstaining from Facebook completely and not having an account at all
- Maintaining an account, so you can monitor posts that might involve you (pictures, etc.)

31. Do you think that you could benefit from guidelines relating to using social networking software in a professional manner?

- Yes
- No

32. Do you think that current guidelines at the University adequately address and define issues relating to Facebook and online professionalism for those that might be unsure?

- Yes, they are fine
- No, they should be amended to specifically address issues of online activity
- I am unfamiliar with current guidelines for professionalism and conduct
- There is no need for the University to issue guidelines on my online activity

33. Please take a moment and include any comments you might have about Facebook use by current and future healthcare professionals, your feelings about online professionalism (ways to improve it, or if it should be considered an issue at all), or any other thoughts that this survey might have provoked:

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2
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4 28 April 2013
5
6

7 Dear Richard
8

9 RE: Manuscript ID [bmjopen-2013-003013](#) entitled ""Have you seen what's on
10 Facebook?" The use of social networking software by healthcare professions students."
11

12 Many thanks for reviewing our manuscript. We enjoyed reading the comments, and
13 have responded to each in detail below. We have also uploaded a revised version of the
14 text (a 'Track Changes' version and 'Final'), along with a couple of Appendices. We
15 hope that this meets with your approval and we look forward to hearing from you again.
16
17

18 Best wishes
19

20 Dr Jonathan White
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3 Responses to Reviewers
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5 From the managing editor:
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7

8
9 ABSTRACT
10

11 Please report at least the headline response rate in the Results of the abstract (17%).
12

13 **Response:** so amended.
14

15 In the results, are you able to report response rate by course (medicine, nursing, etc)?
16
17

18 **Response:** so amended
19

20 Results: 'beneficial' - beneficial to whom?
21

22 **Response:** this point is addressed in the second clause of the sentence:
23

24 *A majority agreed that guidelines would be beneficial: 79% agreed that others would*
25 *benefit, and 62% stated they would benefit personally.*
26
27

28
29
30 Strengths and limitations section & conclusion: 'we believe we have shown...' I think you
31 need to be more tentative here, I'm afraid. We often don't consider survey work with
32 such a low response rate, for reasons of response bias and non-representativeness, but
33 the reviewers are quite positive. However, unless you can provide a stronger argument
34 you need to temper this assertion.
35
36

37 **Response:** We are in agreement, and have amended the section on Strengths and
38 Limitations accordingly:
39

40 *Strengths and limitations of this study*
41

42 *Although the survey element of this study had a relatively low response rate, it did*
43 *gather data from a large number of students training in several different health*
44 *professions, and we believe it provides an interesting snapshot of attitudes to social*
45 *networking software at our school. The low response rate to the survey means that we*
46 *cannot exclude the possibility of response bias and that we cannot easily generalize our*
47 *findings to the whole population. Given these limitations, we believe that we have*
48 *shown that use of Facebook is widespread among the healthcare students we studied,*
49 *and that we have identified areas for education policymakers to focus on.*
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54 INTRODUCTION

55 First line: 'our society'; this is pretty vague. Can you tighten this up a little with regard to
56 who you're referring to here?
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Response: So amended:

In recent years, the use of social networking websites such as Facebook, MySpace and Twitter has become ubiquitous in many western countries.

METHODS

How were the 14 interviewed students selected? Were they the only 14 who replied? How many did you invite? How were they selected? What techniques for the qualitative analysis were used? The reporting section here is a bit weak; I suggest looking at these paper for advice on what to include:

<http://intqhc.oxfordjournals.org/content/15/3/261.full>

<http://intqhc.oxfordjournals.org/content/19/6/349.abstract>

Response: Thanks for these suggestions. The relevant section is in the second paragraph of of Methods.

Convenience sampling was used for recruitment of interview subjects: participants were contacted through email, inviting voluntary participation in an interview. Students in nursing, medicine, dentistry, pharmacy, dental hygiene, speech and language pathology, occupational therapy and physical therapy were included in the invitation email distribution list and a single reminder email was sent. There were no specific exclusion criteria. Consent was obtained in person by the interviewer

How were the 14 interviewed students selected?

- An email was sent to all of the students as listed above, plus one reminder.

Were they the only 14 who replied?

- Yes

How many did you invite?

-All of them (approximately 3,900 students)

How were they selected?

- the first 14 to reply were interviewed.

That said, it's good the survey was piloted.

Para 3: sentence 4; not immediately clear if the convenience sample refers to the testing or the actual survey

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2
3 **Response:** This reference has been removed for clarity.
4
5

6
7 As per my query above, what analytical framework was used to analyse the free-text
8 responses?
9

10
11 **Response:** It was not the purpose of the interviews to generate a conceptual framework
12 to describe an underlying phenomenon. Therefore, we chose not to employ an
13 approach using a particular analytical framework – for instance, a grounded theory
14 approach was not appropriate in this case. Instead, the purpose of the interview phase
15 was to gain a broad understanding of a number of themes or areas of interest that could
16 be further explored in a larger population using an online survey. Therefore, we adopted
17 a simple thematic analysis to define themes of interest. We have amended Methods
18 accordingly.
19

20
21
22 *Interviews were audio-recorded and transcribed by a research assistant; transcripts*
23 *were then analyzed to identify common themes using a simple thematic analysis*
24 *approach.*
25
26

27 28 RESULTS

29 second sentence: '...behaviour on Facebook'? or "behaviour posted on Facebook' -
30 because drug use, etc., can't be done 'on' Facebook while breaches of privacy or
31 insulting comments can. Reword slightly?
32
33

34 **Response:** Agreed, amended to:
35 *breaches of professional behaviour posted on Facebook*
36
37

38
39
40 '44% of respondents described seeing unprofessional material' - or material they
41 considered unprofessional? (The wording of the survey would help here.)
42

43 **Response:** Agreed, amended to:
44 *44% of respondents described seeing material they considered unprofessional which*
45 *had been posted to Facebook by a colleague*
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3 Reviewer: Joanna MacDonald,
4 Associate Dean and Senior Lecturer,
5 University of Otago Wellington,
6 New Zealand.
7
8

9 I have no competing interests
10

11 Participants: It would be useful to know what proportion of the class of each discipline
12 was represented eg what proportion of the total number of medical students is
13 represented by 232?
14
15

16
17 **Response:** Agreed, this information has been added in Table 1.
18
19

20
21 Similarly, how representative is the gender balance of the total population?
22
23

24 **Response:** We consider the gender balance to be as expected given the faculties
25 studied, and have added the following in support of Table 1:
26

27 *As expected, females outnumbered males in all the faculties sampled; the proportion of*
28 *female respondents ranged from 95% in Nursing to 58% in Medicine.*
29
30

31 Method: I would like to see a copy of the interview schedule and the questionnaire
32 appended. I would also like more detail of how the qualitative analysis was carried out.
33
34

35
36 **Response:** Re: Interview schedule and questions – these have been added as
37 supplemental files as Appendices.
38
39

40 Re: analysis. It was not the purpose of the interviews to generate a conceptual
41 framework to describe an underlying phenomenon. Therefore, we chose not to employ
42 an approach using a particular analytical framework – for instance, a grounded theory
43 approach was not appropriate in this case. Instead, the purpose of the interview phase
44 was to gain a broad understanding of a number of themes or areas of interest that could
45 be further explored in a larger population using an online survey. Therefore, we adopted
46 a simple thematic analysis to define themes of interest. We have amended Methods
47 accordingly.
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50 *Interviews were audio-recorded and transcribed by a research assistant; transcripts*
51 *were then analyzed to identify common themes using a simple thematic analysis*
52 *approach.*
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3 It would be useful to see some comparison between the different disciplines, and by
4 gender.
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8 **Response:** While we agree that this would be an interesting comparison, such an
9 analysis is beyond the scope of this particular study. The purpose of this study was to
10 look at students in the health professions as a whole, not to draw comparisons between
11 individual groups. The relatively low response rate and the low number of responses in
12 some faculties makes proper comparison problematic. Comparison by gender is
13 problematic for the same reasons: it was not the intent of the study, and the number of
14 male respondents was limited.
15
16

17 The results could be summarised and tables used to present some of the data that is
18 presented as text, eg para 2 of p10 could be tabulated.
19
20

21
22 **Response:** We agree, added Table 1.
23
24
25

26 Many of the quotes do not actually illustrate the accompanying text and better examples
27 are evident in the Table in the appendix, eg the quote on p10 could more usefully
28 illustrate disrespect for patients; the 1st quote on p11 does not indicate that the student
29 does not object to the practice.
30
31
32

33 **Response:** We have tried to honour our participants as much as possible by using their
34 original words in this paper. We agree that in some cases, one quotation may shed light
35 a number of points. Our selection of some quotations for the main text and others for
36 the Table is based purely on considerations of manuscript length, and we have provided
37 both to allow readers to see the diversity of opinions among our participants.
38
39
40

41 The discussion is interesting, but the paper risks repeating previous work-analysing the
42 different health professions separately and comparing would add to the significance of
43 the study.
44
45

46 **Response:** While we agree that this would be an interesting comparison, such an
47 analysis is beyond the scope of this particular study. We think the strength of this study
48 is in looking across a large number of students in the healthcare professions at a single
49 school (232 trainee doctors, 200 trainee nurses, 82 trainee pharmacists, etc) to see
50 what issues relating to social networking software might affect them all.
51
52

53 I am uncertain how the study helps understanding the "pedagogy" of Facebook use.
54

55 **Response:** We think that it is appropriate to use the term "pedagogy" here as we are
56 considering the use of Facebook by students in the healthcare professions who are
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3 engaged in a program of learning. It is also appropriate to consider pedagogical
4 implications, as we are taking the perspective of healthcare educators trying to
5 understand how our learners are engaging with a new technology as their roles as
6 developing healthcare professionals.
7
8
9

10 There are 2 mistakes in the reference list-#31 should read "Australian" medical
11 association (not American); and #37 has the title of the article missing.
12
13

14
15 **Response:** Thanks for this. References #31 and #36 have been amended accordingly.
16 The title of reference #37 is "Podcasting: a technology, not a toy."
17
18

19 *White J, Sharma N. Podcasting: a technology, not a toy. Adv in Health Sci Educ.*
20 *2012;17:601-603*
21

