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The Effects of Gender, Age, and Year of Study on Occupational Therapy Students' Social Media Competency

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This is to certify that the doctoral study by

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Walden University
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Dissertation Submitted in Partial Fulfillment

of the Requirements for the Degree of

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Abstract

Occupational therapy students (OTSs) who misuse social media within academic and clinical learning environments may increase the instances of ethical health care violations and breaches of professional codes of conduct. The purpose of this quantitative, cross-sectional study was to assess the social media competency (SMC) scores of OTSs based on year of study, age, and gender. As a result, the research questions were developed to compare the SMC of OTSs based on year of study, age, and gender. The study was grounded by Bandura's social learning theory and a rationale for allowing social media use in the curriculum. An archived convenience sample (N = 180) of SMC scores from four student cohorts who took a digital version of the SMC survey instrument during the 2021 academic year was used. A one-way between subjects ANOVA indicated significant results for the year of study on SMC at the $p < .001$ level in which the mean SMC score was significantly less than the remaining cohorts of study. Additionally, no significant differences were found for age ($p > .07$) and gender ($p > 0.11$) in the SMC of OTSs. OTSs' SMC influences both the quality of services rendered as well as protection of the rights and privacy of consumers and their sensitive information. This study supports positive social change by potentially informing educators on the effect of their curricula towards OTSs' SMC, which may further protect patient privacy and confidentiality against their misuse through social media.

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Dedication

This journey is dedicated to my family, for without them, I am nothing.

Acknowledgments

I would like to acknowledge my family, friends, and colleagues for their continued support, guidance, and patience throughout this journey. I would also like to acknowledge the unbelievable support, trust and confidence of my committee members, Dr. Darci Harland and Dr. Rick Hammett, for their ongoing mentorship throughout this unforgettable journey.

A special and heartfelt thank you to Dr. Harland for making me whole again.

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Chapter 1: Introduction to the Study

The ubiquity and convenience of social media technology has made social media an integral component of building and maintaining both personal and professional relationships but has also blurred the line between personal and professional life (Bossio, & Sacco, 2017). This has made social media behavior, both proper and improper, an issue of interest for stakeholders in the field of occupational therapy where the improper use of social media has far-reaching ethical and legal ramifications. The use of social media in professional context, or e-professionalism, among occupational therapy students (OTSs) has been documented on multiple occasions (Naidoo et al., 2018), but students have also self-reported a lack of clarity about expectations regarding the use of social media during active learning sessions (O'Connor et al., 2021). This indicates that OTSs do not have the full breadth of social media competence (SMC) and are misusing social media technologies within academic and clinical learning environments. SMC is defined as the set of knowledge, strategies, and skills that allows an individual to efficiently engage in the modern social media environment (X. Zhu et al., 2020).

In this study, I assessed the SMC of OTSs at a university in a northeast (NE) state and how their SMC is influenced by demographic characteristics, including their year of study, age, and gender. Study findings may provide data that can be used to inform policy, SMC training for both educators and students, and the of development of curricular opportunities to improve SMC and enhance e-professionalism among OTSs. This chapter includes a discussion of the background, problem statement, purpose of the

study, definitions, assumptions, scope and delimitations, study limitations, and significance of the study.

Background

Since the turn of the century, information technology has improved, and social media channels have proliferated rapidly (Hunter, 2020). Social media refers to "internet-based channels that allow users to opportunistically interact and selectively self-present, either in real-time or asynchronously, with both broad and narrow audiences who derive value from user-generated content and the perception of interaction with others" (Carr & Hayes, 2015, p. 50). Popular social media channels include Facebook, Twitter, and Instagram, and many have become an integral aspect of private, professional, and corporate communications (Mention et al., 2019; Park & Jiang, 2020; Troise & Camilleri, 2021). The portability and ubiquity of social media apps on smart devices have blurred the lines between personal and professional space as individuals typically manage both personal and work-related social media accounts on the same device. Additionally, individuals may use the same social media account for both private and work-related communications, like in the case of self-employed individuals or college students, a demographic for whom social media now constitutes an increasing proportion of learning media (Kumar & Priyadarshini, 2018; Silius et al., 2011; Zachos et al., 2018). Although, the use of social media is prevalent among college-aged young adults, previous studies of college students have shown that their SMC lags behind their social media usage (Azizi et al., 2019; Duke et al., 2017; S. Zhu et al., 2021). The underdeveloped SMC of college students predisposes them to improper use and unprofessional social media behaviors

with both personal and professional ramifications (Price et al., 2018). For instance, the inability to assess the veracity of social media content and accounts creates and perpetuates a false reality with negative consequences for the identity and sense of self of the social media user (Kasperiuniene & Zydziunaite, 2019).

The misuse of social media has been associated negatively with cognitive functioning through mechanisms like chronic inattention and lack of concentration during active learning sessions (Karpinski et al., 2013; Persico et al., 2016). Another manifestation of the misuse of social media are in antisocial behaviors, like being less confident in face-to-face interactions and cyberbullying (Watts et al., 2017) and the disclosure of other people's private and sensitive information without their consent (Hallam & Zanella, 2017; Kisekka et al., 2013).

The variables examined in this study have been shown in previous research to be connected to SMC. The variations of SMC among health care students based on their year of study has also been investigated in other health care fields, such as nursing, whereby the improper use of social media technologies hindered students' ability to complete coursework (O'Connor et al., 2022; Price et al., 2018). Furthermore, the age of the student has been shown to influence their competencies with social media technologies as it relates to how they use those technologies for learning and adapting to the demands of acquiring information through online sources (Ramos-Morcillo et al., 2020). Moreover, other studies have demonstrated differences by gender related to how social media technologies are used by college students (Kircaburun et al., 2020) and that

gender influences how social media usage translates to the SMC of users (Hou et al., 2020; Twenge & Martin, 2020).

While the preponderance of evidence from extant studies has shown that the misuse use of social media is associated with negative personal and professional outcomes for college students (Kitsis et al., 2016), little attention has been paid to exploring SMC as an underlying explanatory factor for the misuse of social media, especially in the field of occupational therapy. The purpose of this quantitative study was to assess the SMC of OTSs in a university in a NE state and how their SMC is influenced by year of study, age, and gender.

Problem Statement

The problem under study was the misuse use of social media technologies by OTSs within academic and clinical learning environments at a university in a NE state. The misuse of social media technology during academic and clinical education by OTSs can lead to violations of the profession's code of ethics and result in breaches of patient confidentiality regulations with both ethical and legal ramifications (de Peralta et al., 2019; Kamarudin et al., 2022). E-professionalism is defined as the attitudes and behaviors that reflect traditional professionalism paradigms but are manifested through digital media (Jannsen, 2009). Although the use of social media technology in health care continues to increase, there are inconsistent guidelines on expectations of e-professionalism from OTS when engaging within social media technology platforms during their professional training (Fenwick, 2016). Nonetheless, as future health care providers, it is imperative that OTSs take every measure to ensure that their online digital

activities adhere to the professional, legal, and ethical standards of competency, consistent with the phenomena of e-professionalism (Rich, 2019). Previous studies that examined the concept of e-professionalism and its influence on health care service delivery in pharmacy, social work, nursing, and medicine found that the misuse of social media by students across these health care disciplines is associated with low levels of perceived professionalism and integrity among health care consumers as well as a lower degree of consumer confidence in practice outcomes (Barnable et al., 2018; Benetoli et al., 2017; de Peralta et al., 2019; Fenwick, 2016; Jawaid et al., 2015; Kamarudin et al., 2022; Neville & Waylen, 2015).

The problem on which this study is based is that faculty and administrative members noted multiple instances in which OTSs at the study site university in a NE state exhibited unprofessional behaviors in their use of social media through a series of formal discussions with clinical preceptors. For example, during numerous quarterly interviews with occupational therapy clinical preceptors, the clinical preceptors described instances where students discussed patient diagnosis on social media; took selfies within restricted patient care areas; shared images of patient-sensitive information through social media; and shared non-consented patient information with unaffiliated colleagues through social media sites, such as Instagram. Faculty members at the study site have also described the unprofessional use of social media among OTSs, including sharing sensitive and private academic content through frequently used social media platforms, like Facebook and Twitter and students cheating on standardized exams by sharing exam content online while taking exams.

The misuse of social media in higher education by health care students is an educational technology practice and is not only a problem in the United States (Farsi, 2021; Giustini et al., 2018) but is also a problem internationally (Aznar-Díaz et al., 2020; Carbonell et al., 2018). In this study, I used the study site university in a NE state as a reflection or example of the larger, international problem. Global studies have demonstrated that social media misuse by health care students from various disciplines continue to occur at an increasing rate, resulting in violations of academic and professional polices and ethics (Mosalanejad et al., 2021); however, this increasing rate of occurrence has yet to be explored in the field of occupational therapy education in the United States. The population of this study was OTSs across the United States because every academic graduate level occupational therapy program adheres to national accreditation and operating standards set forth by the Accreditation Council for Occupational Therapy Education. This problem of social media misuse by health care students is current, relevant, and significant to educational technology practice (Williamson et al., 2020). While social media misuse related to SMC has yet to be explored among the OTS population, other studies examining demographic variables, such as the year of study, age, and gender, have been conducted with other health care students (Twenge & Martin, 2020; Winkelmann et al., 2018). These studies have explored how social media technologies are used within academic and clinical contexts as well as how academic polices are formulated, but none have been conducted in educational occupational therapy settings. Evidence from the literature and from my personal communication with professionals in the field show that the problem of social

media misuse is endemic among health care students, and specifically OTSs, and if not addressed, may pose ethical and potential legal challenges that may undermine practice outcomes and patient safety.

A probable step towards addressing the misuse of social media technologies is to assess the SMC of OTSs. SMC is the ability of a person to use social media appropriately for engaging with others and participating in community (Alber et al., 2015). SMC connotes the idea of a social media user having a well-developed understanding of the merits and demerits of social media as a means of personal and professional communication, the influence of social media communications on the sense of self of both the sender and the receiver, and a recognition of the boundaries between personal and professional social media communications (S. Zhu et al., 2020). All four dimensions of the Social Media Competency Scale- College Student (SMCS-CS) in totality measure the user's SMC and would theoretically connect to a personal ethos for the responsible, professional use of social media technologies by the OTSs.

Purpose of the Study

The purpose of this quantitative study was to assess the SMC of OTSs at a university in a NE state and how their SMC was influenced by year of study, age, and gender. In this study, I assessed the SMC of the study population along the four dimensions described by S. Zhu et al. (2020): (a) *technical usability*, defined as a person's ability to operate and manage social media profile, software, and hardware; (b) *content interpretation*, defined as the ability to filter through social media content and extract the appropriate meanings contained therein; (c) *content generation*, defined as a

person's ability to cultivate and maintain connections with other social media users through the creation and dissemination of content; and (d) *anticipatory reflection*, defined as a person's "ability to be self-aware of one's actions and others' perceptions before generating content".

Research Questions and Hypotheses

The following research questions (RQs) and hypotheses guided this study:

RQ1: What is the difference in OTSs' SMC score based on year of study (i.e., first, second, third, and fourth-year designations) at a university in a NE state?

$H_0$1: There is no statistically significant difference in OTSs' SMC score based on year of study at a university in a NE state.

H_a1: There is a statistically significant difference in OTSs' SMC score based on year of study at a university in a NE state.

RQ2: What is the difference in OTSs' SMC score based on age at a university in a NE state?

$H_0$2: There is no statistically significant difference in OTSs' SMC score based on age at a university in a NE state.

H_a2: There is a statistically significant difference in OTSs' SMC score based on age at a university in a NE state.

RQ3: What is the difference in OTSs' SMC score based on gender at a university in a NE state?

$H_0$3: There is no statistically significant difference in OTSs' SMC score based on gender at a university in a NE state.

H_a3: There is a statistically significant difference in OTSs' SMC score based on age at a university in a NE state.

Theoretical Framework for the Study

In this quantitative study, I used the social learning theory (SLT) as the theoretical framework. In the SLT, it was posited that human behavior is determined by observational learning, environmental factors, and past experiences in a process that is mediated by cognitive factors (Bandura & McClelland, 1977). According to the SLT, a person's behavior is influenced by observing and imitating the behavior of other individuals (referred to as models) in the environment; however, cognitive processing is required to effectively practice the observed behavior (Bandura & McClelland, 1977). The SLT provided a framework for understanding the social media behaviors of OTSs by elaborating on how learning occurs from an observational perspective (i.e., students observing and imitating the social media behavior of their peers and instructors during active learning sessions). This points to the role of environmental factors, like access to social media technology during active learning sessions and the potential lack of consequences, in driving the unprofessional use of social media among students. From a cognitive perspective, students have also reported that they lack clarity about the expectations of e-professionalism during active learning sessions but have the skills and knowledge to operate social media technology while simultaneously receiving instruction or during clinical demonstrations (Mosalanejad et al., 2021). Moreover, the SLT captures the four dimensions of SMC within its theoretical framework, thereby making it suitable for guiding this research study. The technical usability, content interpretation, and content

generation dimensions have a cognitive basis, while the anticipatory reflection dimension includes both cognitive and behavioral components, all of which take place concurrently in the students' learning environment.

Findings from empirical studies of unprofessional behaviors in the digital ecosystem have provided support for the use of SLT as a conceptual framework. Miller and Morris (2016) found that peers are the most salient predictor of involvement in online deviant behaviors according to the SLT, highlighting the role of environmental factors in shaping behavior. Additionally, regarding the influence of environmental factors as related to the SLT, the social media usage of university students in relation to online political activities influences the modeled behaviors of other students on social media sites, whereby the public political affiliation of similar academic year ranked students on social media are modeled by their peers (Ahmad et al., 2019). Moreover, gender differences do exist in how social media is used and learned by university students (Alnjadat et al., 2019). Research has also shown where the observation and modeling of online activity is closely based on the similarities within age group follows the SLT framework (Ali et al., 2021). In another SLT-based study, an individual's perception of the ethical implications of their behavior had a moderating influence on the individual's violation of the digital intellectual copyright of another person (Hinduja & Ingram, 2008), highlighting the role of cognition and capacity for self-reflection in determining behavior. Therefore, it was theoretically valid to explore unprofessional social media usage by assessing the SMC of OTSs use the four dimensions of the SLT.

Nature of the Study

I used a cross-sectional, observational study design and employed a one-way analysis of variance (ANOVA) with two between-subjects (independent) variables (i.e., year of study, age, and gender) and the sum score of the SMCS-CS (dependent) variable. Observational study designs have nonrandom comparison groups (Dawson, 1997). A cross-sectional design is a type of observational study design in which data are collected from a single sample at only one time point (Dawson, 1997). Data for both independent and dependent variables are collected at the same time, but changes in the dependent variables are presumed to be the result of the independent variables. In the current study, for statistical comparisons, the study sample was categorized into subsamples based on demographic characteristics, such as for age and gender. Based on the mean responses, gender was categorized into females and males and age was categorized as those at or above 30 years old and those that were below the age of 30. The scores of the dependent variables for each subgroup of a demographic characteristic were then compared using a one-way ANOVA for the year of study and *t* tests for age and gender.

Archival data from the study site existed as program outcome measures for institutional policies and procedures related to social media usage as well as a part of the academic institution's evaluation, data collection, and outcome measure processes in accordance with educational accreditation standards. Furthermore, OTSs were admitted as graduate level students for an entry-level graduate program for their profession and engaged in various forms of data collection measures intended to serve programmatic and data-driven decision-making processes. Additionally, the archival data were collected

from OTSs of each year of study within the academic program from the Fall 2021–Fall 2022 academic semesters using the SMCS-CS (S. Zhu et al., 2020) as a mandatory component of their coursework. Moreover, a faculty member of the program had already collected the data from the students through an online survey using an institutional secure software that was then transferred to the program administrator who then secured the data set and removed all forms of identifying information.

Definitions

The following terms and acronyms are important to this quantitative study and were defined as follows:

Clinical education: A formal, supervised, experiential learning focused on the development and application of patient/client-centered skills and professional behaviors (Pashmdarfard et al., 2020).

Code of ethics: A code designed to reflect the dynamic nature of the occupational therapy profession, the evolving health care environment, and emerging technologies that can present potential ethical concerns in practice, research, education, and policy (American Occupational Therapy Association, 2020, p. 7).

E-professionalism: "The attitudes and behaviors that reflect traditional professionalism paradigms but are manifested through digital media" (Kaczmarczyk et al., 2013, p. 166).

Gender: A subclass within a grammatical class (such as noun, pronoun, adjective, or verb) of a language that is partly arbitrary but also partly based on distinguishable characteristics (such as shape, social rank, manner of existence, or sex) and that

determines agreement with and selection of other words or grammatical forms (Alnjadat et al., 2019).

SMC: The "set of knowledge, strategies, and skills that allows an individual to efficiently engage in the social media environment of today" (S. Zhu et al., 2020, p. 110).

Year of study: The period of time during which a full-time student at an institution of higher education is expected to complete the equivalent of 1 year of course work, as defined by the institution (S. Zhu et al., 2020, p. 109).

Assumptions

Two major assumptions undergirded this study. First, this observational study design involved self-reported student data obtained using the SMCS-CS; therefore, I assumed that students provided accurate and unbiased responses to the survey questions. Because the OTSs were from various academic cohorts and years but are a part of the same program of study, the assumption that students provided unbiased and accurate responses aligned with the shared exposure to the core concept of ethics that is threaded throughout the curriculum.

Additionally, there was an assumption that students participating in this study had current experience using social media technologies within higher education. Therefore, I assumed that students had access to social media technologies, were familiar with the various forms of social media technologies from their past and present experiences, and readily used such technologies within the graduate level program of study. I also assumed that OTSs at the study site university received similar instruction and exposure to skills and learning experiences such that the professional training program for these OTSs is

consistent across demographic groups and academic year and has no effect on their SMC. Therefore, another assumption was that each student, irrespective of their academic rank within the program, had utilized social media technologies within the graduate-level program of study and that said technologies were all utilized in uniformed ways as based on their design and features.

Scope and Delimitations

The scope of this study was limited to OTSs in a graduate program of occupational therapy at a university in a NE state. The geographic region of this study did not include OTSs from any other accredited occupational therapy academic program and was limited to a single point of time for data collection, which was the fall academic semester from 2021–2022 consisting of students from both online and in-person classes. Additionally, the scope of this study comprised archival data as collected and stored by a single academic occupational therapy program at the study site university by its own faculty and administrative staff. The collection of archival data by local faculty and administrative staff defined another boundary of this study.

Additionally, the scope of this study was limited to examining data that were de-identified of any personal student information with only year of study, age, and gender as independent variables. Students taking the survey had the following options for year of study: first-, second-, third-, or fourth-year rankings. For age, the survey included intervals of 18–25 and 25 and older. Gender options included male, female, and prefer not to say. While varying demographic differences of the students and the inclusion of prior individual student experiences may have added value in this research, the use of

archival data did not allow for the gathering of these data points and, therefore, aligned to the exploratory nature of this research study. A variety of prior experiences and backgrounds for using social media technologies prior to the start of their academic program may have influenced students' SMC. For example, a student may have had in-depth experience using social media technologies from employer-related duties and tasks. In conclusion, the generalizability of this study was bound to the independent variable of the students' year of study, age, gender, and the dependent variable of their SMC as measured by the SMCS-CS.

While the problem of the misuse of social media by OTSs can be researched from multiple dimensions as suggested by the SLT, I limited this study to the cognitive and self-reported SMC of OTSs. Hence, environmental factors were not assessed in this study. Delimiting the study scope to the evaluation of SMC was based on the SLT that contains the idea that cognitive mediational processes are required for a behavior to occur even when environmental stimuli are present. Therefore, assessing OTSs for their SMC (a cognitive attribute) provided preliminary insight towards addressing the misuse use of social media among OTSs through informing possible changes in instruction and policy as related to social media use and SMC at the program level.

For this study, I used archival data that contained records of the knowledge and self-reported SMC of OTSs. These data on SMC represent the outcome or dependent variable of interest and are organized along the four dimensions described by S. Zhu et al. (2020): technical usability, content interpretation, content generation, and anticipatory reflection.

The purpose of this quantitative study was to assess the SMC of OTSs at a university in a NE state and how their SMC was influenced by year of study, age, and gender. My review of archival data for this study was limited to one academic semester. The scope of this study was limited to graduate-level students of occupational therapy at a single university in a NE state, which limits the generalizability of the study findings because other students undergoing the same training in other schools both within and outside the United States may have different environmental factors that shape and influence how they perceive their SMC and, ultimately, their social media behavior. The generalizability of study findings was also limited due to the cross-sectional nature of the measurements that were used in the study analysis. With cross-sectional measurements, it was not possible to capture the effect of time in the analysis, despite noting that changes in social media behavior are likely to change with time.

Limitations

Study limitations included the use of an observational, cross-sectional study design. With this study design, I was not able to empirically determine temporal precedence between the independent and dependent variables. Statistical comparisons were also made using a nonrandom design, and therefore, I was unable to account for potential confounding variables in the analysis. Confounding variables are other variables, measured or unmeasured, that have a relationship with the independent and dependent variables of interest and may be responsible for the observed effect (McNamee, 2003). Confounding variables could have included previous educational experiences that may influence a student's ability to use social media technologies, such

as technical education using digital media technologies for exploring entrepreneurship and digital branding within academia, which has been shown to effectively influence their technical abilities to use social media technologies in other environments (Comesaña-Comesaña et al., 2022).

Furthermore, this study involved data from OTSs at a university in a NE state, which limits the applicability of study findings to other settings. Although it can be assumed that the curriculum for occupational therapy education is standardized such that OTSs across different settings receive similar training exposure, the specific features of the training environment are likely to differ from school to school such that some training environments foster professional social media behavior while others implicitly encourage unprofessional social media behavior independent of the training curriculum however standardized. Therefore, a more robust SLT-based assessment of SMC accounted for attributes of the active learning environments where these behaviors are performed.

Significance

The results of this study provided empirical insight into the SMC of OTSs to guide educators in formulating and implementing policy reforms aimed at addressing the misuse of social media technologies during active learning sessions. Data from this study will also assist educators, both clinical and academic, in understanding how to design targeted interventions based on the variations of a student's year of study, age, or gender. For example, faculty members may need to vary their messaging to students depending on their academic year or age or may target their messaging to address the dimensions of SMC on which students are most deficient for effectiveness. Additionally, data from this

study will enable educators to adapt their instructional techniques for specific course outcomes based on the gender statistics of the class, tailoring the use of sensitive language that is gender inclusive. Furthermore, findings from this study may contribute valuable preliminary information for administrators related to the potential development of policies to foster e-professionalism and regulations for social media usage during active learning sessions for OTSs. Ultimately, if stakeholders use data from this study to implement changes to academic and clinical settings or implement new policies or training, OTSs may better understand their role in using social media as a professional. Additional positive social change may occur as students graduate to become practicing occupational therapists who, because of improved social media use, better protect patient confidentiality.

Summary

A faculty member at the study site university reported that the misuse of social media among OTSs during active learning sessions has been associated with violations of patient confidentiality, academic misconduct, among other ethical and legal concerns. This suboptimal e-professionalism is a multifaceted problem that includes environmental, regulatory, and behavioral aspects. Moreover, my personal communications and evidence from extant research pointed to SMC as an underlying explanatory factor for the observed improper use of social media among OTSs. The purpose of this quantitative study was to assess the SMC of OTSs at the study site university in a NE state and how their SMC was influenced by year of study, age, and gender. This study was guided by the SLT.

In Chapter 2, I will provide a review of the literature relevant to the issue of e-professionalism and social media behavior among college students, with a focus on health care professions. Chapter 2 also includes a review of the literature on the SLT, the construct of SMC, and influencing factors.

Chapter 2: Literature Review

The misuse of social media technologies among health care students during active learning sessions, like required clinical rotations, has been associated with violations of ethical and practice standards (Barnable et al., 2018; Marelić et al., 2021). This lack of e-professionalism majorly manifests as the use of social media technology in ways that undermine patient confidentiality, among other ethical and legal ramifications (Duke et al., 2017; Jawaid et al., 2015; Winkelmann et al., 2018). However, the problem of misuse of social media among college students has multiple dimensions to it. On one hand, this behavior is driven by peer pressure in which students imitate the observed social media behaviors of their colleagues (Gettig et al., 2016; O'Connor et al., 2022). This is further accentuated by attributes of the learning environment, such as an apparent lack of consequences that implicitly foster the misuse of social media, and compounded by students' lack of clarity about expectations of professionalism regarding the use of social media during active learning sessions (Azizi et al., 2019; Fenwick, 2016; Jannsen, 2009).

Due to the widespread use of social media for personal and professional communication, a viable way to address the lack of e-professionalism among OTSs is SMC. SMC is the ability of a person to use social media appropriately for engaging with others and participating in community (Alber et al., 2015). SMC connotes the idea of a social media user having a well-developed understanding of the merits and demerits of social media as a means of personal and professional communication, the influence of social media communications on the sense of self of both the sender and the receiver, and

a recognition of the boundaries between personal and professional social media communications (X. Zhu et al., 2020).

In this chapter, I explore the literature on social media usage in health care education. More specifically, the issues of social media use by health care students are explored as well as the importance of modeling proper social media use. The chapter also includes a review of social media use and the issues of ethical violations in by health care students and professionals. Issues of e-professionalism and digital citizenship are explored as well as issues around patient privacy and confidentiality. I also describe research related to the social media use of various demographic characteristics social media issues in health care. I provide an analysis of the effectiveness of how e-professionalism expectations have been communicated in health care settings as well as the effectiveness of training and SMCs in health care on social media use.

Literature Search Strategy

I searched the following databases and search engines for seminal and relevant literature on the research topic: Thoreau Multi-Database, Education Source, CINAHL Complete, Education Research Complete, ERIC, ProQuest Education Journals, Sage Journals, Google Scholar, and Ovid Nursing Full Text Plus. The following keyword search terms were used: *social media competence in health care , social media competency in medicine, social media competence in allied health professions and or education, social learning theory and technology, social learning theory and social media, social media competence,* and *HIPAA and social media competence and professional development*. I limited my search of databases to scientific literature

published from 2016–2022; however, I recognized that seminal literature like those that describe theories, define concepts or constructs, or appear as books and book chapters may have been published before 2016. Furthermore, due to the limited research available on the SMC of health care students and practitioners within the United States, I had to expand my search of the literature to other geographic regions with similar target populations. Although there may be cultural differences of social media users within the different geographic populations, the use of social media technologies and their subsequent SMC was a common theme across the expanded literature with applicable and relatable findings to those studies conducted solely in the United States. Additionally, I gave preference to peer-reviewed literature, such as journal articles and published dissertations, and considered other literature like book chapters, conference proceedings, and official documents as necessary.