22 I think this is interesting and important work and I have suggested major revision
23 only because it could be enhanced by more statistical analysis to maximise the
24 information available from this data. The word count could be significantly reduced.
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3 Reviewer: Kathleen Gray
4 Senior Research Fellow, Health Informatics
5 University of Melbourne, Australia
6
7

8 I have no competing interests.
9

10 Overall an interesting, topical and well-written paper. A few suggestions...
11

12 Intro:
13

14
15 You've used your 2nd ref to substantiate statistics which that study didn't generate but
16 rather referenced, so it would be more accurate if you cited the original sources. These
17 are:
18

19
20 70.8% of UK medical students used social networking sites (n = 212; Sandars, Homer,
21 Pell & Croker, 2008)
22

23 **Sandars, J., Homer M., Pell, G., & Croker, T. (2008). Web 2.0 and social software: The**
24 **medical student way of e-learning. Medical Teacher. DOI:**
25 **10.1080/01421590701798729**
26

27
28 64.3% of medical students at one US university had Facebook accounts (n = 501;
29 Thompson, Dawson, Ferdig, Black, Boyer, Coutts et al., 2008).
30

31 **Thompson, L. A., Dawson, K., Ferdig, R., Black, E. W., Boyer, J., Coutts, J., & Black,**
32 **N. P. (2008). The intersection of online social networking with medical professionalism.**
33 **Journal of General Internal Medicine, 23(7), 954-957.**
34
35

36
37 **Response: Thanks for this, we have amended our references accordingly.**
38

39
40
41 NB your 36th reference, to Thompson et al., is missing the title of the paper (see
42 above).
43

44
45 If you still want to refer to Gray et al., of course we'd like that. Our study provides
46 evidence that medical students aren't inherently educationally effective users of
47 Facebook, so you could use it to underscore your arguments for student guidelines.
48

49
50 **Response: Thanks for this too, we have amended the reference accordingly and cited**
51 **Gray et al in mention of the challenges associated with facebook use (the new #36) ☺**
52
53

54
55 Methods:

56 I would like to have seen the survey instrument, or at least an outline of the questions,
57
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3 to determine how they were phrased to avoid biasing the responses in favour of
4 guidelines being a good thing.
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8 **Response:** Agree, these have been added as supplemental files, Appendices 1 and 2.
9
10

11 Results:

12 In the age range 18-25 it is possible that Facebook use can change as students
13 become more mature; some of the quotes you use suggest that students have
14 tempered their Facebook activity with the benefit of hindsight. Also, professionalism
15 may be taught and learned differently in each health discipline (unless professional
16 ethics and practice subjects are taught as interdisciplinary subjects at your university?).
17
18

19 **Response:** These are interesting points, although beyond the scope of this study.
20
21
22

23 It would be good to know if you looked at whether the survey results you report can be
24 differentiated by age or by health discipline (or by gender, since you mention this factor
25 too).
26
27

28 **Response:** While we agree that these would be interesting comparisons, such analyses
29 are beyond the scope of this particular study. The purpose of this study was to look at
30 students in the health professions as a whole, not to draw comparisons between
31 individual groups. The relatively low response rate and the low number of responses in
32 some faculties makes proper comparison problematic. Comparison by age and gender
33 is problematic for the same reasons: it was not the intent of the study, and the number
34 of male respondents was limited.
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39 Discussion and conclusion:

40 93% of 692 students with a Facebook account, out of a possible 3984 students, is
41 simply not evidence of “widespread” use; I would suggest tempering this adjective.
42
43
44

45 **Response:** Agree, we have amended this to:
46
47

48 *Given these limitations, we believe that we have shown that use of Facebook is*
49 *widespread among the healthcare students we studied, and that we have identified*
50 *areas for education policymakers to focus on.*
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"Have you seen what's on Facebook?" The use of social networking software by healthcare professions students.

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Manuscripts

Title

“Have you seen what’s on Facebook?” The use of social networking software by healthcare professions students

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ABSTRACT

Objective. The use of social networking software has become ubiquitous in our society. The aim of this study was to explore the attitudes and experiences of healthcare professional students using Facebook at our school, and to determine if there is a need for development of policy to assist students with utilizing this technology during their professional education.

Design. A mixed-methods approach was employed, using semi-structured interviews to identify important themes which were further explored using an online survey. A combination of descriptive statistics and thematic analysis was used to analyse the data obtained.

Setting & Participants: Students of Medicine, Nursing, Pharmacy, Speech & Language Pathology, Occupational Therapy, Physical Therapy, Dentistry, Dental Hygiene and Medical Laboratory Science at a large North American university.

Results. 14 interviews were analysed in-depth, and 682 healthcare professions students responded to the survey, an approximate 17% response rate. 93% reported current Facebook use. Themes identified included: patterns of use and attitudes to friendship, attitudes to online privacy, breaches of professional behaviour on Facebook, and attitudes to guidelines relating to Facebook use. A majority considered posting of the following material unprofessional: use of alcohol and drugs, crime, obscenity, patient/client information, sexual content and nudity and criticism of others. 44% reported seeing such material posted by a colleague, and 27% reported posting such

1
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3 material themselves. A majority of participants agreed that guidelines for Facebook use
4
5 would be beneficial.
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8
9 **Conclusions.** Social networking software use, specifically Facebook use, was
10
11 widespread among healthcare students at our school who responded to our survey. Our
12
13 results highlight some of the challenges which can accompany the use of this new
14
15 technology and offer potential insights to help understand the pedagogy and practices
16
17 of Facebook use in this population, and to help students navigate the dilemmas
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19 associated with becoming 21st century healthcare professionals.
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Article focus

The use of social networking software has become ubiquitous in our society. Healthcare practitioners and their students have struggled to integrate this new technology with the expectations of professional behaviour.

Key messages

- Social networking software is widespread amongst healthcare students at our school. This paper highlights the challenges which accompany the use of this new technology, including the posting of unprofessional and inappropriate material online.
- We discuss the dilemma of students wanting to share information in a mixed social network in order to remain popular, while also being wary about how material shared will make them appear.
- We suggest that guidelines for the use of social networking software may help our students deal with this dilemma more effectively.

Strengths and limitations of this study

Although the survey element of this study had a relatively low response rate, it did gather data from a large number of students training in several different health professions, and we believe it provides an interesting snapshot of attitudes to social networking software at our school. The low response rate to the survey means that we cannot exclude the possibility of response bias and that we cannot easily generalize our findings to the whole population. Given these limitations, we believe that we have

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shown that use of Facebook is widespread among the healthcare students we studied,
and that we have identified areas for education policymakers to focus on.

For peer review only

INTRODUCTION

In recent years, the use of social networking websites such as Facebook, MySpace and Twitter has become ubiquitous in many western countries. At the time of writing, there are over 18.5 million Facebook users in Canada alone, and over 70% of the Canadian population possesses a Facebook account [1]. Facebook use is highly prevalent among medical students: at least 60% of medical students in the US, and over 70% of medical students in the UK are active users [2,3].

A number of authors have written that social networking software has the potential to revolutionize healthcare by increasing interaction between providers and clients and facilitating the free flow of information relating to healthcare [4]. A recent study among primary care physicians and oncologists demonstrated that a majority of those studied used social networking software to keep abreast of new developments in their field and to share knowledge [5]. A recent series of articles has called for surgeons to embrace social media as well [6].

Other authors have called for caution in healthcare providers engaging with social networking software. The software encourages users to share the events of their lives; for individuals training to enter the health professions, such sharing may be in conflict with requirements for confidentiality and professionalism of the profession for which they are training [7]. Some have suggested that Facebook will lead to an unacceptable blurring of the professional and the personal, and make it difficult to maintain proper

1
2
3 boundaries and professional principles [8,9]. Other authors have gone further and
4 suggested that it may be best for healthcare providers not to engage in social
5 networking online [10], or that Facebook use should be monitored or policed in some
6 way [11,12].
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15 This study grew out of a discussion within our medical school about our own students'
16 use of Facebook, based on a number of incidents in which we thought our students
17 could have used Facebook more appropriately. This led to a debate about how (or
18 indeed if) we should advise our students about using such social networking software.
19 We decided to focus on Facebook use instead of Twitter or MySpace, as this has been
20 shown to be the most widely-adopted form of social networking software at the moment
21 [6,13,14]. Most other studies on online social networking in healthcare education have
22 focused on medical students, but we decided to sample a larger population to obtain a
23 broad snapshot of the use of Facebook in all of our healthcare faculties at our school.
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39 The aim of this study was to explore the attitudes and experiences of healthcare
40 professional students using Facebook at our university, with the aim of determining if
41 there is a need for development of policy or guidelines to assist students with integrating
42 this new technology as they progress in their education.
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METHODS

We employed a mixed-methods approach, conducting interviews with a small number of healthcare professions students first to identify important themes related to the use of social networking software, and then developing an online survey which was administered to a larger group.

Semi-structured interviews were conducted with healthcare professions students at our university about participants' current use of social networking services. Interview questions were developed by the authors after a review of the literature (Appendix 1).

Convenience sampling was used for recruitment of interview subjects: participants were contacted through email, inviting voluntary participation in an interview. Students in nursing, medicine, dentistry, pharmacy, dental hygiene, speech and language pathology, occupational therapy and physical therapy were included in the invitation email distribution list and a single reminder email was sent. There were no specific exclusion criteria. Consent was obtained in person by the interviewer. Interviews lasted 30-45 minutes, and were designed to elicit information about participants' current use of social networking software. Interviews were audio-recorded and transcribed by a research assistant (PK) who then analysed the transcripts to identify common themes using a simple thematic analysis approach. Two other readers (JW and SR) reviewed the transcripts to cross-check the analysis and to refine the themes identified.