Theoretical Foundation

This research study was guided by the SLT. The SLT is used to explain that human behaviors are learned through observation and modeling and considers how both environmental and cognitive factors interact to influence human behavior (Bandura & McClelland, 1977). There are two core concepts that make up the theoretical underpinnings of the SLT: observational learning and cognitive mediational processes (Bandura & McClelland, 1977). These concepts are organized into a stimuli-mediation-behavior framework. Stimuli comes from (a) the environment (i.e., an individual learns a behavior through observing other people perform the behavior within the environment) and (b) the individual's past experiences. The individual's environment and past

experiences also include the consideration of environmental characteristics like the presence (or absence) of reinforcement, which can be positive or negative, that influence whether the observed behavior is encoded or not for future action (Bandura & McClelland, 1977). However, the actual performance of the behavior cannot occur without the involvement of cognitive processes. Bandura and McClelland (1977) argued that humans are not just passive observers of behavior, but they actively process behavioral information perceived in the environment and consider the potential outcomes associated with engaging in an observed behavior. These cognitive processes mediate the relationship between observational learning and performing a behavior.

The following subsections include a discussion of the SLT constructs of stimuli (defined as observational learning and past experiences) and cognitive mediational processes as well as illustrate how previous research studies have applied the SLT to explore and understand student behavior with respect to the use of technology and social media during active learning sessions.

Constructs of Stimuli

The constructs of stimuli are defined by observational learning or past experience (Bandura & McClelland, 1977). Bandura and McClelland (1977) described observational learning as occurring along three dimensions of behavior modeling in which the observed person (character) is the model: a live model, a symbolic model, and an instructional model. A live model is an actual individual demonstrating or acting out behavior; a symbolic model is an actual or fictitious character whose behavior is observed through a medium, like social media, television programs, and other online media; while an

instructional model involves an indirect observation of behavior by interacting with descriptions and explanations of behaviors, like in live teaching demonstrations, books, autobiographies, and other written sources (Bandura & McClelland, 1977). In relation to the current study, an example of an instructional model would be an academic faculty demonstrating how to interact with a patient during an initial physical assessment through a live feed using YouTube and sharing the rationale and details behind their actions through the live comment feature. In relation to the instructional model, an example of a symbolic model may entail the use of an interactive Instagram story using a fictious online persona depicting and outlining short pieces of occupational therapy information within segmented online posts. An example of a live model would be a course instructor who is simultaneously demonstrating a skilled therapeutic handling maneuver to both an on-campus and a remote audience of students through a Facebook live session during a hybrid learning session. Hence, observational learning is not limited to direct observation but includes all perceptions of behavior from multiple sources, such as hearing information or using concepts and images to communicate behavior, similar to the processes in social media usage.

Bandura (1986) expanded the SLT to capture the role of a person's past experiences and social reinforcement in determining human behavior with the core idea being that people evaluate their past experiences with a behavior in terms of attendant reinforcements. Reinforcements are external and internal responses to a behavior that increase or decrease the probability of the behavior being repeated. Reinforcements can be positive or negative. Positive reinforcements provide consequences for behavior that

strengthen the behavior, while negative reinforcements provide consequences for behavior that inhibit the future performance of the behavior (Bandura, 1991). In the context of the current study, the improper use of social media by OTSs during active learning sessions receiving praise and adulation from peers constitutes positive reinforcement of the behavior while being reprimanded a faculty member or instructor constitutes negative reinforcement. In some instances, both types of reinforcement are simultaneously provided. In the SLT, it is argued that when at the threshold of a repeat performance of a behavior, a person will cognitively evaluate previous instances of performing the behavior and the reinforcement received and will act based on which reinforcement is considered more salient (Bandura, 1991). That is, if the reprimand (i.e., negative reinforcement) was more salient than the praise (i.e., positive reinforcement), it is less likely that the behavior will be repeated and vice versa. In other words, past experiences of observational learning and reinforcement inform the expectations of future behavior (Das & Lavoie, 2014).

Cognitive Mediational Processes

Bandura and McClelland (1977) distinguished their SLT from other behavioral theories by introducing the idea that observational learning is not complete without the learner demonstrating the new behavior. For the learner to perform the new behavior, the leaner must possess the skill, competence, and self-efficacy to perform the observed behavior. That is, cognitive processes mediate the relationship between observed behavior and performance, and Bandura and McClelland described these cognitive mediational processes as attention, retention, reproduction, and motivation.

Attention

Attention is the first response of an individual to modeled events (Bandura & McClelland, 1977). A behavior must capture an individual's attention for learning and imitation to occur. According to Bandura and McClelland (1977), for a behavior to capture the attention of an observer, it needs to have a perceptible level of functional value, complexity, affective valence, and distinctiveness. The observer must assign a level of importance to the modeled behavior for a mental representation to occur as part of new learning (Horsburgh & Ippolito, 2018). Furthermore, the complexity of the modeled behavior influences how attention fluctuates between passive and active forms of observation. In the context of the current study, an active observation is when an individual begins to browse social media on a platform after observing a model using the social media platform because the observer is familiar with and finds the social media platform simple to operate, while passive observation is when an individual does not browse social media even after observing a model perform the behavior because the observer is not familiar with, and finds the social media platform difficult to operate (see Li & Wang, 2019). Moreover, the affective valence of the observed behavior influences whether the behavior will be imitated. Behaviors that induce a state of positive affect, characterized by enthusiasm, happiness, and sometimes euphoria, in the observer are likely to be imitated, while behaviors that induce a state of negative affect, often characterized by anger, fear, anxiety, and sadness, are less likely to be imitated (Bandura & McClelland, 1977). Both affective states are not mutually exclusive, and social media can induce both types of affective states; however, the affective state with higher level of

salience is often given precedence in the cognitive mediational process of observational learning (Gioia & Manz, 1985; Rumjaun & Narod, 2020).

Retention

The second requirement for observational learning to take place is retention. Retention refers to being able to remember the behavior that was observed (Bandura & McClelland, 1977). That is, the observed behavior must not only be recognized but must be cognitively coded and structured into a form that is easy to remember. This process is often facilitated by mental and/or physical rehearsals of the model's action (Rumjaun & Narod, 2020). The cognitive mediational process of retention can be facilitated by frequency of exposure to the model performing the behavior of interest. In the case of social media use, this can be in the form of OTSs repeatedly observing the social media behavior of their peers and faculty members during active learning sessions. What is retained from observation is also influenced by the type of reinforcement perceived. For instance, if faculty members are observed to restrict their use of social media to outside of active learning sessions or exclusively for teaching and instructional purposes during active learning sessions, this will cue students to remember to enforce implicit boundaries around when and where they use social media as the position of role model occupied by faculty members reinforces that pattern of social media behavior in the students (see Ahn et al., 2020; Li & Wang, 2019).

Reproduction

Reproduction is the third component of the cognitive processes that mediate the relationship between observation and behavior as described by the SLT. This requisite for

behavior refers to the physical and mental ability of the observer to enact or perform observed behavior (Bandura & McClelland, 1977). Reproduction connotes the ideas of possessing the skills and resources to perform an observed behavior and the individual's self-efficacy to perform the behavior. In terms of skills and resources, an individual who lacks the skills to operate social media technology or who does not have access to digital technologies, like smart phones, computers, or the internet, cannot perform social media use behavior even when the behavior is observed in others and retained (Alonso Galbán & Vialart Vidal, 2019). On the other hand, self-efficacy refers to an individual's confidence in their ability to perform a behavior successfully (Bandura & McClelland, 1977). Self-efficacy is also a particular set of beliefs held by an individual that determine how well they can execute a plan of action in prospective situations (Bandura & McClelland, 1977). In a quantitative cross-sectional study of college students, Bailey and Rakushin-Lee (2021) found that self-efficacy significantly mediated the association between the perceived value of engaging in social networking as a learning behavior and social media participation such that higher levels of self-efficacy fostered higher social media participation. In another study of young adults, self-efficacy was found to mediate the relationship between health literacy, health-related social media use, and health behavioral intentions on social media such that previous positive affective experiences with health-related social media use were strongly associated with self-efficacy and prospective health-related social-media usage (Niu et al., 2021). These findings underscore the ability to reproduce observed behavior as an important cognitive mediational process in observational learning.

Motivation

According to Bandura and McClelland (1977), there must be a reason or incentive that is strong enough to motivate the observer or learner to perform the observed behavior. Motivation is considered the most important of the cognitive mediational process because without a reason to perform the observed behavior, the other mediational processes of attention, retention, and reproduction will be of no effect; motivation is what converts learning to action (Bandura & McClelland, 1977). According to the SLT's conceptualization, motivation derives from reinforcement. Three types of reinforcement are thought to induce motivation: (a) direct reinforcement, which is rewarding (or punishing) a person for performing observed behavior; (b) vicarious reinforcement, which is when the learner is motivated by observing the model being rewarded (or punished) for performing a behavior; and (c) self-reinforcement, which is when the learner rewards themselves for performing an observed behavior (Rumjaun & Narod, 2020). In a study of medical students, vicarious reinforcement in the form of the reaction of patients, colleagues, and fellow students to clinicians' behaviors influenced their decision to perform the behavior (Horsburgh & Ippolito, 2018). For instance, one student adopted the communication behavior of the pediatrician because it had a calming effect on children. In another instance, a student reported being motivated to avoid enacting a behavior after witnessing the negative reaction of the patient to the same behavior when performed by a clinician (Horsburgh & Ippolito, 2018). In a qualitative study, Prestridge (2019) found that teachers were motivated to adopt and use social media for their professional training and development through a process of self-reinforcement in which

the realization of professional development needs following social media-delivered learning fostered behavioral intention and continued use of social media by teachers for their professional development training.

Social Media Behaviors and SLT

The application of the SLT in the study of social media usage, social media behaviors, and e-professionalism of students and health care professionals is replete in extant literature. Westerman et al. (2016) conducted a quantitative study that included 545 college students in a midwestern university in the United States to assess the drivers of students' attitudes toward used social media and face-to-face communication. The researchers used the analysis of variance (ANOVA) to explore differences in students' attitudes based on demographic characteristics such as age and ethnicity. They concluded that attitude towards social media usage were directly influenced through modeled behavior by educators and institutional polices. While the authors did not investigate specifically how educators influence students' attitude towards social media, researchers did find that educators reinforced behaviors that downplayed the significance of social media technologies which through live and instructional modeling influenced students that social media is inherently bad and should be avoided (Westerman et al., 2016).

Adedayo and Aborisade (2018) explored social media usage as a predictor of youth violence in Nigeria. The quantitative design research utilized Bandura's SLT in explaining how young people between the ages of 13-25 learn to behave aggressively by observing the aggressive behaviors of others on various social media platforms. The researchers concluded that observing violence perpetrated by others on social media

without any apparent negative consequences to the perpetrators is associated with an increase in violence among Nigerian youths. The findings from this study underscores the SLT's proposition that behaviors are acquired through observation, and the tendency to engage in the observed behavior increases when contextual and environmental factors provide positive reinforcement. An example of such positive reinforcement is a "majority carry the vote" mentality where since a lot of people are observed performing the behavior, then it must be acceptable to engage in the behavior. Also, social media offer some level of deidentification and anonymity to the learner engaging in the behavior, thus reducing the likelihood of receiving negative external reinforcement (Adedayo & Aborisade, 2018). This informs the need to investigate and promote professional social media behavior among young adults, especially among college students in health care disciplines who are likely to interact with patients while using social media technology either during training or in their professional practice.

Additionally, Horsburgh and Ippolito (2018) conducted a qualitative investigation using the SLT to examine the effects of role modeling with six clinical educators and five medical students in the context of hospital settings. The researchers examined how attention, retention, motivation, and observation influenced students' and clinical educators' experiences within the teaching-learning context. Six medical students and five clinical educators were asked to describe how they selectively and consciously paid attention, used retention strategies, how they reproduced observed behavior, and what factors motivated them to imitate observed behaviors. Horsburgh and Ippolito found that students' clinical skill development was shaped by observing the practice norms and

behaviors of their clinical teachers and experiencing different forms of reinforcement and motivational cues to retain and engage in the observed behaviors. For instance, students picked up different communication techniques without direct instruction in communication (Horsburgh & Ippolito, 2018). This study aligns with my research to further investigate how observable behaviors within any learning context influence student's decision-making regarding the use of social media technology, especially when there is a risk of ethical and legal violations as in clinical practice settings.

Van Ouytsel et al. (2020) collected and analyzed quantitative data from 466 secondary school students in a study in which they investigated online dating violence among adolescents. The researchers used multiple linear regression model to assess whether perceived social norms about dating violence, observing controlling behaviors among parents, and gender stereotypes are significant predictors of online dating violence, while controlling for the effects of demographic variables age and gender. Consistent with the proposition of the SLT, they found that having observed fathers (models) exhibit intrusive controlling behaviors significantly predicted engaging in online dating violence by adolescents (Van Ouytsel et al., 2020).

In a 2018 study of the determinants of social media usage among youths in rural South Africa, Shava and Chinyamurindi used correlation analysis to analyze survey data collected from 447 youths. The researchers assessed the correlation between three theoretically defined determinants- habits, knowledge sharing, and obligation- and social media usage. In their conceptualization of habit, the authors highlighted the role of direct reinforcement (in the form of observing someone's social media post receiving attention

from others and desiring the same) and self-reinforcement (satisfaction derived from one's social media activity) in influencing social media usage. In their analyses, they found significant positive correlations between habit, knowledge sharing and obligation, and social media use among youths (Shava & Chinyamurindi, 2018).