Consensus was reached by discussion between the three readers. Recruitment of new

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3 interview subjects was halted when data saturation was reached and no new themes
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5 emerged from new interviews. This was achieved at 14 interviews.
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10 Themes identified from interview data were used to construct an anonymous online
11 survey (Appendix 2). Items included a range of single-best-choice, Likert-scale, ranking
12 and free response items. All items were revised by testing with health professions
13 students before the survey was distributed. The survey was distributed by email to
14 students in all of the healthcare professions listed above. Participants were contacted
15 through email, inviting voluntary participation in the survey; participants who had been
16 interviewed were free to respond to the survey too.
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29 Descriptive statistics were used to describe responses to each question. Free-text
30 responses were analyzed to identify common themes and representative quotations
31 using the same readers and techniques described above for analysis of interview
32 transcripts. This study reports our findings relating to students' use of Facebook,
33 unprofessional behaviours observed online, and about the need for guidelines relating
34 to social networking software for healthcare professionals. Ethics approval was obtained
35 from the local Health Research Ethics Board.
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48 **RESULTS**

49 The study took place in fall 2011. The 14 participants who attended for interview were
50 from the following faculties: medicine: 6, nursing: 5, pharmacy: 1, physical therapy: 1,
51 dentistry: 1. We identified the following themes at interview: patterns of Facebook use,
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3 attitudes to friendship on Facebook, attitudes to online privacy, breaches of professional
4 behaviour posted on Facebook (including use of alcohol and drugs, crime, obscenity,
5 patient/client information, sexual content and nudity, criticism of others) and attitudes to
6 guidelines relating to Facebook use.
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15 A total of 682 students responded to the survey, a response rate of approximately 17%
16 (estimated total number of students: 3984). The number of respondents, response rate
17 and gender balance from each faculty are shown in Table 1. As expected, females
18 outnumbered males in all the faculties sampled. In the following section, quotations from
19 free-response items are presented to highlight particular themes identified, while
20 percentages in brackets are used to indicate the proportion of respondents to the online
21 survey who expressed agreement with a particular theme or statement observed.
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32 Additional representative quotations are presented in Table 2.
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37 93% of respondents reported having a Facebook account; 76% described checking
38 their account at least 2 times per day, with 39% checking at least 5 times a day. When
39 asked "who is on your friend list?", respondents indicated the following categories: other
40 students 96%, previous work colleagues 73%, current work colleagues 44%, previous
41 instructors 21%, current instructors 5%, previous patients/clients 2%, current
42 patients/clients 0.3% .
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53 Respondents were asked to consider the types of material that they would consider
54 unprofessional in principle if posted to Facebook (Table 3). 99% of respondents agreed
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3 that it would be unprofessional to post images or text which could be used to identify a
4 patient. 40% of respondents said it was unprofessional to post anything at all relating to
5 a patient/client, even without identifying information.
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13 • *A girl I know openly posts "quotes of the day" from patients she works with in mental*
14 *health. She does not say who said them, and they are funny, but since I work there*
15 *too, the info is identifying. I think it crosses a line.*
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22 Over 80% considered posts or images relating to the following activities unprofessional:
23 illicit drug consumption, criminal activity, overt sexual content, partial nudity and
24 condescending or superior behaviour. At least 50% considered the following
25 unprofessional: critical comments about a teacher, drunkenness/excessive drinking,
26 swearing, and obscene gestures. Less than 10% objected to posts or photos depicting
27 drinking in moderation, and to posting current relationship status.
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- 39 • *Plenty of students in my class post pictures of heavy drinking, many swear or have*
40 *inappropriate sexual innuendo in their status updates.*
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46 44% of respondents described seeing material they considered unprofessional which
47 had been posted to Facebook by a colleague (153 responses). The most common
48 specific examples given included criticism of teachers and programs (56 instances),
49 inappropriate photographs (47 instances), depictions of drunkenness (27), posts about
50 patients (21) and negative comments about patients (13). Other examples included
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3 parties attended (9), swearing (8), references to sex (7), inappropriate posts about work
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5 (5), negative comments about other professions (5) and consumption of illegal drugs
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7 (3). There were also descriptions of errors, negative comments about co-workers,
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9 inappropriate behaviour in uniform, nudity, criminal activity, obscene gestures, racist
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11 and sexist comments and pictures of a cadaver (1-2 of each).
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18 • *I know a medical student who often posts complaints about her faculty and also*
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20 *personal patient information*
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24 27% of respondents admitted to posting material which, with hindsight, they now
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26 considered unprofessional (81 responses). The most common transgressions described
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28 were posting inappropriate pictures (15 instances), swearing (13), criticizing teachers
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30 and programs (9), drinking (9), posting comments open to misinterpretation (8) and
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32 parties (5). There were 3 instances of posting sexual content, 2 posts about patients
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34 and 1 example of expressing negative views about a patient.
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41 • *I've wrote personal posts before that probably shouldn't have been posted.*
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45 44% described having material posted about them which they felt made them look
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47 unprofessional (137 examples). The vast majority of these instances related to the
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49 posting of photographs online (106); the most common areas of concern related to
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51 alcohol consumption (39) and attending parties (15); there were also examples of nudity
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53 (4), sexual material (3) and information pertaining to a relationship (1). 18% of
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3 respondents reported that the posting of such material had made them consider
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5 withdrawing from the use of social networking software.
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- 10 • *People have posted hilarious photos from parties and other events some of which*
11 *depict me as being intoxicated but once again I'm hoping that due to privacy settings*
12 *the general public cannot see these.*
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20 As a group, respondents were ambiguous about posting material on Facebook. Some
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22 students considered it intrusive that faculty should even be enquiring about their
23
24 Facebook use, as they considered this too personal a topic for discussion. Others
25
26 expressed concern that faculty's expectations around their online activities were
27
28 unreasonable. Others took the view that they should be able to post what they like as
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30 long as they could control who has access.
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- 36 • *Just because we are in a health care profession does not mean that we do not have*
37 *freedom of speech.*
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44 Students expressed the view that posting material to Facebook was associated with
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46 some risk to their current position and future prospects.
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- 50 • *I am aware that my behaviour in all domains affects my reputation, so I am*
51 *careful about who I am seen with and what I do.*
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3 Many students described censoring themselves and removing material they had posted
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5 or been tagged in previously, or requesting to have their name removed from photos
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7 posted by other users.
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- 10 • *I went through my Facebook photos and took down the photos I had posted with*
11 *me in party pictures from my first undergrad degree. If I even looked drunk or*
12 *questionable, or if the party had a funny, (but inappropriate theme) then I took*
13 *those pictures down as well. I don't generally post a lot of comments, and none*
14 *that I regret, but a picture is still worth a thousand words.*
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24 98% of respondents described having altered the privacy settings of their Facebook
25 account on at least one occasion; the reasons given for this included protection from
26 strangers 99%, not trusting Facebook 62%, risk of viewing by potential employers 52%,
27 advice from peers 30%, and advice from instructors 17%.
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- 36 • *I don't really understand the privacy settings, so I just made them strict, just in case.*
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- 39 • *I don't post anything on Facebook that could compromise me for work in any way.*
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43 Lastly, respondents were asked about the use of guidelines relating to the use of social
44 networking software in health professions education. Many were unfamiliar with existing
45 guidelines (43%); only 15% agreed that existing guidelines were adequate. A majority
46 agreed that guidelines would be beneficial: 79% agreed that others would benefit, and
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- *There are certain guidelines that I think any professional or role model should follow: no photos of inappropriate conduct (nudity, heavy drinking, sexual content, etc), patients/clients should not be added as friends or be able to view photos, confidential information remains confidential.. otherwise, if people are stupid enough to jeopardize their profession by posting something on facebook, they should deal with the consequences (losing a current or potential job, etc)*

DISCUSSION

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27 This study showed that social networking software use, specifically Facebook use, was
28 widespread among the healthcare students at our school who responded to our survey.
29 Our results highlight some of the challenges which can accompany the use of this new
30 technology and offer potential insights to help understand the pedagogy and practices
31 of Facebook use in this population, and to help students navigate the dilemmas
32 associated with becoming 21st century healthcare professionals.
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43 There was widespread agreement that posting material that can identify a patient/client
44 should be considered unprofessional, as should material relating to drugs, sex, nudity,
45 drunkenness, crime and obscenity. A majority also considered it unprofessional to post
46 critical comments about teachers/programs and posts which could be considered
47 condescending. Despite these stated understandings, nearly half of the students we
48 studied reporting seeing their colleagues posting unprofessional material on Facebook,
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3 and over a quarter reported posting such material themselves. There was a wide range
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5 of transgressions reported, including criticism of teachers/programs, posting of
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7 inappropriate photographs, drunkenness, parties and swearing.
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12 Our findings agree with other recent papers in the field. A study by Giordano &
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14 Giordano on healthcare students found that 77% of students used Facebook, and that
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16 use was inversely correlated with age [13]. This paper also showed that the main
17
18 reasons for use were to maintain personal and professional connections, and to obtain
19
20 up-to-date information. Thompson *et al* examined Facebook use in US medical students
21
22 and residents, and found that 47% had Facebook accounts, and that only one-third had
23
24 privacy settings set sufficiently high to prevent public access. A number of accounts
25
26 contained material relating to substance abuse, sexism, racism, or lack of respect to
27
28 patients [3]. A similar study on New Zealand physicians found that 65% had Facebook
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30 accounts, many of which contained public information relating to alcohol consumption,
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32 sexual orientation, and religion [15]. Similar findings have also been observed in US
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34 otolaryngology residents and British medical students [16]. In a recent study, 60% of US
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36 medical schools reported incidents relating to the use of social networking software,
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38 including breaches of patient confidentiality, profanity relating to the school, intoxication
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40 or substance abuse and nudity and sexual relationships. The majority of schools had
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42 issued a warning to the students involved, and a small number had dismissed a student
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44 over the issue [17].
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55 Our findings on student attitudes about posting unprofessional material are also
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3 supported by a study which used focus groups to explore the issue among US medical
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5 students [18]. As in our study, students generally agreed that it was unprofessional to
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7 breach patient confidentiality online, but there was less consensus about material
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9 relating to alcohol, drugs, sex and speaking poorly of others. This study also found that
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11 students expressed ambiguity about their use of Facebook, and “viewed online activity
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13 through a lens of personal risk”, considering how what they post could be used to harm
14
15 them.
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22 The types of material which our students considered problematic are congruent with
23
24 other work outside healthcare describing the five main “Facebook Follies” which
25
26 employers consider relevant when hiring new employees: negative attitudes to work,
27
28 profanity, alcohol, drugs, and sexual activity [19]. Students also appear to be aware of
29
30 the impact of their online activities, and have identified similar areas that they do not
31
32 wish employers to see including drinking and drugs, photographs from parties,
33
34 comments from friends, and comments about work [20-22].
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41 Christofides *et al* have observed that social networking software encourages people to
42
43 disclose more personal information that they would otherwise do in order to remain
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45 popular within a social network, but also generates concern about information control
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47 and privacy [23]. Inappropriate pictures, especially of parties and drinking are a
48
49 common cause of concern. As they write:
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55 *(Online) identity ... is a social product created not only by what you share, but also by*
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3 *what others share and say about you... the people who are most popular are those*
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5 *whose identity construction is most actively participated in by others... (by) limiting*
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7 *access to personal information... the individual also... potentially reduces his or her*
8
9 *popularity. [23]*
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15 We hypothesize that students are faced with a difficult dilemma: wanting to share
16
17 information in a mixed personal/professional social network in order to remain popular,
18
19 while also being wary about how the material they share will make them appear and
20
21 who will see it. Others have also described this 'balancing act' between the need to
22
23 share information and the desire to manage how one's self is presented [24]. This is a
24
25 process of trial and error, and students express regret for the negative consequences of
26
27 material posted previously [25]. We believe that this process is similar to other
28
29 processes of conforming in healthcare education which have been described elsewhere
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34 [26].
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39 Given the concerns over the use of Facebook by healthcare professions students, it is
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41 surprising to find that in a recent study, only 10% of US medical schools had a policy of
42
43 any kind relating to social networking, and only 5 of the 132 schools studied provided
44
45 advice on how students could avoid posting inappropriate content [27]. The American
46
47 Medical Association has recently issued a report on professionalism in the use of social
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49 media [28], and a number of other organizations have suggested guidelines for
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51 physicians using social networking sites [29-33], but so far there is no generally-
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6 Some have gone so far as to suggest we need to “divorce” the personal from the
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8 professional online, creating separate Facebook identities with “dual-citizenship” [34].
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10 We believe that such concerns about Facebook use by healthcare professionals may be
11
12 excessive and that social networking software is not dangerous or something to be
13
14 feared, policed, or banned [35]. Others have shown that both students and educators
15
16 are struggling to integrate this new technology into our existing practices of teaching
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18 and learning [36]. Online technologies are simply tools which are neither inherently
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20 good nor bad [3 37]; in some ways, social networking technologies act as a “mirror”
21
22 which reflects all of our activities, including some activities we would rather not show to
23
24 the world [38].
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32 In response to this study, our medical school has developed a short course in which
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34 students discuss their use of social media such as Facebook. This course includes a
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36 review of the public appearance of the medical school class on Facebook, and also
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38 provides opportunities to discuss examples of appropriate and inappropriate use of
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40 social networking software among students. There is now an increased awareness of
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42 the use of social networking software among students and teachers at our school, and
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44 our medical students’ association has also developed a set of social media guidelines
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53 Our study was limited in several areas. Although the survey element of this study had a
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55 relatively low response rate, it did gather data from a large number of students training
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7 different faculties. The low response rate to the survey means that we cannot exclude
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9 the possibility of response bias and that we cannot easily generalize our findings to the
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11 whole population. Given these limitations, we believe that we have shown that use of
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13 Facebook is widespread among the healthcare students we studied, and that we have
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15 identified areas for education policymakers to focus on.
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22 We believe that studies such as this are important in exploring and understanding the
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24 pedagogy and practices of Facebook use and help students navigate the dilemmas
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26 associated with becoming 21st century healthcare professionals.
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6 **Disclosures**
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9 *Disclaimers*

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11 None
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14 *Previous presentations*

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16 Previously presented at the 2012 Canadian Conference on Medical Education and
17 published in abstract form as:
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Table 1. Respondents to the online survey

Faculty	Number of respondents to the online survey	Approx response rate (%)	Female:male ratio
Medicine	232	33	58:42
Nursing	200	15	95:5
Pharmacy	82	16	73:27
Speech & Language Pathology	54	24	94:6
Occupational Therapy	43	11	81:19
Physical Therapy	24	5	83:17
Dentistry & Dental Hygiene	24	8	61:39
Medical Laboratory Science	23	20	78:22
Total	682	17	77:23

Table 2. Representative Quotations

Patient confidentiality	<p>Disclosing confidential information about a patient to the general public is never permissible.</p> <p>One fellow student ... described the age of the patient, gender, and exactly what injuries they sustained in detail ... she did not disclose the name of this patient, but if my Grandma had an accident and was taken to this small rural hospital last night, it would not be hard to figure out that was who she was talking about. If you want to "debrief" to your friends on a one to one level about what you saw or experienced that it is fine. But putting it up as your "status" is inappropriate and not necessary. She was doing it so that all the other non-nurses on her friends list can see what a cool job she has. When people say they had, "the worst patient ever today", or when they discuss "helped deliver a baby in the front lobby of the hospital today".... I know if that had been me I would not want someone posting it all over Facebook.</p>
Activities considered unprofessional	<p>Many students post pictures of them partying on the weekend, which could generate negative opinions about the healthcare profession because it is not the behavior expected of a professional.</p>
Unprofessional material observed from others	<p>A lot of nursing students share their frustrations of the faculty on Facebook, and will tell positive stories about their time at clinical.</p> <p>My most appalling example is photos of a peer with a cadaver that were posted on Facebook.</p>
Unprofessional material posted by self	<p>I have unprofessional pictures on Facebook, and don't see any conflict with this in my professional life as a soon to be registered nurse</p> <p>The odd time this has happened has been when I've been intoxicated.</p> <p>In my first career, around 5 years ago (when FB was relatively new), I posted on a colleagues wall asking about a client. I was asking in a caring manner, but still should not have. Lesson learned. Now I do not have work colleagues on my FB nor would I write about a client.</p> <p>Something inappropriate was said in class by a professor and I joined a thread poking fun at that professor. I did remove the post when I realized what I had done</p>
Unprofessional material affecting self	<p>I'm sure a lot of the pictures of me during my undergrad could be considered unprofessional.</p>
Freedom of speech	<p>If patients and clients have the right to have their personal lives and information kept from being disclosed, then me being a health professional - I also have a personal life. One that is enjoyed and should be able to be enjoyed freely without interference or judgment.</p>

Risk	<p>Facebook is tons of fun... but a scary place! Way too much info floating around. People can make things up, or post photos of you without your consent.</p> <p>I think one has to be very careful with Facebook, and often I don't think people realize the negative affects it can have.</p> <p>Many people can misjudge a post on a social media site or take it out of context, resulting in a false negative image for the user.</p>
Control	<p>I have no control over who snaps a picture of me doing something in my personal life and posting them on Facebook.</p> <p>You have to be squeaky clean everywhere in life, or Facebook could be used to haunt you.</p> <p>A friend posted pictures of me and some of my other friends acting silly, and I was upset that she had not earlier asked for my consent or the consent of my friends who were against the pictures being posted, so i made her remove the pictures.</p> <p>There are photos of me being silly/drunk from earlier years of my life on Facebook, but I have untagged myself. There is nothing really bad because I would never let someone take a really unprofessional picture of me.</p>
Attitudes to guidelines	<p>I firmly support the idea of social media guidelines imparted by the university and/or professional licensing body.</p> <p>Some guidelines should be in place to set a standard but definitely not a list of "Don'ts" that would restrict our freedom</p> <p>Guidelines could help by making things more concrete, though in the end, I think things are up to one's professional judgment</p>

Table 3. Types of material participants would consider unprofessional in principle if posted to Facebook

Online behaviour	Percentage classifying as 'unprofessional'
Posts that disclose information about a patient/client	99
Posts depicting illicit drug consumption	94
Petty criminal activity	91
Photos of a patient/client	91
Posts involving overt sexual content	86
Attitudes of superiority or condescending behaviour (assumed because of professional status)	73
Posts containing partial nudity	82
Obscene gestures in photos (middle finger, etc)	72
Status updates describing substantial alcohol consumption at a party	69
Pictures of an individual clearly acting drunk	68
Endorsements of a pharmaceutical or health product without a conflict of interest disclosure	58
Critical comments about a lecturer or preceptor	69
Swearing or foul language	60
Critical comments of course material, your program, faculty, or the university	49
Posts describing an interaction with a patient/client, that do not reveal any identifying information	40
Making opinionated comments about controversial issues	22
Displaying membership in online groups dealing with controversial issues	17
A picture of an individual having one alcoholic beverage	9
Displaying your current relationship status	5

Competing Interest Declaration

"All authors have completed the Unified Competing Interest form at www.icmje.org/coi_disclosure.pdf (available on request from the corresponding author) and declare that (1) [initials of relevant authors] have support from [name of company] for the submitted work; (2) [initials of relevant authors] have [no or specified] relationships with [name of companies] that might have an interest in the submitted work in the previous 3 years; (3) their spouses, partners, or children have [specified] financial relationships that may be relevant to the submitted work; and (4) [initials of relevant authors] have no [or specified] non-financial interests that may be relevant to the submitted work."

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All authors are justifiably credited with authorship, according to the authorship criteria. In detail:
Jonathan White: study conception and design, analysis and interpretation of data, revising the article, final approval of the version to be published
Paul Kirwan Wallace: data collection, analysis and interpretation of data, interviewer, input to drafts of the article, final approval of the version to be published
Krista Lai: analysis and interpretation of data, input to drafts of the article, final approval of the version to be published
Jennifer Walton: analysis and interpretation of data, input to drafts of the article, final approval of the version to be published
Shelley Ross: study conception and design, analysis and interpretation of data, revising the article, final approval of the version to be published

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Data sharing

Requests for original data should be directed to the corresponding author. Data sharing is governed by our local ethics board.

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Title

“Have you seen what’s on Facebook?” The use of social networking software by healthcare professions students

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Paul Kirwan Wallace: data collection, analysis and interpretation of data, interviewer, input to drafts of the article, final approval of the version to be published
Krista Lai: analysis and interpretation of data, input to drafts of the article, final approval of the version to be published
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Ethical Approval

Ethics approval was obtained from the University of Alberta Health Research Ethics Board (ref: 22787).

ABSTRACT

Objective. The use of social networking software has become ubiquitous in our society. The aim of this study was to explore the attitudes and experiences of healthcare professional students using Facebook at our school, and to determine if there is a need for development of policy to assist students with utilizing this technology during their professional education.