In another qualitative study, Stanley et al. (2020) examined the impact of interprofessional health care simulations as a learning tool using SLT as a framework. Participants included 24 nursing and social work students. Results revealed that simulation designs focusing on attention, retention, and observation played critical roles in allowing students to interact in collaborative and academically successful ways. Researchers also concluded that observational behaviors within simulation learning are essential aspects of design in molding participants' desired behaviors. This study shows that Bandura's (1986) SLT can explain how health care students perceived and observe communication styles and replicated those behaviors. Students also replicated observed behaviors they deemed desirable based on reactions to the behaviors when performed within academic and clinical practice settings (Stanley et al., 2020). These studies provide evidence for the SLT as a valid theoretical framework for investigating the social media behavior of OTSs in clinical practice settings. Specifically, the SLT posits that cognitive processes of attention, retention, reproduction, and motivation mediate the relationship between observational learning and performing a behavior. The studies reviewed in this section show that aspects of these cognitive processes must be in place for observational learning to be converted to behavior, and that this is applicable to both socially desirable and unprofessional behaviors. Further, the cognitive mediational

process proposed by the SLT affords an opportunity for interventions to induce behavior change. For instance, by providing the right kind of reinforcement, certain behaviors can be fostered while others can be discouraged. However, as the authors show, the adoption of observed behaviors also depends on a social media user being able to; (a) understanding the cues displayed by the role model regarding the use of social media as a means of personal and professional communication, (b) evaluate the impact of social media communications on the sense of self of both the sender and the receiver, and (c) recognize the boundaries between personal and professional social media communications. That is, social media behavior is a function of SMC.

Literature Review of Key Concepts

In this section, I discussed the recent literature around the topics of social media use in health care education, then I discussed social media use related to ethical violations in health care , and I end with results from studies who have tried to improve students' SMC.

Social Media Use in Health Care Education

The following section of the literature review will highlight research focused on the social media use by health care students as well as faculty in higher education.

Issues of Social Media Use by Health Care Students

The increased use of social media generally by college students has shown to negatively affect student success. For example, in a quantitative study of 405 college students, Rozgonjuk et al. (2018) found that students with a higher frequency of social media usage had significantly lower academic performance measures than those with less

frequent social media usage. More importantly than influencing students' grades, other research shows that misunderstanding how to use social media in health care fields influence their ethics and professionalism (Ricciardelli et al., 2020). In a survey to investigate social media use, attitudes, and knowledge among 57 social work students, results showed that students had widely varied perceptions about what is appropriate social media use, especially related to ethics and professionalism (Ricciardelli et al., 2020). For example, students found Facebook and Instagram to be effective communication platforms with their classmates, but most reported that they were not cognizant of potential ethical violations that may result from the sharing of patient-sensitive information through open and publicly accessible channels like social media posts and feeds (Ricciardelli et al., 2020).

This finding highlights the important fact that undergraduate students often do not consider how they use social media related to their future careers, which is critical for health care workers who are bound by legal and ethical considerations. Similar to the findings by Rozgonjuk et al. (2018) whereby increased social media use has been shown to negatively influence student's academic performance, Ayar et al. (2018) found that the misuse of social media technologies by nursing students negatively influenced their academic performance and was correlated by the user's gender and academic rank (year of study). Ayar at el. examined 405 nursing student's social media use as measured through a cross-sectional correlational analysis and found that there were statistical differences in gender and academic rank (year of study) as related to the misuse of social media technologies by students in a university setting in western Turkey. The study

utilized the Problematic Internet Use Scale as developed by Ceyhan et al. (2007) which measures internet use levels as related to social media technologies ranging from normal to pathological. Although this scale is designed to measure pathological tendencies of social media use of users (Ceyhan et al., 2007), the instrument does not assess user competencies as related to how and how well users utilize social media technologies as related to the SMCS-CS (S. Zhu et al., 2020). Ayar et al. (2018) concluded that increased social media use through smart device technologies negatively influenced student's professional values and ethics when engaged in social media use within clinical learning environments as well as nursing students who identified as females and as freshmen as their academic ranking had a higher negative influence towards their academic performance with correlated tendencies of higher frequency use than their peers. The misuse of social media by health care students is apparent within disciplines such as social work and nursing with negative influences within both academic and clinical learning environments (Ayar et al., 2018; Ricciardelli et al., 2020).

The misuse of social media technologies by university students has caused health issues related to mental health and wellness. For example, in a quantitative study, Kitazawa et al. (2018) surveyed 1,258 university students in Japan who were enrolled in health care disciplines and found that increased social media use negatively influenced not only their academic performance but as well as increased reported symptoms of stress, lack of sleep, and symptoms related to depression and anxiety. Furthermore, the study showed variations in social media use influence through gender, whereby females reported spending more time with online activities compared to males and reported

higher symptoms related to decreasing mental wellness as their male counterparts This is similar to the findings by Ayar et al. (2018) and does support examining the gender differences in social media use and subsequent SMC. In correlation to examining if gender differences occur in social media use, other studies have investigated if social media misuse also led to addictive pathological tendencies by users and how this influenced student's academic performance (Aparicio- Martínez et al., 2020). Researchers examined 278 college students from a university setting in Spain and assessed if social media misuse occurred and if it led to pathological addiction and how it influenced their academic performance. Through a survey design, researchers found that females held a higher level of importance in using social networking sites on a daily basis than males and exhibited sociopsychological factors in their addiction to social media use within academia as compared to males. The findings of this study are again similar to Ayar and Kitazawa et al. (2018) however this study highlights the addictive and maladaptive outcomes of the improper use of social media technologies by students as related to academic students, which is presently unknown in the field of occupational therapy and how this influences both academic and clinical learning. Although gender differences do occur within social media use, other studies have also investigated how culture and gender both influence social media use within the college student population. For example, Alnjadat et al. (2019) employed a cross-sectional design to examine 328 medical students in a university setting in the United Arab Emirates and found that males were engaged in social media use at higher rates than females and also demonstrated highly addictive tendencies which influenced their academic standing far more

exponentially than their female counterparts. Furthermore, researchers found that both populations prioritized their social image within the social networking sites as an important factor for their social media use with males spending a considerably higher amount of time on such sites than females. Although the findings of Alnjadat et al. contrast those from Ayar et al. and Kitazawa et al., the literature does show evidence of gender differences in social media use and the subsequent influence on e-professionalism of college students.

How social media is used in higher education is important because some instructors have begun using social media as a learning aid and as an instructional tool. However, according to Siddiqui and Singh (2016) and Sobaih et al. (2022), there is no consensus among stakeholders about the merits of using social media as an instructional aid in higher education. On one hand, the use of social media as an instructional aid fosters increased communication and collaboration among students, and between students and faculty (Sobaih et al., 2022). On the other hand, the use of social media in education is associated with the distraction of college students from learning and is also related to an increase in the incidence of privacy violations (Siddiqui & Singh, 2016).

Students use social media platforms for personal and recreational purposes and may also choose to use social media to find and share content related to their area of study (Lima et al., 2020). Although college students do frequently utilize social media technologies as a means of alternative communication, they have also been found to heavily supplement their formal academic education through seeking out digital content that is found on social media platforms (Zarzycka et al., 2021). For example, in a study

investigating medical students, Lima et al. (2020) quantitatively examined students' social media use for surgical education during the COVID-19 pandemic. Data were collected from 219 medical students across five continents using a 15-item online questionnaire administered through Facebook and WhatsApp. The average age of the participants was 35-44 years of age and 70 % identified as males. Study participants reported that social media facilitated greater access to surgical education during the pandemic through mass image sharing (Lima et al., 2020). However social media may contain nonvalidated educational content that can be used inappropriately by health care students within both academic and clinical learning environments. Studies have mixed results related to how well students identify reliable resources. For example, the medical students identified the preponderance of opinion-based social media posts on surgical topics and the lack of peer review for social media medical content as significant limitations to the effective use of social media as a means of remote learning (Lima et al., 2020). On the other hand, in another study, students have been found to experience difficulties in navigating social media platforms in distinguishing between validated online content that serves an educational purpose to that of which is dominantly opinionated or nonvalidated (Carpenter & Harvey, 2019).

Some university faculty began using social media as a learning tool when remote learning started during pandemic of 2020 (Papademetriou et al., 2022). Faculty chose to include various social media tools to motivate students to be active learners and to help connect students to the university (p. 19). In a quantitative study, Nadeak (2020) analyzed the effectiveness of distance learning using social media during the COVID-19 pandemic.

Results from 250 surveys taken by university students during a shift from in-person to fully remote learning showed that students had difficulty in understanding course materials that were provided online and discussed academic-related content using social media sites as opposed to contacting their course instructors. Students preferred to use instant messaging through social media sites to gather and process information (Nadeak, 2020). However, in another study, college students prioritized using social media for information seeking activities to augment the course contents delivered through remote learning (Zarzycka et al., 2021). In that quantitative study, survey data from 234 college students revealed that students gravitated towards using social media platforms to learn vital soft skills and interpersonal skills related to their course content. Moreover, It is unclear if the presence of institutional or faculty formulated policies and procedures guiding social media use within the context of academia could have prevented a communication breakdown as discovered by Nadeak and whether or not students preference of using social media technologies as a means of communication should be further explored given the lack of research on how ethics and professional behaviors are manifested thru social media use, especially within health care education (Dutta, 2020; Peruta & Shields, 2017).

While some college students find social media technologies as an efficient method to communicate with others (Dutta, 2020; Nadeak, 2020), increased internet usage by college students has led to higher rates of internet addiction which is further attributed with the misuse of social media technologies (Haroon et al., 2019). Through a cross-sectional design, Haroon et al. (2019) examined 148 medical students in a

university in Pakistan in order to assess the magnitude of internet addiction of the university students. Results found that there was a gender association with internet addiction which was more prevalent in females than males. Furthermore, the rate of students using the internet to visit social media sites on a consistent basis was also related to the misuse of social media technologies as exhibited by the use of unprofessional and vulgar language by students within the academic context (Haroon et al., 2019). Conversely, Li et al. (2018) found that university students who identified as males exhibited higher rates of internet addiction as related to the consistent misuse of social media technologies within the academic setting which was further attributed to their perception of fitting in. Similar to the gender findings of Haroon et al. in Pakistan, other research has examined the influence of internet addiction to academic performance and have found further evidence to support gender variations of the misuse of internet and social media technologies by university students. For example, in a university setting in Japan, Seki et al. (2019) through a cross-sectional design examined 3,251 university students on the influence of internet addiction on mental health and wellness and found that internet addiction and the misuse of social media technologies was more prevalent in males than females. Additionally, researchers concluded that male university students were more cognizant of their social media appearance than their female counterparts and in turn reported higher rates of depression and anxiety as related to their social media use. Collectively, it would appear that there is not a consensus on the social media use and abuse of university students by gender, and that perhaps better understanding difference in OTS will provide improved practice in academic and clinical settings.

While some college students relied on social media for connection to the university (Papademetriou et al., 2022) or to supplement course content (Zarzycka et al., 2021) college students also use social media outside of the classroom as a coping mechanism. Dutta (2020) carried out a qualitative study to examine the influence of social media on higher education outcomes in a cohort of Indian college students. Data were collected using semi-structured interviews. Thematic analysis of the data showed that college students utilized social media platforms such as Facebook, WhatsApp, and Instagram at higher rates than before the COVID-19 pandemic for peer-to-peer communication on educational topics during the COVID-19 pandemic. Furthermore, 80% of the college students in this study reported high levels of stress, anxiety, and depression due to remote learning. The students also reported using social media as a coping mechanism for dealing with isolation due to remote learning. The author highlighted that the same technology that caused stress also provided the students with a way to cope with the stress. Coping however depended on the kind of content the students engaged with, and how they evaluated their social media experiences and interactions (Dutta, 2020). Although the type of social media content influenced how college students cope with stress (Peruta & Shields, 2017) additional research has concluded that college students lack an understanding of their own competency within social media use during periods of distress and the need for socialization (Dutta, 2020) resulting in the non-adherence to college policies and procedures of social media use. Although social media technologies can provide students with various forms of alternative communication channels, research has found that social media use by students

during periods of high relative stress can have a physical and psychological toll on users and in contrast other studies have found social media technologies as coping mechanisms for students during stressful periods such as remote learning (Dutta, 2020; Zarzycka et al., 2021).

Another issue of social media use and misuse by university students is related to a psychological phenomenon known as the fear of missing out (FoMO) which is anxiety and stress experienced in the absence of staying digitally connected to the social circles within social media communities (Gupta & Sharma, 2021) which can result in unprofessional behaviors by health care students during social media use (Carbonell et al., 2018). Researchers examined 792 health care students in a university setting in Spain with demographic variables of age, sex, and university degree. Results showed that the misuse of social media technologies was related to the frequency of social media use within the academic context, whereby students who identified as males demonstrated a higher tendency to improperly use social media technologies for longer periods in order to stay connected with their social circles and experienced high states of anxiety when not connected (Carbonell et al., 2018). Additionally, male users who spent longer periods of time with social media use were also more likely to exhibit unprofessional language and behaviors when using social media as their female counterparts, respectively (Carbonell et al., 2018). Although social media technologies are used as coping mechanisms during periods of stress, college students do misuse social media technologies with higher frequency of usage related to increased instances of unprofessional behaviors by health care students (Carbonell et al., 2018; Dutta, 2020; Zarzycka et al., 2021). However, a

consensus amongst other studies does reveal that social media use does alter communication styles and approaches between students and faculty (Nadeak, 2020; Peruta & Shields, 2017) with limited research on what role SMC plays in social media use.

Not all studies report positive experiences when trying to have students use social media for distance learning. In a quantitative cross-sectional study, Al-Alami et al. (2022) explored pharmacy students' perspectives about the remote learning of the theoretical anatomy and histology course. Survey data from 442 pharmacy students showed students experienced technical difficulties when using WhatsApp for remote learning. Issues were related to too many messages unrelated to the course content and eye strain from poor visual displays. However, positively, students reported that they liked social media for remote learning as a way to facilitate communication with their instructors through messaging or chatting (Al-Alami et al., 2022). In conclusion, using social media in health care education has shown to have both challenges and successes.

Importance of Modeling Proper Social Media Use

A number of studies have shown the importance of modeling proper social media use. Carpenter and Harvey (2019) and Duke et al. (2017) found that instructors influence the social media behavior of their students both directly and indirectly. Carpenter and Harvey explored the experiences of 48 physical health educators' social media use, and the findings showed that the social media behaviors of educators influenced the social media behavior of students, as students viewed educators as role models. Furthermore, the social media usage by educators was also influenced by their reluctancy in posting

content that could be viewed by others as inappropriate and thus detracted from openly posting social media content that was heavily opinionated (Carpenter & Harvey, 2019). Duke et al. carried out a cross-sectional quantitative study to assess social media usage and e-professionalism among faculty and students in nursing education. Survey data were collected from 337 students and 29 faculty members. The researchers concluded that faculty had higher awareness of the consequences of unprofessional social media behavior, and lower frequency of use of social media compared to students (Duke et al., 2017). The researchers also showed that faculty occupy a position of influence in reference to student perceptions and better faculty familiarity with the preferences of students about social media as a learning aid facilitated the integration of e-professionalism into clinical training for the students (Duke et al., 2017). Therefore, Carpenter and Harvey and Duke et al. showed that faculty can directly influence students' social media behavior by engaging students in discussions about social media, and indirectly by regulating their own use of social media during active learning sessions.

Faculty modeling, appropriate professional social media use, along with clear guidelines, expectations, and availability of technical support were found to be significant predictor's of students' digital citizenship (Xu et al., 2018). Moreover, external influences also play significant role in shaping the social media behavior of health care professionals as digital citizens. Health care professionals typically function within close knit professional cycles and are prone to intentionally or unintentionally adopting the social media behavior of colleagues (Manca et al., 2021). This is consistent with the premise of the SLT that behaviors are acquired through observational learning (Bandura,

1991), and applies to students observing their faculty and professionals observing their colleagues. Similarly, as part of their academic training, OTS must adhere to the same standards of practice and ethics as licensed occupational therapy clinicians (American Occupational Therapy Association, 2020). Hence, the issue of unprofessional social media behavior also applies to health care students, such that who utilize social media platforms inappropriately within academic and clinical learning contexts will model the same behaviors and actions as clinicians if measures are not taken to encourage e-professionalism during their training (Panahi et al., 2016).

Social Media Use and Ethical Violations in Health Care

The next section of the literature includes a review that highlights research focused on e-professionalism, patient confidentiality and social media use and demographic variables as related to social media use and SMC.

E-Professionalism and Digital Citizenship

E-professionalism is defined as the attitudes and behaviors that reflect traditional professionalism paradigms but are manifested through digital media (Kaczmarczyk et al., 2013, p.166). This is also tied very closely with digital citizenship. Digital citizenship is a framework for addressing the challenges of unethical or improper digital behavior when interacting through social media or other online media. It comprises the norms of behavior regarding the use of social media technology and these norms are upheld by SMC (Fernández-Prados et al., 2021). The display of e-professionalism by health care professionals and students are based on an inherent understanding of the type of behaviors and actions that constitute professional and unprofessional behaviors. Guraya

(2020) systematically reviewed the relationship between digital professionalism and online identities, behaviors, and values of health professionals. The authors qualitatively analyzed 44 primary studies (from January 2015 to April 2020) and found a significant increase in social media use among health care students and professionals accompanied by many unprofessional behaviors. Review findings showed that unprofessional behaviors were due to blurred professional identities when health care professionals engage social media. The authors also identified a disconnect between health care students' understanding of e-professionalism while using social media and the influence on their professional identity. Guraya (2020) concluded that this disconnect was a driver of students' unprofessional social media use and that students in the studies could not differentiate between what is personal and what is professional, with both identities closely entwined within the digital context. Review findings also revealed the lack of a structured curriculum within higher education with a focus on e-professionalism and available modes of instruction within the clinical learning context for teaching and assessing the digital professionalism of health care students for guiding clinical educators. The authors concluded that e-professionalism training helps health care students and professionals develop digital professionalism, competence to evaluate and self-regulate their own social media behavior, and create and maintain online profiles that reflect offline professional identities and values (Guraya, 2020). E-professionalism is a component of digital etiquette referred to as digital citizenship and has been researched within higher education as a part of social media use related behavior.

Some research focuses on college students' social media use in context of digital citizenship. Xu et al. (2018) conducted a quantitative study to assess the relationship between SMC and digital citizenship among college students. Survey data were collected from 746 university students in China. Study data were analyzed using bivariate analysis and multiple regression. Study results showed that social media efficacy and social media experience were significantly positively associated with students' digital citizenship. The presence of facilitating conditions at school for the safe and ethical use of social media was found to be a significant predictor of students' digital citizenship. The researchers concluded that increasing students' SMC improved students' digital citizenship, and that including SMC as an independent learning objective in higher education curriculum helped students' develop their SMC more effectively (Xu et al., 2018). Additional research has explored the varying aspects of digital citizenship in relation to student's SMC. S. Zhu et al. (2021) investigated college student's information literacy in relation to their SMC and surveyed 1,843 students. Data from the study revealed that student's sense of responsible online behavior and technical usability in solving problems were the most critical factors of their SMC. Similar to the SMCS-CS survey instrument (S. Zhu et al., 2020) used within this study, SMC and digital citizenship also attribute social media usage to how and why users engage in such technologies, which has yet to be explored in the field of occupational therapy. Moreover, health care student's digital citizenship skills also include their online communication patterns and how they discern between personal and professional communication (Viskić et al., 2021). Through a quantitative cross-sectional design, researchers examined the e-professionalism of dental and medical

students in a university setting in Croatia with 698 respondents and concluded that both medical and dental students often interacted with their patients through social media sites and did not uphold or acknowledge professional boundaries or standards when exchanging digital information related to their practice. Other research has demonstrated that college student's academic area of study does influence their competency and knowledge of digital citizenship within social media use, specifically for technology-based majors with past experience of social media use having very little impact on their digital citizenship within higher education (Al-Abdullatif & Gameil, 2020). Through a quantitative design using a survey analysis, researchers examined the digital citizenship of 204 college students within a university setting and concluded that the knowledge and practice of appropriate digital citizenship are not developed solely using digital technologies but instead must be instructed and modeled by faculty members (Al-Abdullatif & Gameil, 2020). Both Xu et al. (2018) and Al-Abdullatif and Gameil (2020) conclude that digital citizenship must be integrated within the curricular studies of college students in order for social media technologies to be used appropriately, however, other research has compared whether there are similar or contrasting attributes when compared to health care practitioners in relation to digital citizenship.

Comparing health care students with practitioners is another area in which research has been done. Using a survey to examine the ethical awareness of health care students and practitioners on the use of social media within practice, Khana et al. (2020) examined the responses of 129 respondents which compromised of nurses, doctors and medical students within an academic medical center and found that Facebook, instant

messaging through WhatsApp, and Twitter were the most utilized social media networking sites by both students and health care practitioners. The researchers found that less than half of the sample (33.3% of respondents) were unclear on whether their social media posts are private or public and a large potion were also unsure on how to implement ethical practice within social media use (77.5% of respondents) (Khana et al., 2020). This corroborates the findings from Guraya (2020), related to the lack of awareness of ethical implications of social media use by both health care students and practitioners and its influence their e-professionalism with both populations agreeing that ethics are an important aspect of their professional identities when engaged in social media use (Khana et al., 2020) and that further training and education of ethics within social media use would be an important first step. As integral as ethics are for health care students and practitioners, social media use is also often based on personal interests and values that shape online behavior. Other studies have examined the same health care discipline from different cultures as related to e-professionalism with social media use. For example, Nieminen et al. (2022) examined the e-professionalism of 613 dental students from Malaysia and Finland through a quantitative survey design study and found that both populations of students lacked professional boundaries when intentionally interacting with patients and faculty members through social media networking sites. Additionally, both populations of students gravitated towards the acceptance of social media use within their professional educations with limited cultural or country of origin variations on how they used social media technologies as health care students (Nieminen et al., 2022).

In contrast to the findings of Manca et al. (2021), who found professionals used social media to collaborate, other studies have found that health care practitioners view social media platforms as one-way communication forums where their opinions and content are much more prioritized than what is reciprocated by other social media users (Campbell et al., 2016). Through an exploratory qualitative design, Campbell et al. (2016) examined the attitudes and perceptions of 17 physicians on their perceived benefits and barriers of social media use. Respondents believed that they were able to set their own rules and procedures on how they interacted with social media users irrespective of the forum and type of communication, indicating an expressed uncertainty of the boundaries or strategies of social media use as health care practitioners. Although it is unclear if these respondents were skillful users in relation to regulating their own online behaviors as referenced by Manca et al., the lack of clarity on how and if ethics shape practitioner's social media use continues to be under investigated in the current body of research (Khana et al., 2020). Nonetheless, Campbell et al. concluded that physicians who reported using social media technologies on a regular basis were receptive towards receiving training, guidance, and education on how to maximize social media use from a technical perspective to better inform their practice. Moreover, an awareness of institutional policies and procedures governing the appropriate use of social media technologies by health care practitioners within professional settings is an area of digital citizenship that has been researched within health care disciplines, however, there continues to be a limited body of knowledge within the profession of occupational therapy.

Patient Privacy and Confidentiality

Inappropriate social media use by health care students has caused violations of patient privacy and confidentiality and therefore has been the focus of some research studies. Using a qualitative design, Westrick (2016) explored the legal and ethical implications of two nursing students' use of social media who shared patient-sensitive images without consent on social media networking sites that were not private and had unrestricted access. Data from legal documents for two court cases showed that these two students were often unclear about expectations regarding the use of social media and that privacy setting features on social media technology platforms may have created a false sense of protection. Although this was a study of only two students, it highlights the misunderstanding modern students may have with boundaries between personal and professional social media engagement. However, inappropriate social media use is not limited only to health care students. From a survey taken by 658 practicing Chinese nurses, Wang et al. (2019) investigated social media usage and online professionalism and found that nurses communicated with patients directly via social media. Further, some nurses reported posting anonymous patient information on social media, witnessing their social media friends posting identifiable patient information, and observing unprofessional social media usage by their colleagues.

Additional research has focused specifically on how health care professional attitudes might relate to them violating patient privacy. In a study of 87 practicing psychotherapists, Baier (2019) examined social media usage and the legal implications of a lack of guidelines on social media behavior and found that psychotherapists lacked an

understanding of how social media use may influence their practice and how their posts might influence how they are viewed, professionally. Results also showed how psychotherapists shared sensitive information on social media that were in violation of patient confidentiality regulations. Like the findings of Wang et al. (2019), the unclear boundary between personal and professional social media use is very much apparent within the area of health care education and practice. The ubiquitous nature of social media use seems to be eroding the boundary between personal and professional communication not only with health care students, but also with practicing professionals.

To better understand how to protect patient privacy, particularly as it relates to the Health Insurance Portability and Accountability Act of 1996 (HIPPA), researchers have examined what health care workers and students post to specific popular social media sites. Ahmed et al. (2020) used a qualitative content analysis to examine the social media posts of health professionals for public disclosure of identifiable patient information. The researchers analyzed 1,206 tweets by doctors, nurses, and other health professionals. Study findings showed that health care professionals disclosed identifiable patient information when sharing stories about patient care on social media. Although the study did not assess whether the sharing of patient information was intentional or inadvertent, this study highlights the real potential for ethical violations from health care professionals' unprofessional use of social media. As other research studies have found that health care practitioner's may be unaware of how their social media use may influence their professionalism (Baier, 2019; Wang et al., 2019), findings from these studies highlight the issue of how health care workers' social media use may influence

patients' right to privacy under HIPAA regulations and potentially cause harm to patients.

Other studies have explored user regulated privacy settings within social media networking sites such as Facebook. Facebook is a social media networking site which allows its users to set their own privacy and group membership settings for online profiles (Castrichini et al., 2021), however user's technical understanding or competencies when using such technologies has yet to be fully examined within the occupational therapy profession. Through a quantitative analysis, results showed that identifiable patient information was revealed in 13% of the Facebook posts originating from a forum or Facebook group of cardiologists (Castrichini et al., 2021). Patient identifiers used within these closed Facebook group posts included date of birth, age, gender, and geographic location. Although the results of the study showed that sharing knowledge and expertise among health care professionals was the intent of the Facebook group, the lack of regulations, awareness of privacy settings, and enforcement of health care regulations within social media usage contribute to increased unprofessional social media behavior by health care professionals (Castrichini et al., 2021).

Sharing of patient privacy information without explicit consent has legal repercussions for practitioners and their institutions (Castrichini et al., 2021), but similar concerns also apply to health care students. Students are often less aware of the ethical and legal implications of inappropriate social media use when using platforms such as Facebook, as found within another cross-sectional quantitative study (Barnable et al., 2018). The perceptions of 211 undergraduate nursing students of e-professionalism in

relation to Facebook usage showed that breaches of patient privacy occurred most frequently when nursing students were making social media posts during clinical rotations in contrast to when out of clinical learning environments (Barnable et al., 2018). The authors concluded that the nursing students lacked clarity about what constitutes unprofessional behavior on Facebook and also highlighted a difference between third- and fourth-year nursing students who were found to be making unprofessional Facebook posts less frequently than first- and second-year students (Barnable et al., 2018).