Design. A mixed-methods approach was employed, using semi-structured interviews to identify important themes which were further explored using an online survey. A combination of descriptive statistics and thematic analysis was used to analyse the data obtained.

Setting & Participants: Students of Medicine, Nursing, Pharmacy, Speech & Language Pathology, Occupational Therapy, Physical Therapy, Dentistry, Dental Hygiene and Medical Laboratory Science at a large North American university.

Results. 14 interviews were analysed in-depth, and 682 healthcare professions students responded to the survey, an approximate 17% response rate. 93% reported current Facebook use. Themes identified included: patterns of use and attitudes to friendship, attitudes to online privacy, breaches of professional behaviour on Facebook, and attitudes to guidelines relating to Facebook use. A majority considered posting of the following material unprofessional: use of alcohol and drugs, crime, obscenity, patient/client information, sexual content and nudity and criticism of others. 44% reported seeing such material posted by a colleague, and 27% reported posting such

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material themselves. A majority of participants agreed that guidelines for Facebook use would be beneficial.

Conclusions. Social networking software use, specifically Facebook use, was widespread among healthcare students at our school who responded to our survey. Our results highlight some of the challenges which can accompany the use of this new technology and offer potential insights to help understand the pedagogy and practices of Facebook use in this population, and to help students navigate the dilemmas associated with becoming 21st century healthcare professionals. This study demonstrates that the use of social networking software is widespread amongst healthcare students at our school, and highlights the challenges which accompany the use of this new technology. We believe that studies such as this are important in understanding the pedagogy and practices of Facebook use and in helping students navigate the dilemmas associated with becoming 21st-century healthcare professionals.

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9 *Article focus*

10 The use of social networking software has become ubiquitous in our society. Healthcare
11 practitioners and their students have struggled to integrate this new technology with the
12 expectations of professional behaviour.
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18 *Key messages*

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- 21 • Social networking software is widespread amongst healthcare students at our
22 school. This paper highlights the challenges which accompany the use of this new
23 technology, including the posting of unprofessional and inappropriate material
24 online.
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 - 27 • We discuss the dilemma of students wanting to share information in a mixed social
28 network in order to remain popular, while also being wary about how material shared
29 will make them appear.
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 - 32 • We suggest that guidelines for the use of social networking software may help our
33 students deal with this dilemma more effectively.
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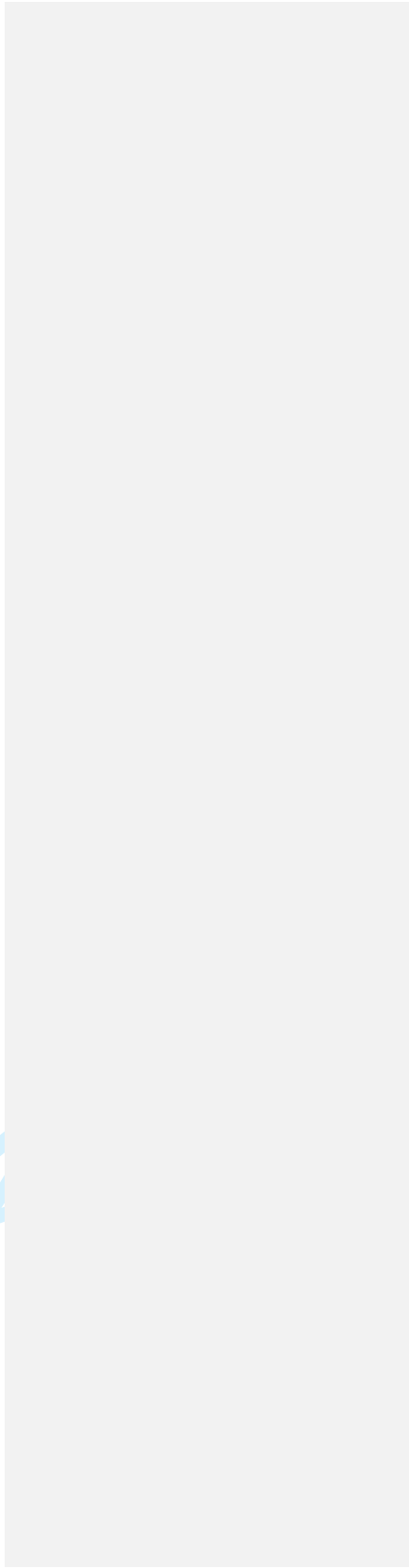
39 *Strengths and limitations of this study*

40 Although the survey element of this study had a relatively low response rate, it did
41 gather data from a large number of students training in several different health
42 professions, and we believe it provides an interesting snapshot of attitudes to social
43 networking software at our school. The low response rate to the survey means that we
44 cannot exclude the possibility of response bias and that we cannot easily generalize our
45 findings to the whole population. Given these limitations, we believe that we have
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shown that use of Facebook is widespread among the healthcare students we studied,
and that we have identified areas for education policymakers to focus on.

For peer review only



INTRODUCTION

In recent years, the use of social networking websites such as Facebook, MySpace and Twitter has become ubiquitous in many western countries. At the time of writing, there are over 18.5 million Facebook users in Canada alone, and over 70% of the Canadian population possesses a Facebook account [1]. Facebook use is highly prevalent among medical students: at least 60% of medical students in the US, and over 70% of medical students in the UK are active users [2,3].

A number of authors have written that social networking software has the potential to revolutionize healthcare by increasing interaction between providers and clients and facilitating the free flow of information relating to healthcare [4]. A recent study among primary care physicians and oncologists demonstrated that a majority of those studied used social networking software to keep abreast of new developments in their field and to share knowledge [5]. A recent series of articles has called for surgeons to embrace social media as well [6].

Other authors have called for caution in healthcare providers engaging with social networking software. The software encourages users to share the events of their lives; for individuals training to enter the health professions, such sharing may be in conflict with requirements for confidentiality and professionalism of the profession for which they are training [7]. Some have suggested that Facebook will lead to an unacceptable blurring of the professional and the personal, and make it difficult to maintain proper

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9 boundaries and professional principles [8,9]. Other authors have gone further and
10 suggested that it may be best for healthcare providers not to engage in social
11 networking online [10], or that Facebook use should be monitored or policed in some
12 way [11,12].
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18 This study grew out of a discussion within our medical school about our own students'
19 use of Facebook, based on a number of incidents in which we thought our students
20 could have used Facebook more appropriately. This led to a debate about how (or
21 indeed if) we should advise our students about using such social networking software.
22
23 We decided to focus on Facebook use instead of Twitter or MySpace, as this has been
24 shown to be the most widely-adopted form of social networking software at the moment
25 [6,13,14]. Most other studies on online social networking in healthcare education have
26 focused on medical students, but we decided to sample a larger population to obtain a
27 broad snapshot of the use of Facebook in all of our healthcare faculties at our school.
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37 The aim of this study was to explore the attitudes and experiences of healthcare
38 professional students using Facebook at our university, with the aim of determining if
39 there is a need for development of policy or guidelines to assist students with integrating
40 this new technology as they progress in their education.
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METHODS

We employed a mixed-methods approach, conducting interviews with a small number of healthcare professions students first to identify important themes related to the use of social networking software, and then developing an online survey which was administered to a larger group.

Semi-structured interviews were conducted with 44 healthcare professions students at our university about participants' current use of social networking services. Interview questions were developed by the authors after a review of the literature (Appendix 1).

Convenience sampling was used for recruitment of interview subjects: participants were contacted through email, inviting voluntary participation in an interview. Students in nursing, medicine, dentistry, pharmacy, dental hygiene, speech and language pathology, occupational therapy and physical therapy were included in the invitation email distribution list and a single reminder email was sent. There were no specific exclusion criteria. Consent was obtained in person by the interviewer. Interviews lasted 30-45 minutes, and were designed to elicit information about participants' current use of social networking software. Interviews were audio-recorded and transcribed by a

research assistant (PK) who then analysed the transcripts ~~were then analyzed~~ to identify common themes using a simple thematic analysis approach. Two other readers (JW and SR) reviewed the transcripts to cross-check the analysis and to refine the themes identified. Consensus was reached by discussion between the three readers.

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Recruitment of new interview subjects was halted when data saturation was reached and no new themes emerged from new interviews. This was achieved at 14 interviews.

Themes identified from interview data were used to construct an anonymous online survey (Appendix 2). Items included a range of single-best-choice, Likert-scale, ranking and free response items. All items were revised by testing with health professions students before the survey was distributed. The survey was distributed by email to students in all of the healthcare professions listed above. Participants were contacted through email, inviting voluntary participation in the survey; participants who had been interviewed were free to respond to the survey too.

Descriptive statistics were used to describe responses to each question. Free-text responses were analyzed to identify common themes and representative quotations using the same readers and techniques described above for analysis of interview transcripts. This study reports our findings relating to students' use of Facebook, unprofessional behaviours observed online, and about the need for guidelines relating to social networking software for healthcare professionals. Ethics approval was obtained from the local Health Research Ethics Board.

RESULTS

The study took place in fall 2011. The 14 participants who attended for interview were from the following faculties: medicine: 6, nursing: 5, pharmacy: 1, physical therapy: 1, dentistry: 1. We identified the following themes at interview: patterns of Facebook use,

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9 attitudes to friendship on Facebook, attitudes to online privacy, breaches of professional
10 behaviour posted on Facebook (including use of alcohol and drugs, crime, obscenity,
11 patient/client information, sexual content and nudity, criticism of others) and attitudes to
12 guidelines relating to Facebook use.
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18 A total of 682 students responded to the survey, a response rate of approximately 17%
19 (estimated total number of students: 3984). The number of respondents, response rate
20 and gender balance from each faculty are shown in Table 1. As expected, females
21 outnumbered males in all the faculties sampled. In the following section, quotations from
22 free-response items are presented to highlight particular themes identified, while
23 percentages in brackets are used to indicate the proportion of respondents to the online
24 survey who expressed agreement with a particular theme or statement observed.
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31 Additional representative quotations are presented in Table 2.
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35 93% of respondents reported having a Facebook account; 76% described checking
36 their account at least 2 times per day, with 39% checking at least 5 times a day. When
37 asked "who is on your friend list?", respondents indicated the following categories: other
38 students 96%, previous work colleagues 73%, current work colleagues 44%, previous
39 instructors 21%, current instructors 5%, previous patients/clients 2%, current
40 patients/clients 0.3% .
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48 Respondents were asked to consider the types of material that they would consider
49 unprofessional in principle if posted to Facebook (Table 3). 99% of respondents agreed
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9 that it would be unprofessional to post images or text which could be used to identify a
10 patient. 40% of respondents said it was unprofessional to post anything at all relating to
11 a patient/client, even without identifying information.
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16 • *A girl I know openly posts "quotes of the day" from patients she works with in mental*
17 *health. She does not say who said them, and they are funny, but since I work there*
18 *too, the info is identifying. I think it crosses a line.*
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24 Over 80% considered posts or images relating to the following activities unprofessional:
25 illicit drug consumption, criminal activity, overt sexual content, partial nudity and
26 condescending or superior behaviour. At least 50% considered the following
27 unprofessional: critical comments about a teacher, drunkenness/excessive drinking,
28 swearing, and obscene gestures. Less than 10% objected to posts or photos depicting
29 drinking in moderation, and to posting current relationship status.
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37 • *Plenty of students in my class post pictures of heavy drinking, many swear or have*
38 *inappropriate sexual innuendo in their status updates.*
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43 44% of respondents described seeing material they considered unprofessional which
44 had been posted to Facebook by a colleague (153 responses). The most common
45 specific examples given included criticism of teachers and programs (56 instances),
46 inappropriate photographs (47 instances), depictions of drunkenness (27), posts about
47 patients (21) and negative comments about patients (13). Other examples included
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9 parties attended (9), swearing (8), references to sex (7), inappropriate posts about work
10 (5), negative comments about other professions (5) and consumption of illegal drugs
11 (3). There were also descriptions of errors, negative comments about co-workers,
12 inappropriate behaviour in uniform, nudity, criminal activity, obscene gestures, racist
13 and sexist comments and pictures of a cadaver (1-2 of each).
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- 20 • *I know a medical student who often posts complaints about her faculty and also*
21 *personal patient information*
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26 27% of respondents admitted to posting material which, with hindsight, they now
27 considered unprofessional (81 responses). The most common transgressions described
28 were posting inappropriate pictures (15 instances), swearing (13), criticizing teachers
29 and programs (9), drinking (9), posting comments open to misinterpretation (8) and
30 parties (5). There were 3 instances of posting sexual content, 2 posts about patients
31 and 1 example of expressing negative views about a patient.
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- 39 • *I've wrote personal posts before that probably shouldn't have been posted.*
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43 44% described having material posted about them which they felt made them look
44 unprofessional (137 examples). The vast majority of these instances related to the
45 posting of photographs online (106); the most common areas of concern related to
46 alcohol consumption (39) and attending parties (15); there were also examples of nudity
47 (4), sexual material (3) and information pertaining to a relationship (1). 18% of
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respondents reported that the posting of such material had made them consider withdrawing from the use of social networking software.

- *People have posted hilarious photos from parties and other events some of which depict me as being intoxicated but once again I'm hoping that due to privacy settings the general public cannot see these.*

As a group, respondents were ambiguous about posting material on Facebook. Some students considered it intrusive that faculty should even be enquiring about their Facebook use, as they considered this too personal a topic for discussion. Others expressed concern that faculty's expectations around their online activities were unreasonable. Others took the view that they should be able to post what they like as long as they could control who has access.

- *Just because we are in a health care profession does not mean that we do not have freedom of speech.*

Students expressed the view that posting material to Facebook was associated with some risk to their current position and future prospects.

- *I am aware that my behaviour in all domains affects my reputation, so I am careful about who I am seen with and what I do.*

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9 Many students described censoring themselves and removing material they had posted
10 or been tagged in previously, or requesting to have their name removed from photos
11 posted by other users.
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14 • *I went through my Facebook photos and took down the photos I had posted with*
15 *me in party pictures from my first undergrad degree. If I even looked drunk or*
16 *questionable, or if the party had a funny, (but inappropriate theme) then I took*
17 *those pictures down as well. I don't generally post a lot of comments, and none*
18 *that I regret, but a picture is still worth a thousand words.*
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26 98% of respondents described having altered the privacy settings of their Facebook
27 account on at least one occasion; the reasons given for this included protection from
28 strangers 99%, not trusting Facebook 62%, risk of viewing by potential employers 52%,
29 advice from peers 30%, and advice from instructors 17%.
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35 • *I don't really understand the privacy settings, so I just made them strict, just in case.*
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37 • *I don't post anything on Facebook that could compromise me for work in any way.*
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41 Lastly, respondents were asked about the use of guidelines relating to the use of social
42 networking software in health professions education. Many were unfamiliar with existing
43 guidelines (43%); only 15% agreed that existing guidelines were adequate. A majority
44 agreed that guidelines would be beneficial: 79% agreed that others would benefit, and
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49 62% stated they would benefit personally.
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- 9 • *There are certain guidelines that I think any professional or role model should follow:*
10 *no photos of inappropriate conduct (nudity, heavy drinking, sexual content, etc),*
11 *patients/clients should not be added as friends or be able to view photos,*
12 *confidential information remains confidential.. otherwise, if people are stupid enough*
13 *to jeopardize their profession by posting something on facebook, they should deal*
14 *with the consequences (losing a current or potential job, etc)*
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24 DISCUSSION

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28 This study showed that social networking software use, specifically Facebook use, was
29 widespread among the healthcare students at our school who responded to our survey.
30 Our results highlight some of the challenges which can accompany the use of this new
31 technology and offer potential insights to help understand the pedagogy and practices
32 of Facebook use in this population, and to help students navigate the dilemmas
33 associated with becoming 21st century healthcare professionals.

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39 ~~This study demonstrates that the use of social networking software is widespread~~
40 ~~amongst students in the healthcare professions at our university and highlights some of~~
41 ~~the dilemmas which accompany the use of this new technology.~~
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47 There was widespread agreement that posting material that can identify a patient/client
48 should be considered unprofessional, as should material relating to drugs, sex, nudity,
49 drunkenness, crime and obscenity. A majority also considered it unprofessional to post
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9 critical comments about teachers/programs and posts which could be considered
10 condescending. Despite these stated understandings, nearly half of the students we
11 studied reporting seeing their colleagues posting unprofessional material on Facebook,
12 and over a quarter reported posting such material themselves. There was a wide range
13 of transgressions reported, including criticism of teachers/programs, posting of
14 inappropriate photographs, drunkenness, parties and swearing.
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22 Our findings agree with other recent papers in the field. A study by Giordano &
23 Giordano on healthcare students found that 77% of students used Facebook, and that
24 use was inversely correlated with age [13]. This paper also showed that the main
25 reasons for use were to maintain personal and professional connections, and to obtain
26 up-to-date information. Thompson *et al* examined Facebook use in US medical students
27 and residents, and found that 47% had Facebook accounts, and that only one-third had
28 privacy settings set sufficiently high to prevent public access. A number of accounts
29 contained material relating to substance abuse, sexism, racism, or lack of respect to
30 patients [3]. A similar study on New Zealand physicians found that 65% had Facebook
31 accounts, many of which contained public information relating to alcohol consumption,
32 sexual orientation, and religion [15]. Similar findings have also been observed in US
33 otolaryngology residents and British medical students [16]. In a recent study, 60% of US
34 medical schools reported incidents relating to the use of social networking software,
35 including breaches of patient confidentiality, profanity relating to the school, intoxication
36 or substance abuse and nudity and sexual relationships. The majority of schools had
37 issued a warning to the students involved, and a small number had dismissed a student
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over the issue [17].

Our findings on student attitudes about posting unprofessional material are also supported by a study which used focus groups to explore the issue among US medical students [18]. As in our study, students generally agreed that it was unprofessional to breach patient confidentiality online, but there was less consensus about material relating to alcohol, drugs, sex and speaking poorly of others. This study also found that students expressed ambiguity about their use of Facebook, and “viewed online activity through a lens of personal risk”, considering how what they post could be used to harm them.

The types of material which our students considered problematic are congruent with other work outside healthcare describing the five main “Facebook Follies” which employers consider relevant when hiring new employees: negative attitudes to work, profanity, alcohol, drugs, and sexual activity [19]. Students also appear to be aware of the impact of their online activities, and have identified similar areas that they do not wish employers to see including drinking and drugs, photographs from parties, comments from friends, and comments about work [20-22].

Christofides *et al* have observed that social networking software encourages people to disclose more personal information than they would otherwise do in order to remain popular within a social network, but also generates concern about information control and privacy [23]. Inappropriate pictures, especially of parties and drinking are a

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9 common cause of concern. As they write:

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12 *(Online) identity ... is a social product created not only by what you share, but also by*
13 *what others share and say about you... the people who are most popular are those*
14 *whose identity construction is most actively participated in by others... (by) limiting*
15 *access to personal information... the individual also... potentially reduces his or her*
16 *popularity. [23]*
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24 We hypothesize that students are faced with a difficult dilemma: wanting to share
25 information in a mixed personal/professional social network in order to remain popular,
26 while also being wary about how the material they share will make them appear and
27 who will see it. Others have also described this 'balancing act' between the need to
28 share information and the desire to manage how one's self is presented [24]. This is a
29 process of trial and error, and students express regret for the negative consequences of
30 material posted previously [25]. We believe that this process is similar to other
31 processes of conforming in healthcare education which have been described elsewhere
32 [26].
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43 Given the concerns over the use of Facebook by healthcare professions students, it is
44 surprising to find that in a recent study, only 10% of US medical schools had a policy of
45 any kind relating to social networking, and only 5 of the 132 schools studied provided
46 advice on how students could avoid posting inappropriate content [27]. The American
47 Medical Association has recently issued a report on professionalism in the use of social
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media [28], and a number of other organizations have suggested guidelines for physicians using social networking sites [29-33], but so far there is no generally-accepted policy for students of the health professions.

Some have gone so far as to suggest we need to “divorce” the personal from the professional online, creating separate Facebook identities with “dual-citizenship” [34]. We believe that such concerns about Facebook use by healthcare professionals may be excessive and that social networking software is not dangerous or something to be feared, policed, or banned [35]. Others have shown that both students and educators are struggling to integrate this new technology into our existing practices of teaching and learning [36]. Online technologies are simply tools which are neither inherently good nor bad [3 37]; in some ways, social networking technologies act as a “mirror” which reflects all of our activities, including some activities we would rather not show to the world [38].