Inappropriate social media use by both health care practitioners and students using sites such as Facebook can harm patients and stakeholders when both privacy settings and standards are not used or violated (Barnable et al., 2018, Castrichini et al., 2021). Both studies highlight the lack clarity between health care practitioners and students on what constitutes ethical breaches of conduct during social media use and subsequent actions related to e-professionalism.

Social Media Competency Differences by Demographic

Another area of SMC research is related to specific demographic variables. These include, age, year of study, gender, faculty versus students.

Age and Year of Study. Other studies in health care have explored how certain demographics might influence how individuals perceive or behave related to their social media use and e-professionalism. In one study using a survey to explore 298 nursing students' perceptions and attitudes toward the responsible use of social media, Oducado et al. (2019) found that nursing students overall, had a positive attitude and perceptions about the responsible use of social media. However, first-year nursing students were

found to have a more positive attitude towards the responsible use of social media than their fourth-year seniors, for example, knowing that social media posts should be thoroughly thought out before online publication (Oducado et al., 2019). Smith and Knudson (2016) made a similar observation in their mixed-methods study of the relationship between 132 student nurses' social media behaviors, academic semester, and birth year. Results showed that second-semester students had less unethical behaviors such as posting inappropriate social media content than third- and fourth-semester students. However, this may have had more to do with the age of students as the second-semester students were also the oldest cohort by year-of-birth (Smith & Knudson, 2016). Collectively, these two studies show that simply progressing further into a nursing education program, does not necessarily mean students are better at upholding ethical and professional requirements related to social media use.

In contrast to the Oducado et al. (2019) and Smith and Knudson (206) studies, in a United Kingdom study of dental students, significant differences were not found when comparing first-year and second year cohort students, in terms of their awareness of e-professionalism standards set forth by the dental council (Dobson et al., 2019). However, despite students' awareness, data analysis of the students' social media accounts showed that inappropriate use of social media through sharing of patient-sensitive information among classmates was common among the sample of UK dental students assessed. Additionally, the dental students surveyed disagreed about what kinds of social media posts were unethical (Dobson et al., 2019). This study is significant in that it highlights that having policies and guidelines may not be enough to change student's SMC.

Collectively research shows that health care students and professionals do not always understand how to appropriately use social media.

Ahmed (2020) examined the social media use of college students and the influence towards their personal development and academic performance as it relates to digital citizenship. A total of 445 college students in Minnesota were sampled through an eleven-item survey questionnaire which examined the participants social media use frequency, influence of social media use on academic performance, and personal development in relation to institutional policies. In this study, students of lower academic rank/year reported negative perceptions of social media use as compared to their peers of a higher rank/year whereby the motivating factor of professional networking, personal growth and experience, and sought out mentorship guided a far more professional use of social media technologies between the students. The findings by Xu et al. (2018) and Ahmed revealed that SMC does vary between student populations and that institutional polices and faculty modeling can influence the variations of usage, an area presently under researched within occupational therapy education.

Gender. Studies have shown that there are gender variations in the use and misuse of social media technologies by university students. For example, a quantitative study conducted by Kircaburun et al. (2020) examined the social media usage of 1,008 college students in order to investigate the motives behind the misuse of social media technologies and which demographic characteristics contributed to this problem. Researchers found that gender does influence the type of inappropriate online behavior found during social media usage whereas participants who identified as females between

the ages of 18 and 25 were found to exhibit increased problematic social media usage which also led to higher dependence rates on social media technologies. Attributing motives found were the need to be seen and praised and as well as participants perceptions on the fear of missing out on relevant and valued online information (Kircaburun et al., 2020). Moreover, research on gender variations and the influence on social media usage by college students does add valuable knowledge on the online behaviors of students whereby other studies have sought to examine if gender variations in social media usage are also linked to mental wellness and academic performance. For example, Hou et al. (2020) examined 232 college students in a university setting in South Korea and found that social media addictive tendencies such as the frequency and duration of social media usage was more prevalent in students who identified as females and that a high number of these students had lower academic performances in courses than participants with reported less frequent social media usage. Gender variations are an important factor when examining the social media usage of college students as acknowledging the differences in online behaviors of students does contribute valuable information in informing policy and procedures related to addressing health and wellness and academic supports, such as found by Twenge and Martin (2020). Through a quantitative design, researchers examined the social media usage of students as related to their psychological health and wellbeing and found gender variations linking those who identified as females to have lower mental health wellbeing and resilience when engaged in frequent social media usage than students who identified as males. Moreover, the findings of this study also linked strategies for educators in designing programs related to

the prevalence of social media usage of students in addressing correlated health issues such as aggression, lethargy, and low mental stamina. The findings from Kircaburun et al. and Hou et al. do suggest that gender variations are prevalent in the social media usage by college students and that educators can use this information in supporting students to meet their academic goals (Twenge & Martin, 2020), however this also continues to be an area presently under-researched within occupational therapy education.

Faculty Versus Students. Users' past experiences can often influence how they incorporate social media technologies into areas such as forming online identities and the display of e-professionalism. In a cross-sectional quantitative study, Duke et al. (2017) assessed the social media use and e-professionalism among faculty and students in nursing education. Survey data were collected from 337 students and 29 faculty members. The researchers found that students used social media for academic purposes more frequently than faculty. The researchers described faculty as digital immigrants, a term that alludes to the generational divide between faculty and students such that faculty are more likely to adopt social media at an older age compared to the relatively younger students. However, faculty members were less likely to post inappropriate information on social media as compared to students. Such results are similar to the findings of Carpenter and Harvey (2019) whereby faculty persons were less likely to post content that they perceived could be interpreted as inappropriate by spectating students. Similar to the findings of Peruta and Shields (2017), social media technologies within higher education are often governed by policies and procedures within higher education and faculty driven in relationship to modeled behavior, however, social media use amongst

health care students can also create uncertainties in relationship to how to effectively use such technologies for academic learning purposes (Al-Alami et al., 2022). Although Duke et al. revealed faculty had a greater degree of awareness of actions that can potentially constitute as unprofessional online behavior, the same cannot be stated for occupational therapy student's level of competency and awareness within social media use which has yet to be fully explored within the current body of research.

Addressing Social Media Issues in Health Care

The next section of the literature review will highlight research focused on communicating, e-professionalism, and on ways research has shown to improve SMC.

Communicating E-Professionalism Expectations

To address the patient privacy issues that inappropriate social media use in health care can cause, universities and organizations have sought to find a variety of ways to communicate ethical e-professionalism. One way to communicate expectations is to develop institutional policies. Institutional policies and procedures can often provide guidance on how social media technologies can be used within the context of education. Peruta and Shields (2017), conducted a quantitative research design using content analysis to examine the social media techniques employed by higher education institutions in the United States. A sample of 66 higher education institutions were analyzed and researchers concluded that social media behavior is largely influenced by the intent of both faculty and campus administration in relationship to developing policies and procedures on social media usage and intent. Additionally, social media use is largely utilized by faculty and campus administration to convey information and market campus

related resources with minimal awareness on how the content influences the student body (Peruta & Shields, 2017). Although social media technologies have been found to be an effective communication tool between students and faculty (Sobaih et al., 2022), the integration of policies and procedures of how such technologies should be used as instructional aids and resource tools within the academic context continues to present challenges for ethical and appropriate social media use by health care students (Peruta & Shields, 2017; Siddiqui & Singh, 2016). Peruta and Shields found that higher education campuses are responsible for establishing policies and procedures related to social media usage but lack the understanding on how that content is interpreted by users which is related to the intent of the SMCS-CS as a basis of measuring competency within social media use (S. Zhu et al., 2020). As research continues to explore the academic use of social media technologies by faculty within higher education, an additional waive of research studies are examining the use of social media technologies in addressing social communication and mental wellness within the academic context.

Other studies have examined how policies and procedures have influenced social media use once they are in place in the organization. Integrating polices and procedures that facilitate an open communication channel is an important aspect for the adoption of polices and procedures as related to e-professionalism by students, such as those with nursing students transitioning from academia to clinical practice who understand the benefits of social media use as clinicians but lack the understanding of its ethical use (Isik & Jallad, 2019). For example, using a survey to evaluate health care workers use and awareness of social media policies, results from 366 health care workers showed that

while physicians had more awareness of social media policy than nurses, most other health care workers in the study reported having no awareness (Surani et al., 2017). Data also showed a statistical significant link between this lack of awareness and patient confidentiality violations (Surani et al., 2017). Similarly, in Wang et al.'s (2019) study, one-third of the nurses reported not knowing whether the health care facilities where they work had policies regarding social media usage. Many researchers have observed that students and health care professionals engaged in unethical social media behavior due to a lack of awareness and clarity about expectations regarding the professional use of social media (Baier, 2019; Ricciardelli et al., 2020; Surani et al., 2017). These studies show that SMC and the lack of procedures and guidelines for social media use among health care students and professionals is one of the contributors to inappropriate social media use (Rozgonjuk et al., 2018; Surani et al., 2017). However, even when policies and procedures are in place, health care workers and students are often unaware of the policies and procedures and lack the appropriate education (Dobson et al., 2019).

Additional studies have examined if institutional policies and procedures influence practitioner's use of social media technologies and how it has influenced practice. In a cross-sectional quantitative study conducted by Khan et al. (2021), researchers examined how doctors, nurses, and pharmacists utilized social media technologies within professional workplace settings and whether institutional polices influenced their online behavior. Results indicated that out of 158 respondents, 75% of respondents reported using social media technologies within the workplace context and that 40% of the sample population were completely unaware of institutional polices

regarding the use of online media. This highlights that even though digital citizenship includes an awareness of online etiquette, health care practitioners remain unclear of the parameters of how online activity influences ethical implications towards best practice. Similar to the findings of Khan et al., (2021) Naeem and Ozuem (2021) examined the social media use of health care practitioners and implications towards institutional policies and procedures. In semi structured interviews, respondents shared that they believed that social media use within the workplace enhanced workplace interaction and communication between professionals (Naeem & Ozuem, 2021). However, they also agreed that personal social media use created unexpected ethical violations related to sharing of patient sensitive information through instant messaging and public social media profiles. Results also showed that professionals were unaware of how institutional polices influenced how they personally used social media technologies within the workplace which created areas of uncertainty, confusion and insecurities during social media usage. According to the reviewed research, health care practitioners believe their social media use, whether used for personal or professional means within the professional context, are considered siloed activities to the workplace policies and procedures that are designed to provide guidance to such activity (Khan et al., 2021; Naeem & Ozuem, 2021).

Examining an individual's SMC is one-way researchers are exploring the social media use in health care . Therefore, developing instruments for studying SMC of students are being used to measure students' SMC with the intend to improve their competencies (Geyer et al., 2020; Ricciardelli et al., 2020). These approaches include

assessing the awareness and level of clarity among students about guidelines and expectations of professional conduct when using social media and designing and providing training interventions for different student cohorts based on their respective SMC needs (Smith & Knudson, 2016). These approaches have been implemented in medical, dental, and nursing students. However, there are no available studies that examine the SMC of OTS by demographic characteristics. This is especially important considering that unexpected patterns of variation were observed in students' SMC by age and academic year cohort (Dobson et al., 2019; Smith & Knudson, 2016).

Training to Improve SMC

To address the problem of social media use in health care, some medical schools have examined whether including training as part of the curriculum might be a potential solution. In a qualitative descriptive study by Geyer et al. (2020), 18 third-year medical students were evaluated on the outcomes of a social media and online professionalism course integrated into the obstetrics and gynecology clerkship curriculum within a university setting. Geyer et al. found that training in online professionalism increased the students' awareness of expectations for professional behavior when using social media. The training also made the students more competent in content generation and anticipatory reflection, leading to a reduction in the likelihood of unethical behaviors like sharing patient-sensitive information with persons not directly involved in providing patient care among the medical students (Geyer et al., 2020). The literature shows that having policies is not enough to make a difference in helping to improve social media

competency, but that training integrated into the curriculum might help to improve confidentiality issues that surround social media use in health care.

In addition to communicating e-professionalism expectations via policies and regulations, the importance of social media use training is another area of research in health care . Interdisciplinary health care education varies greatly on the incorporation of e-professionalism and social media use education as it relates to ethics and practice guidelines for students. Students who lack social media education and training with academia are often blurring the lines between the professional and personal use of social media within health care practice, such as in the case of midwifery students in a univeristy setting in Australia (Griffin et al., 2021). Researchers examined 311 midwifery students through a cross-sectional study and found that although social media use was widespread amongst students, there was limited understanding between the difference of professional and personal social media use (Griffin et al., 2021). Although students may be aware of the potential risk of social media usage within practice, the education of how to integrate social media use within practice through an ethical lens is lacking within academia (Griffin et al., 2021; Isik & Jallad, 2019). In one study, Hussain et al. (2021) used a quantitative cross-sectional study design to examine pharmacy and medical students' attitudes and perceptions about social media usage and e-professionalism. The researchers collected data from 325 pharmacy students and 250 medical students from undergraduate programs in universities in Saudi Arabia. The data were analyzed using Chi-square tests and *t* tests to compare pharmacy and medical students on categorical and quantitative variables, respectively. The researchers found that medical students were

more likely to engage in professional social media behavior than pharmacy students. Medical students in this study were also more likely to feel accountable for the influence of their social media posts on privacy and ethical violations (Hussain et al., 2021). The researchers concluded that these findings were due to the training and guidance regarding e-professionalism and medical ethics that medical students received as part of their training, however pharmacy students did not receive such training in professional social media usage and reported a lack of awareness on the influence of their social media use (Hussain et al., 2021) which previous research has shown to be effective in enhancing students awareness of e-professionalism implications (Geyer et al., 2020). Furthermore, even though health care students are educated and trained to develop entry-level professional competency when they go into practice, inappropriate social media usage within clinical education does result in violations of professional conduct (Barnable et al., 2018; Hussain et al., 2021). Despite a high prevalence of both health care students and practitioners using social media technologies within both academic and clinical learning environments (Ahmet et al., 2020; Castrichini et al., 2021) the absence of guidelines and education continues to allow both populations on committing social media use related infringements towards ethics, professionalism, and the safety of their consumers (Geyer et al., 2020; Smith & Knudson, 2016). In some instances, students and health care professionals were unsure of which social media posts constituted a violation of patient privacy and confidentiality (Wang et al., 2019; Westrick, 2016), however findings from Baier (2019), Ricciardelli et al. (2020), Surani et al. (2017), Westrick (2016), and Wang

et al. (2019) highlighted the role of SMC in shaping and regulating social media behavior.