[In response to this study, our medical school has developed a short course in which students discuss their use of social media such as Facebook. This course includes a review of the public appearance of the medical school class on Facebook, and also provides opportunities to discuss examples of appropriate and inappropriate use of social networking software among students. There is now an increased awareness of the use of social networking software among students and teachers at our school, and our medical students' association has also developed a set of social media guidelines for their members.](#)

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11 Our study was limited in several areas. Although the survey element of this study had a
12 relatively low response rate, it did gather data from a large number of students training
13 in several different health professions, and we believe it provides an interesting
14 snapshot of attitudes to social networking software at our school across a number of
15 different faculties. The low response rate to the survey means that we cannot exclude
16 the possibility of response bias and that we cannot easily generalize our findings to the
17 whole population. Given these limitations, we believe that we have shown that use of
18 Facebook is widespread among the healthcare students we studied, and that we have
19 identified areas for education policymakers to focus on.
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29 We believe that studies such as this are important in exploring and understanding the
30 pedagogy and practices of Facebook use and help students navigate the dilemmas
31 associated with becoming 21st century healthcare professionals.
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Disclosures

Disclaimers

None

Previous presentations

Previously presented at the 2012 Canadian Conference on Medical Education and published in abstract form as:

Facebook Use By Healthcare Students And Faculty: Do We Need Guidelines For Online Professionalism? P Kirwan, J White, S Ross. *Medical Education* 2012; 46 (Suppl. 1): 53

Table 1. Respondents to the online survey

Faculty	Number of respondents to the online survey	Approx response rate (%)	Female:male ratio
Medicine	232	33	58:42
Nursing	200	15	95:5
Pharmacy	82	16	73:27
Speech & Language Pathology	54	24	94:6
Occupational Therapy	43	11	81:19
Physical Therapy	24	5	83:17
Dentistry & Dental Hygiene	24	8	61:39
Medical Laboratory Science	23	20	78:22
Total	682	17	77:23

Table 2. Representative Quotations

Patient confidentiality	<p>Disclosing confidential information about a patient to the general public is never permissible.</p> <p>One fellow student ... described the age of the patient, gender, and exactly what injuries they sustained in detail ... she did not disclose the name of this patient, but if my Grandma had an accident and was taken to this small rural hospital last night, it would not be hard to figure out that was who she was talking about. If you want to "debrief" to your friends on a one to one level about what you saw or experienced that it is fine. But putting it up as your "status" is inappropriate and not necessary. She was doing it so that all the other non-nurses on her friends list can see what a cool job she has. When people say they had, "the worst patient ever today", or when they discuss "helped deliver a baby in the front lobby of the hospital today".... I know if that had been me I would not want someone posting it all over Facebook.</p>
Activities considered unprofessional	<p>Many students post pictures of them partying on the weekend, which could generate negative opinions about the healthcare profession because it is not the behavior expected of a professional.</p>
Unprofessional material observed from others	<p>A lot of nursing students share their frustrations of the faculty on Facebook, and will tell positive stories about their time at clinical.</p> <p>My most appalling example is photos of a peer with a cadaver that were posted on Facebook.</p>
Unprofessional material posted by self	<p>I have unprofessional pictures on Facebook, and don't see any conflict with this in my professional life as a soon to be registered nurse</p> <p>The odd time this has happened has been when I've been intoxicated.</p> <p>In my first career, around 5 years ago (when FB was relatively new), I posted on a colleagues wall asking about a client. I was asking in a caring manner, but still should not have. Lesson learned. Now I do not have work colleagues on my FB nor would I write about a client.</p> <p>Something inappropriate was said in class by a professor and I joined a thread poking fun at that professor. I did remove the post when I realized what I had done</p>
Unprofessional material affecting self	<p>I'm sure a lot of the pictures of me during my undergrad could be considered unprofessional.</p>
Freedom of speech	<p>If patients and clients have the right to have their personal lives and information kept from being disclosed, then me being a health professional - I also have a personal life. One that is enjoyed and should be able to be enjoyed freely without interference or judgment.</p>

Risk	<p>Facebook is tons of fun... but a scary place! Way too much info floating around. People can make things up, or post photos of you without your consent.</p> <p>I think one has to be very careful with Facebook, and often I don't think people realize the negative affects it can have.</p> <p>Many people can misjudge a post on a social media site or take it out of context, resulting in a false negative image for the user.</p>
Control	<p>I have no control over who snaps a picture of me doing something in my personal life and posting them on Facebook.</p> <p>You have to be squeaky clean everywhere in life, or Facebook could be used to haunt you.</p> <p>A friend posted pictures of me and some of my other friends acting silly, and I was upset that she had not earlier asked for my consent or the consent of my friends who were against the pictures being posted, so i made her remove the pictures.</p> <p>There are photos of me being silly/drunk from earlier years of my life on Facebook, but I have untagged myself. There is nothing really bad because I would never let someone take a really unprofessional picture of me.</p>
Attitudes to guidelines	<p>I firmly support the idea of social media guidelines imparted by the university and/or professional licensing body.</p> <p>Some guidelines should be in place to set a standard but definitely not a list of "Don'ts" that would restrict our freedom</p> <p>Guidelines could help by making things more concrete, though in the end, I think things are up to one's professional judgment</p>

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Table 3. Types of material participants would consider unprofessional in principle if posted to Facebook

Online behaviour	Percentage classifying as 'unprofessional'
Posts that disclose information about a patient/client	99
Posts depicting illicit drug consumption	94
Petty criminal activity	91
Photos of a patient/client	91
Posts involving overt sexual content	86
Attitudes of superiority or condescending behaviour (assumed because of professional status)	73
Posts containing partial nudity	82
Obscene gestures in photos (middle finger, etc)	72
Status updates describing substantial alcohol consumption at a party	69
Pictures of an individual clearly acting drunk	68
Endorsements of a pharmaceutical or health product without a conflict of interest disclosure	58
Critical comments about a lecturer or preceptor	69
Swearing or foul language	60
Critical comments of course material, your program, faculty, or the university	49
Posts describing an interaction with a patient/client, that do not reveal any identifying information	40
Making opinionated comments about controversial issues	22
Displaying membership in online groups dealing with controversial issues	17
A picture of an individual having one alcoholic beverage	9
Displaying your current relationship status	5

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Interview script

“Are You on Facebook?”

First of all, thank you for agreeing to meet with me in order to take part in this study! Just to remind you, this study deals with the social networking site Facebook, and the role that it currently plays in healthcare professions education.

We have asked to meet with you in order to conduct an in-person interview, so that we can better understand your experiences as a user of Facebook, as well as your beliefs and attitudes surrounding its use in relation to the healthcare professions. We hope to learn about any factors that may have led you to begin, discontinue or refuse ever to use Facebook as a student or medical professional, and also understand any benefits or drawbacks that you might believe exist for those using this popular social networking site.

I also want to make you aware that this interview will be recorded and transcribed so that we are as accurate as possible in our data collection; however, your anonymity will be protected and your identity will in no way be associated with any of the answers that you provide.

Before we begin, please take your time to read the following information sheet and sign the consent form. By consenting to participate in this study you are allowing us to record and transcribe this interview as well as to analyze and, in the future, both publish and present the data we gather today.

Thank you.

Alright, let's begin:

- 1) Do you currently or have you ever had a personal Facebook account?
- 2) How often do you log on to Facebook? (Number of times per day, week, month, etc)
- 3) What would you say is the main purpose of your Facebook use (personal relationships, work relationships, staying in contact with family, sharing of educational information, etc.)?
- 4) Can you tell me what sorts of people are on your friends list on Facebook?
 - Family
 - Personal friends
 - Work colleagues
 - Fellow students
 - Teachers
 - Patients
 - Online friends I have never met in person
- 5) Do you think Facebook use has provided any benefits or opportunities to you as a student or professional other than personal/social communication?

Can you elaborate on that? (ask, if you feel it's necessary)

- 6) What about any motivating factors to use Facebook for educational purposes?

(Suggestions to use as prompts, possible examples: Inadequate classroom instruction, structure of teaching and assessment (piecing together individual work for a common exam), learning in different educational settings, tutorial group learning, etc.)

7) As a student/teacher, have you ever engaged with one of your teachers/students on Facebook?

8) As a student/teacher, have you ever engaged with other students or colleagues *at another university* through social networking sites? What was the nature or purpose of this communication?

9) As a student engaged in some kind of educational group on Facebook, have you or your fellow members ever invited or sought to involve any of your instructors? Why or why not?

10) As an instructor or preceptor in the medical field, have you ever sought to create a space for sharing information using social networking tools? Why or why not? Have students ever approached you about this matter or invited you to join them in some way on these sites?

11) What do you believe are some dangers that exist for professional members of the community using these social media websites?

12) Do you think that there are many people that agree with your opinions on Facebook use within the medical community or the student body? What about those who might oppose your views? Are there any particular demographics you think would support/oppose you?

13) In regards to any dangers or negative aspects you may have mentioned for Facebook use by healthcare professionals, do you feel the current guidelines or recommendations to protect users is adequate? If not, what kind of changes would you recommend?

14) What types of things would you recommend to include in a set of regulations that govern the appropriate use of sites like Facebook by students and medical professionals alike?

15) Do you have any other additional comments regarding your experiences as a user of Facebook?

Thank you once again for taking part in this study. Your responses to the questions I asked today will be invaluable to our ongoing research. As mentioned before, if you have any additional questions regarding the study please contact Dr. White or Dr. Ross.

Have a great day!

Facebook in Healthcare Education

Welcome Page and Consent

Facebook in Healthcare Education

Online Survey

For All Students, Instructors and Faculty Members in Health Professions Education at the University of Alberta

Thank you for taking the time to log on and complete this online survey!

This study deals with the social networking site Facebook, and the role that it currently plays in healthcare education.

The purpose of creating this survey was so that we can better understand your experiences as a user of Facebook, as well as your beliefs and attitudes surrounding its use in relation to the healthcare professions. We hope to learn about any factors that may have led you to begin, discontinue or refuse ever to use Facebook as a student or medical professional, and also understand any benefits or drawbacks that you might believe exist for those using this popular social networking site.