The academic context is a viable starting place in the assessment of SMC of developing and bridging the gap between health care students and practitioners as research showed that integrating ethical guidelines work effectively when health care workers have the requisite SMC to comply with the guidelines (Ahmed et al., 2020; Castrichini et al., 2021). Although researchers have explored various approaches to increasing the SMC of health care professionals (Barnable et al., 2018), additional research has further explored the implications towards e-professionalism training and education for health care students in order to enhance their understanding of ethical implications of social media use as professionals (Hussain et al., 2021). Thus, research reviewed in this section shows that violations of patient privacy and confidentiality result from unprofessional social media usage by health care professionals and can be attenuated by increasing the SMC of health care professionals (Ahmed at al., 2020; Barnable et al., 2018; Castrichini et al., 2021; Hussain et al., 2021).

Although training and curriculum are being implemented to improve students' SMC, some research shows that competencies are more often shaped by personal values and the process of relational interaction online (Manca et al., 2021). Manca et al. (2021) systematically reviewed 54 primary studies on social media practices in education to identify and describe how social media skills are acquired for responsible participation in the digital space. The 54 articles reviewed in this study were published between 2009 – 2014. Findings from primary studies reviewed showed that social media skills were

typically developed based on individual cognition. That is, individual social media users acquired social media literacy primarily through their own experimenting to find out what works (Manca et al., 2021). An individual's social media behavior is shaped more by the individual's personal values than any external influence. In contrast to this finding that social media behavior is shaped more by personal values than external influences, the researchers argued that social media literacy transcends individual processes and emerges through relational processes of social interaction. These relational processes of social interaction are driven by both global and local influences. These global and local influences serve as checks and balances for how people use social media and that skillful social media users have the breadth of SMC to regulate their behavior when they participate as digital citizens in online communities (Manca et al., 2021).

Summary and Conclusions

In Chapter 2, I summarized and discussed a comprehensive review of research conducted on the social media usage by health care students and professionals. One of the emerging themes I found in the literature review were the issues concerning social media use by health care students and faculty, the importance of modeling proper social media use as well as how social media usage relates to e-professionalism and digital citizenship. The reviewed studies showed a clear overall negative influence of unprofessional social media usage and highlight the role of SMC as a predictor of how appropriately health care students and professionals engage with social media. For example, students with a higher frequency of social media usage had significantly lower academic performance measures than those with less frequent social media usage which also subsequently

influenced student's overall ethics and professionalism (Ricciardelli et al., 2020; Rozgonjuk et al. 2018). Although many educators do not believe in the efficacy and merit on the use of social media technologies within higher education settings (Siddiqui & Singh, 2016; Sobaih et al., 2022), research does highlight that students heavily supplement their formal academic learning with social media content (Lima et al., 2020; Zarzycka et al., 2021) and that modeled behaviors of educators and clinicians inappropriately using social media can facilitate students to engage in unprofessional online activity (Manca et al., 2021; Xu et al., 2018).

This literature review also revealed the risks of unprofessional social media behavior for health care students and professionals. The studies reviewed showed that although, the boundaries between personal and professional communications are blurred online, health care students and practitioners are still expected to have the breadth of SMC to maintain e-professionalism (Panahi et al., 2016; Xu et al., 2018). Despite the literature exploring a lack of SMC amongst health care students in the fields of dentistry (Dobson et al., 2019), medicine (Hussain et al., 2021), nursing (Oducado et al., 2019), and pharmacy (Geyer et al., 2020), a clear gap within the literature remains about the practice of OTS. This issue is further highlighted by the increasing integration of social media technologies within higher education settings. Research has shown that college students prefer to use social media technologies as a part of their academic learning activities (Nadeak, 2020) which also correlates to academic institutions increasingly adopting social media technologies as a part of their remote learning platforms (Papademetriou et al., 2022). This review of extant literature showed that SMC is an

important determinant of e-professionalism among health care students and professionals. Although the literature shows that social media technologies are being integrated into higher education, inappropriate social media usage by faculty and students continues to undermine the reputations of academic institutions irrespective of established policies and procedures (Baier, 2019; Castrichini et al., 2021). Although higher education faculty are more aware of which behaviors constituted e-professionalism when using social media technologies (Duke et al., 2017), university educators were nonetheless found to be less likely to post offensive and inappropriate content through social media technologies (Carpenter & Harvey, 2019). This issue is further substantiated by the literature which highlighted that health care professionals lacked awareness and understanding of behaviors related to e-professionalism within social media platforms (Baier, 2019; Barnable et al., 2018). SMC studies have investigated the variations of SMC between educators and health care professionals but there continues to be a gap within the area of occupational therapy education in relation to if students are aware of their online actions may influence their current and future practice. Individual characteristics like age also influence SMC with younger students misusing social media technologies at higher rates than their older counterparts (Smith & Knudson, 2016) as well as variations based on academic ranks whereby students of higher academic rank were more aware of their SMC as compared to lower academic ranked peers (Barnable et al., 2018; Oducado et al., 2019). Although studies have explored SMC within various areas of health care education, the literature does not show whether OTSs and their e-professionalism is related to their SMC within academic and clinical learning environments.

Another emerging theme from the literature review was the unethical behaviors by health care students during social media usage. Health care students reported not receiving training or guidance on how to integrate social media usage within academic and clinical learning spaces (Hussain et al., 2021; Khana et al., 2020; Surani et al., 2017) although additional research showed that health care students remain generally receptive towards receiving guidance on how to improve their SMC (Ahmed, 2020; Naeem & Ozuem, 2021; Ricciardelli et al., 2020). Additional research has shown that there are variations of SMC amongst health care students as based on academic rank whereby higher ranking or students of senior cohorts utilized social media technologies with a higher level of digital citizenship than those of their lower ranked peers (Barnable et al., 2018; Oducado et al., 2019; Smith & Knudson, 2016). Other research has explored the efficacy of integrating digital citizenship into the higher education curriculum to address areas student's e-professionalism. Studies have shown a positive effect on student's SMC when concepts related to digital citizenship are integrated into learning modules (Al-Abdullatif & Gameil, 2020; Xu et al., 2018) in conjunction to other research demonstrating effective faculty modeling also contributing to increased SMC of students (Manca et al., 2021; Panahi et al., 2016; X. Zhu et al., 2021). Most research has been on college students and health care students of various disciplines, however there is no research on the efficacy of digital citizenship learning within occupational therapy as SMC has yet to be thoroughly investigated.

The final theme discussed in the literature review was on addressing social media issues in health care . Studies have shown that health care professionals do violate code

of ethics when using social media technologies as attributed to adopting the online behaviors of their colleagues (Manca et al., 2021) similar to Baier (2019) and Castrichini et al. (2021) who found that a lack of understanding of how to appropriately use social media technologies as health care professionals also attributes to inappropriate social media usage by health care professionals. Additional research attributes the lack of clarity of policies and procedures related to how health care practitioners should integrate appropriate social media usage within the work setting (Campbell et al., 2016; Geyer et al., 2020; Naeem & Ozuem, 2021) whereas additional research supports the inclusion of training and competency outcomes related to social media usage to address SMC for health care practitioners (Baier, 2019; Ricciardelli et al., 2020; Surani et al., 2017; Wang et al., 2019). It is unknown whether SMC training to address e-professionalism can benefit the field of occupational therapy as SMC has not been researched within OTS.

While studies have explored SMC in nursing, dental, pharmacy, and medical students, little is known about SMC in OTS and professionals. The current literature reveals limited research on the SMC of OTS as it relates to digital citizenship and e-professionalism within both academic and clinical learning spaces despite recorded and observed occurrences of ethical and patient confidentiality violations through social media usage. The current study was designed to fill this gap in literature by using a quantitative research design to assess the SMC of OTS at a university in a NE state. The research methodology was discussed in Chapter 3.

Chapter 3: Research Method

The purpose of this quantitative study was to assess the SMC of OTSs at a university in a NE state and how their SMC was influenced by year of study, age, and gender. In this chapter, I describe the research design and rationale for its use in the study. I also discuss the sample, sampling procedure, and data sources. Furthermore, the constructs and variables of interest are defined, the plan to analyze the data is described, and the validity and ethical considerations for this study are discussed.

The RQs for this study were:

RQ1: What is the difference in OTSs' SMC score based on students' year of study (i.e., first-, second-, third-, and fourth-year designations) at a university in a NE state?

RQ2: What is the difference in OTSs' SMC score based on age at a university in a NE state?

RQ3: What is the difference in OTSs' SMC score based on gender at a university in a NE state?

Research Design and Rationale

For this study, I used a quantitative cross-sectional research design to investigate the SMC of OTSs at a university in a NE state. I selected a quantitative approach because quantitative research is used to answer questions pertaining to the relationships, real or suspected, that exist between two or more variables, as was the case in this current study (see Bloomfield & Fisher, 2019.) Further, quantitative study designs have the advantage of handling a large amount of data using statistical methods while minimizing bias

because the process often does not require the researcher's personal interpretation of the data (Bloomfield & Fisher, 2019). Quantitative study findings are also more generalizable than findings from other research methods like qualitative research due to their ability to account for multiple characteristics of study participants in data analysis (Bryman, 2016; Fairbrother, 2014).

In this study, I employed a cross-sectional design that came with some limitations and constraints. First, since the archival data were obtained via a one-time measurement of both dependent and independent variables, it was difficult to determine causality, as noted by Barnes et al. (2018) who stated that research shows the difficulty in obtaining causality from retrospective-based studies. Changes in the SMC of OTSs over time also could not be assessed using cross-sectional archival data, which was also limited by the variables collected at the time of data collection (see Setia, 2016).

The constraints and limitations of the research design for this study notwithstanding, this design choice was consistent with the research designs needed to advance knowledge about professional social media behavior in occupational therapy and health care. For instance, Balakrishnan and Gan (2016) explored the predictive relationship between perceptions of self, performance, and social media use among college students using a quantitative cross-sectional study design to compare social media usage of the college students in their study across demographic characteristics. They found that students' perceived identity and self-efficacy were significantly associated with social media usage (Balakrishnan & Gan, 2016). In another study, Dobson et al. (2019) used a quantitative cross-sectional study design to assess e-professionalism

perceptions among dental students in the United Kingdom. They concluded that students' perceptions of and attitudes towards e-professionalism were dependent on various contextual factors. In a quantitative cross-sectional study of perceptions and awareness about institutional policies regarding the use of social media, Lefebvre et al. (2020) used an anonymous survey to collect data from a sample of nurses drawn from all clinical departments in a large hospital. Bivariate analyses of the data showed that clarity about policies on e-professionalism was significantly associated positively with the professional use of social media among nurses (Lefebvre et al., 2020).

The findings of Balakrishnan and Gan (2016), Dobson et al. (2019), and Lefebvre et al. (2020) provided evidence that a quantitative, retrospective, cross-sectional study design can be used to advance knowledge about e-professionalism regarding the use of social media among OTSs. Moreover, the quantitative cross-sectional study design is a convenient research design for testing hypotheses and making inferences about the relationship between two or more variables in educational studies, particularly when experimental procedures are not feasible due to the inability to use randomization as well as concerns about the ethicality of randomizing people to treatment and control groups (Ary et al., 2018). While the effects observed in cross-sectional surveys may be difficult to interpret due to confounding variables and a lack of temporal precedence in how the dependent and independent variables are measured, the hypotheses tested are essential for developing comparisons in future educational research (Ary et al., 2018).

Methodology

The archived, online survey population included data from 180 OTSs who were enrolled in a graduate-level occupational therapy program at the time of data collection. The course instructor, a faculty member of the academic program, administered the survey as a required component of classwork and disseminated and collected the data through a secure survey software sanctioned by the academic institution. Only registered students for academic courses within the curriculum were included as part of the data collection and excluded those who were not registered or withdrew from courses in the survey population. The archival data set remains under the management of the study site's program administrator who is designated to manage the program's internal data.

In this section, I describe the population and related sampling procedures as well as the treatment of the archival data set. This section also contains a discussion of the instrument used to collect the archived data, including the operationalization of constructs, how each variable was measured, and the calculation and representation of the scores. In this section, I also provide a detailed data analysis plan, including the software used for data analysis and the specific statistical tests and assumptions as well as the consideration of the threats to validity and ethical procedures.

Population

The setting for this research study was a university in a NE state. The university offers both undergraduate- and graduate-level academic programs and is situated in a densely populated, urban metropolis. The occupational therapy academic program is designed to provide a graduate-level occupational therapy education, which was the

terminal degree for the profession at the time of this study. Students entering the occupational therapy graduate-level program must have possessed a baccalaureate degree in either arts or science from an accredited institution and must have successfully met the admissions requirements for matriculation into the program that are based on academic and nonacademic components. Since the academic program is a graduate-level program, the age range of students varies considerably as compared to an undergraduate program in occupational therapy, which is presently at the associate of science level. Furthermore, although the profession at the national level is mainly compromised of White females racially (American Occupational Therapy Association, 2021,) the diversity of the program at the study site university varies considerably based on reported ethnicity and race. The graduate program in occupational therapy at the study site university comprised approximately 180 students across the four year-of-study cohorts during the period of data collection. Students received classroom instruction and engaged in required clinical rotations as part of their training. A learning management system was used to coordinate both in-person and off-campus/online learning activities.

I used archived survey data from a population of graduate level OTSs enrolled at the study university during the academic year of 2021–2022. The archived data for this study were collected by the program as a part of its annual outcome assessment processes. The population consisted of graduate-level OTSs who had met the admissions and academic requirements to hold matriculation within the university. The students were grouped into cohorts based on their academic year of study, which consisted of two academic cohorts within the didactic portion of the curriculum and two cohorts in a mix

of clinical and didactic learning. Each cohort consisted of 40–45 students who were predominantly within full-time tracks, with some in the deaccelerated, part-time track; therefore, each cohort's total student census varied between the above range with a total program census of 180 at the time of data collection. Each cohort engaged in both didactic and clinical coursework in an established curricular 4-year sequence of study in order to meet the academic requirements to successfully graduate from the program with a master of science degree. The sample of students for this study represents a census of graduate OTSs in the profession because the graduate degree is the present terminal degree for the profession.

Sampling Procedures

Once I obtained the archival data set from the academic program, I drew a census sample of OTSs from the data collection period of 2021 for the study. Because each cohort consisted of 40–45 students, the entire sample was 184 students at the time of data collection. A census sampling method is an approach used in quantitative research in which data are obtained from every individual in the defined study population (Mujere, 2016). Census sampling is useful when the available population for the study is small, yet statistical power requirements need to be met (Lavrakas, 2008). Hence, the sample for this study included every occupational therapy graduate student enrolled and who had completed a mandatory survey as part of a professional development experience within the academic curriculum. A course instructor digitally administered the SMCS-CS via a Qualtrics XM software distribution email link to students in the Fall 2021 academic semester. The course syllabus for the designated course in which the survey is annually

distributed described the purpose of the survey as “a measure of academic and clinical professional development as it relates to e-professionalism through the use of social media technology within occupational therapy education.”. There were 184 graduate students enrolled for the Summer 2021 academic semester across four cohorts based on their academic year; however, some students did not matriculate, leaving a final sample of 180 matriculated graduate students for the Fall 2021 academic semester.

I conducted an a priori power analysis using G*Power, Version 3.1.9.7. G*Power was designed as a general standalone power analysis program for statistical tests commonly used in the social and behavioral sciences and research (Faul et al., 2007). The ANOVA-fixed effects/omnibus/one-way was selected as the statistical test from the *F* tests test family in the software. In the power/sample size estimation, I used a medium effect size ($f = 0.25$) and an alpha of .05 as input parameters based on the best practices recommended by Kline (2017). RQ1 involved four student academic-year cohorts, RQ2 involved data related to students’ reported age, and RQ3 involved data related to students’ reported gender. Results of the power analysis showed that a sample of 128 was needed to achieve a power of 0.8 for two group comparison, while a sample size of 180 was required to achieve a power of 0.8 for four group comparisons. Because the estimated sample is the total available of the census, all 180 matriculated occupational therapy graduate students were appropriate to be included in the data analysis.

Intervention/Treatment

In this study, I employed a quantitative cross-sectional research design and analyzed archival data collected by an occupational therapy academic program at a

university in a NE state. Hence, a formal intervention or treatment component was not a component of the research study design.

Archival Data

I used archived data collected using the SCMS-CS for this study. The SCMS-CS was administered to graduate students in occupational therapy in Fall 2021 by a faculty member. Students received a link to the survey in an email along with information about the purpose of the survey. The faculty member distributed the survey link both through the institutional email server and within the dedicated learning management system. Students were informed of the timeline to complete the survey in advance through the course syllabus for that academic semester and were provided with email reminders as needed. Survey data were automatically archived by the academic program upon survey completion by the students and stored within a secure institutional database, which is only accessible by the program coordinator.

To gain access to the data set for the current study, I first sought permission from the study site university's institutional review board (IRB) since the data were local to the academic program and collected from the student population. Upon gaining formal permission from the study site university, I then sought formal IRB approval from Walden University since the study was conducted as a part of my dissertation. The Walden University IRB approval number for this study is 12-29-22-0750126. When IRB approval was granted from both institutions, I sent a formal email request to the program administrator for the occupational therapy program at the study site university asking for permission to access the archival data. The email request contained details regarding the

purpose of my research study and procedures for handling the data during and after the completion of the study. I also requested that the data be de-identified and provided to me in a Microsoft Excel output format upon exporting the file from its original Qualtrics XM software. I specifically requested access for de-identified data only from the program administrator because de-identifying the data were not my responsibility.

Instrumentation and Operationalization of Constructs

S. Zhu et al. (2020) developed the SMCS-CS. I emailed the corresponding author Yang, requesting permission to use the SMCS-CS in this study and received their permission. The SMCS-CS was designed to measure the SMC of college students along four dimensions or constructs: content generation, content interpretation, technical usability, and anticipatory reflection. In this study, the dependent variable was the total accumulated score of the SMCS-CS, which consisted of four dimensions. Each dimension of the SMCS-CS measures the participant's responses based on a 5-point Likert scale from variations of *strongly disagree* to *strongly agree*. The first dimension, technical usability, is assessed from Items 1 through 5 of the SMCS-CS, Items 6 through 12 constitute content interpretation, Items 13 through 19 are for content generation, and the remaining items 20 through 28 are for anticipatory reflection. The independent variables for this study were two between-subjects demographic characteristics, each mapped to a RQ. For RQ1, the independent variable was students' academic year, which included first-, second-, third-, and fourth-year OTSs. The independent variable for RQ2 was students' age, and the independent variable for RQ3 was students' gender.

The four survey constructs allowed for a detailed examination into how SMC is utilized, generated, interpreted, and generalized to explore how occupational therapy college students could potentially use this skill set within academic and clinical education settings (see S. Zhu et al., 2020). The SMCS-CS was emailed by the author with instructions on appropriate citation use. The SMCS-CS was the most applicable survey instrument for the current study for the following reasons. The sample population of the current study was university students, which the SMCS-CS utilized as its preliminary target population when affirming its validity and reliability standards (see S. Zhu et al., 2020). The SMCS-CS was also designed to measure the user's competency with social media use and not attitudes, perceptions, or levels of perceived anxiety as other instruments have (Alber et al., 2015; Knezek et al., 2012; Marelić et al., 2021). For example, the Social Media Competency Inventory as developed by Alber et al. (2015) examined the SMC of certified health education specialists and master certified health education specialists as its target population when assessing its validity and reliability, which was not applicable to the population of college students in the current study. Additionally, the SMCS-CS was created to measure competency and not attitudes or perceptions, whereas the Social Media E-Professionalism Scale-Student as developed by Marelić et al. (2021) was designed to measure the attitudes and perceptions of e-professionalism of medical and dental students. Furthermore, other scales have been developed in order to measure the social media user's perceived anxiety when using social media technologies for college students, such as the Social Media Anxiety for Social Media Users as developed by Alkis et al. (2017), which used a four-dimensional

structure to assess the user's social anxiety, content anxiety, privacy anxiety and self-evaluation anxiety. The Social Media Learning Scale as developed by Knezek et al. (2012) was designed to help understand the undergraduate student reaction to social media applications, such as Twitter and Facebook, to support the undergraduate university curriculum. In conclusion, although the SMCS-CS instrument was developed and validated with college students from mainland China, previous studies have demonstrated that there are limited cross-cultural variations within social media use as related to the differences of country of origin and the social media user's activity as in the case of United States and Chinese social media users (Qiu et al., 2013; Xu et al., 2018). Culture is dynamic and temporal when correlating its influence on social media use instead of just a user's country of origin (Xu et al., 2018). Additionally, other studies have shown that the personal characteristics of the social media user has a larger influence of how they use social media networking sites as opposed to their racial or ethnic cultures as in the case of Chinese university students as compared to U.S. university students (Jackson & Wang, 2013). Other studies have examined the culture of online networks where the social media use of U.S. and Chinese users for example were not seen as an impactful factor on users engaged in social media activities because social media engagement within the virtual context was heavily influenced by online cultures within each social networking sites, such as Facebook, Instagram, and Twitter cultures, respectively (Qiu et al., 2013).

The authors of the SMCS-CS performed exploratory and confirmatory factor analyses to evaluate the construct validity of the scale using a sample of 622 college

students from a normal university in China (S. Zhu et al., 2020). A normal university is an institution where teachers are trained and prepared for higher education. The exploratory factor analysis indicated that the items on the SMCS-CS represent four constructs as hypothesized by the authors, and together, the items on the SMCS-CS explained 87.5% of the total variance. The authors also determined the items on each of the four dimensions represented on the SMCS-CS to have high internal consistency reliability based on values of Cronbach's alpha (0.92 for technical usability, 0.94 for content interpretation, 0.95 for content generation, and 0.95 for anticipatory reflection) all greater than 0.70. Also, the Cronbach's alpha for the entire SMCS-CS was 0.97 (DeVellis, 2003). Furthermore, the authors confirmed the factor structure of the SMCS-CS using confirmatory factor analysis. They found the hypothesized four-factor structure to have the best fit based on the following fit indices: RSMEA = 0.077, GFI = 0.82, CFI = 0.94, NFI = 0.91, and $\chi^2_{(342)} = 963.902$, $p < 0.001$ (S. Zhu et al., 2020).

The SCMS-CS is a 28-item survey. These 28-items were designed to be distributed across the four dimensions of SMC. Items 1 to 5 assess technical usability and include statements like "I can use basic social media operating tools." Items 6 to 12 assess content interpretation. An example item is "I can understand and interpret social media contents from the political, economic, and social perspectives." Items 13 to 19 assess content generation and include statements like "I can collaborate and communicate with different social media users." Items 20 to 28 assess anticipatory reflection. An example item is "I would consider the possible consequence before using social media to

write something." The SMCS-CS also collects information about respondents' gender and academic year of study (S. Zhu et al., 2020).

Data Analysis Plan

I used the Statistical Package for the Social Sciences Version 28 (SPSS V28) to analyze the SCMS-CS data. The archived data were de-identified prior to my analysis. Each question on the digital survey was reinforced with a forced response criteria using the Qualtrics software which negated missing values from each participants survey submissions. The data set was wiped for any internet protocol addresses linked to survey respondents to preserve their anonymity. For these analyses, the dependent variable will be operationalized by calculating a summary score for the total sum of the SMCS-CS for each student.

Two between-subject variables were used as independent variables in this study. These are students' age and year of study. Age is measured as a continuous variable in years and was converted into a categorical variable based on the median age in order to perform a statistical analysis using the *t* test. Year of study is a categorical variable with four categories coded as 1 for academic year 1, 2 for academic year 2, 3 for academic year 3, and 4 for academic year 4. Statistical analyses of the data will be done to answer the following RQs and test the hypotheses. Gender was a categorical variable, and a *t* test was used to assess the differences in the SMCS-CS between the categories of male and female.

I began data analysis by running descriptive statistics to explore the distribution of the data. I used histograms to visually assess distribution.

RQ1: What is the difference of OTS SMC score based on year of study (first, second, third, and fourth year designations) at a university in a NE state?

$H_0$2: There is no statistically significant difference of OTS SMC score based on year of study at a university in a NE state.

$H_1$2:There is a statistically significant difference of OTS SMC score based on year of study at a university in a NE state.

For RQ1, I used analysis of variance (ANOVA) to test if the students differ in their SMC scores based on their respective year of study.

RQ2: What is the difference in OTS SMC score based on age at a university in a NE state?

$H_0$3: There are no statistically significant difference in OTS SMC score based on age at a university in a NE state.

$H_1$3: There are statistically significant differences in OTS SMC score based on age at a university in a NE state.

For RQ2, I used independent samples *t* test to determine if the SMC scores of OTSs differ by age.

RQ3: What is the difference in OTS SMC score based on gender at a university in a NE state?

For RQ3, I used an independent sample *t* test to determine if SMC scores of OTS differ according to their selected gender based on groupings of two (male, female).

$H_0$3: There are no statistically significant difference in OTS SMC score based on gender at a university in a NE state.

H_a3: There is a statistically significant differences in OTS SMC score based on age at a university in a NE state.

In all these analyses, *F* value for ANOVA in combination with *p* values was used to establish statistical significance. The threshold for statistical significance was set at *p* value less than .05.

Threats to Validity

Internal validity is "the extent to which it is possible to make an inference that the independent variable is truly causing or influencing the dependent variable and that the relationship between the two is not the spurious effect of a confounding variable" (Polit & Beck, 2008, p. 295). Another threat to the internal validity of this study are unmeasured confounding variables that can explain the observed effects (Skelly et al., 2012). For instance, based on the data available, it is impossible to determine how the cognitive ability of students may influence their perception of SMC. Students in the latter years of their graduate program may be more adept at managing social media technology during active learning sessions due to their academic and clinical experiences involving the use of social media technology. However, it is also probable that students