Please understand that by continuing beyond this point and completing this brief survey, you are acknowledging that you are aware your answers will be analyzed and, perhaps in the future, published as a way of presenting our findings. However, you can be certain that your anonymity will be protected and your identity will in no way be associated with any of the answers that you provide in this survey.

Thank you.

Section I: Demographic Information

1. What is your age?

- 18-20
- 21-25
- 26-30
- 31-40
- 41-50
- 51-60
- Over 60

2. Sex:

- Male
- Female

Facebook in Healthcare Education

3. What is your role/ title at the University?

- Student
- Professor/ lecturer
- Administrator
- Faculty assistant

Other (please specify)

4. What program are you affiliated with?

- Nursing
- Medicine
- Dentistry
- Dental Hygiene
- Pharmacy
- Medical Laboratory Science
- Occupational Therapy
- Physical Therapy
- Speech Language Pathology

Other (please specify)

Section II: Facebook Use

5. Do you currently have a Facebook account?

- Yes
- No

Section II: Facebook Use Continued

Facebook in Healthcare Education

6. Approximately how often do you check your Facebook account?

- More than 10 times/day
- 5-10 times/day
- 2-4 times a day
- Once/day
- 2-3 times/week
- Once/week or less

7. How do you most often access Facebook?

- On a desktop computer
- On a laptop
- On my phone
- Other (please specify)

8. When you check your account, how long do you spend each time?

- 0-5 minutes
- 5-10 minutes
- 10-30 minutes
- 30-60 minutes
- More than 1 hour

9. How selective are you in accepting 'Friend Requests' on Facebook?

- I only accept requests from people I know well and family members
- I accept requests from people I have met in person a few times
- I accept requests from people I have only met once
- If I recognize their name or share a few mutual friends, I will accept them, even though we have never met in person
- I accept friend requests from people I have never met in person and don't really know

Facebook in Healthcare Education

10. At the moment, who is on your Friends list on Facebook? (Please check all that apply)

- Undergraduate students
- Residents/postgraduate trainees
- Current instructors
- Previous instructors
- Current Work Colleagues
- Previous Work Colleagues
- Current Patients/Clients
- Previous Patients/Clients

11. If a patient/client sent you a friend request, would you accept?

- Yes
- No
- Maybe (please explain)

12. People use Facebook for many different purposes. To what extent do you use Facebook for the following purposes?

	Never	Rarely	Sometimes	Often
Personal communication with friends and family	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Sharing educational information or resources	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Planning or learning about upcoming events	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Surfing for entertainment	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Playing online games	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Raising awareness/ fundraising	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Any other main uses:

13. Consider any contact you have with peers or colleagues who are AT OTHER UNIVERSITIES through Facebook. Which of the following statements BEST describes the nature of that communication?

- It is entirely personal/social
- It is mostly personal/social. Sometimes we will compare parts of our programs, or discuss what we are currently learning, but it is rare.
- In addition to some personal/social communication, I frequently use it to do things such as: share links to good academic resources, discuss research findings, obtain input on my current academic assignments/endeavors, etc.

Facebook in Healthcare Education

Section III: Privacy Settings

14. Have you ever altered your personal privacy settings?

- Yes
- No

15. Which of the following played a role in your decision to change your personal privacy settings? (Choose all that apply):

- Protecting your personal information from strangers
- Risk of your account being viewed by an admissions committee or potential employers
- Served in a position where you were viewed as a role model (eg. Residence assistant, preceptor, volunteering with a youth mentorship program, etc.)
- Advice from peers
- Recommendation from an instructor, tutor, professor or mentor
- Not trusting Facebook's use of posted information

Other (please specify)

Section IV: Facebook in Education and Health

16. Findings from research suggest that people have differing opinions on issues surrounding Facebook and its use within education, healthcare, and personal contexts. Given this finding, which of the following would you say plays the LARGEST role in creating these differing views?

- Profession (including being in training for a specific profession)
- Country of origin
- Age
- Personality type (introvert or extrovert)
- Sex

Other (please specify)

Facebook in Healthcare Education

17. To what extent do you agree/disagree with the following statements about the use of Facebook in education?

	Strongly Disagree	Disagree	Agree	Strongly Agree
I think that Facebook is useful in education	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Our university should try harder to incorporate Facebook into all its courses	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Facebook has some features that could be useful in education, but I am unsure how well it would work	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I enjoy using Facebook for its personal and social benefits, but I try to avoid dealing with school or work-related content while using it. They should be separate	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
There is no need to incorporate Facebook in education. I believe our current online systems are more than adequate	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

18. To what extent do you agree/disagree with the following statements about the potential use of Facebook in healthcare?

	Strongly Disagree	Disagree	Agree	Strongly Agree
Facebook would be useful for online consultations	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Facebook would be useful for scheduling of appointments	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Facebook would be useful for filling prescriptions	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Facebook would be useful to provide forums being mediated by healthcare professionals to answer questions	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Facebook would be useful to provide opportunities for patients/clients with similar illnesses or conditions to connect for support, etc.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Section V: Online Professionalism

19. To what extent do you agree/disagree with the following statements about professionalism in the healthcare field?

	Strongly Disagree	Disagree	Agree	Strongly Agree
I have a good understanding of what professionalism is, and what is expected of me as a current or future professional	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I fully agree with the expectations of professionalism, and consciously strive to abide by them in all areas of my life	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
A high level of professionalism should be expected of healthcare students from the very beginning of their time as a student	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
There should be some leniency in regards to small incidents of unprofessional conduct in the early years of a professional program	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Facebook in Healthcare Education

20. Current literature suggests that professionalism may be dependent on context or the environment. In which of the following environments do you believe it is reasonable to expect healthcare students to act professionally AT ALL TIMES?

(Check all that apply)

- At the University (eg. In lecture halls, tutorial rooms)
- In the clinic/workplace/hospital
- During free time spent in view of the public

If you left any of the above choices unchecked, please explain why:

21. To what extent do you agree/disagree with the following statements about standards of professionalism relating to online activity?

	Strongly Disagree	Disagree	Agree	Strongly Agree
Professionalism is as important in online activity as it is in traditional environments	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
It is not always entirely possible to maintain professionalism in online activity	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
People have the opportunity to post pictures and document aspects of professionals' lives that would otherwise remain private	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Social media has removed protection for professionals from the public	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Professionals are never free to let their guard down	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The risks of social networking software far outweigh the benefits and its use by health professionals should be DISCOURAGED	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The risks of social networking software far outweigh the benefits and its use by health professionals should be BANNED	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I don't think my online activity has a bearing on who I am as a professional	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I should be able to do whatever I want online	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The university has no business interfering in my online activity	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Facebook in Healthcare Education

22. Consider the following list of possible negative outcomes resulting from unprofessional behaviour online. Please rank the items in the list from those you would personally find most concerning (1), to least concerning (5).

Rank (1-5) (Choose each number only once)

People having the opportunity to make inaccurate judgments about you solely based on posted content

The possibility that your behavior could affect the image of others in your profession

Not being hired by an employer or being accepted to a program because of information discovered about you online

The possibility of losing a position you already have (as an employee or student) because of information discovered about you online

Having privileged information about a patient/client distributed online without their consent

23. Do you believe the debate about online professionalism is more important or less important to other professions than your own?

- I believe this issue is more important for my faculty in particular, compared with some other health professions
- I believe this issue is equally important across all health professions faculties
- I believe this issue is more relevant in certain other health faculties than my own

(please explain, or name those faculties):

Online Professionalism contd.

Facebook in Healthcare Education

24. Which of the following types of material (if posted on Facebook) would you consider to be unprofessional? (Choose all that apply):

- A picture of an individual having one alcoholic beverage
- Pictures of an individual clearly acting drunk
- Status updates describing substantial alcohol consumption at a party
- Posts depicting illicit drug consumption
- Posts that disclose information about a patient/client
- Photos of a patient/client
- Posts describing an interaction with a patient/client, that do not reveal any identifying information
- Swearing or foul language
- Obscene gestures in photos (middle finger, etc)
- Petty criminal activity
- Endorsements of a pharmaceutical or health product without a conflict of interest disclosure
- Posts involving overt sexual content
- Posts containing partial nudity
- Displaying your current relationship status
- Displaying membership in online groups dealing with controversial issues
- Making opinionated comments about controversial issues
- Critical comments about a lecturer or preceptor
- Critical comments of course material, your program, faculty, or the university
- Attitudes of superiority or condescending behaviour (assumed because of professional status)

Other examples of unprofessionalism online (please specify)

25. Do you think that others would benefit from guidelines relating to using social networking software in a professional manner?

- Yes
- No

Facebook in Healthcare Education

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26. Are you aware of another a colleague posting material on Facebook, which you considered unprofessional?

Yes

No

If yes, please describe:

27. Have you yourself ever made any posts or comments on social media websites that, in hindsight, you probably shouldn't have?

Yes

No

If yes, please describe:

28. Has anyone else ever posted material about you online which you found embarrassing or which made you look unprofessional?

Yes

No

If yes, please describe:

29. How would you describe your typical actions or behavior in an online social media environment, given the following definitions?

-Active behavior: making comments, posting links or photos, sending invites

-Passive behavior: reading, observing, having pictures of you or other content relating to you posted by others

More active than passive

More passive than active

About half active, and half passive

I do not have an account on a social media website

Facebook in Healthcare Education

30. In light of your response to the previous question, which do you think is a better strategy for protecting your online image?

- Abstaining from Facebook completely and not having an account at all
- Maintaining an account, so you can monitor posts that might involve you (pictures, etc.)

31. Do you think that you could benefit from guidelines relating to using social networking software in a professional manner?

- Yes
- No

32. Do you think that current guidelines at the University adequately address and define issues relating to Facebook and online professionalism for those that might be unsure?

- Yes, they are fine
- No, they should be amended to specifically address issues of online activity
- I am unfamiliar with current guidelines for professionalism and conduct
- There is no need for the University to issue guidelines on my online activity

33. Please take a moment and include any comments you might have about Facebook use by current and future healthcare professionals, your feelings about online professionalism (ways to improve it, or if it should be considered an issue at all), or any other thoughts that this survey might have provoked: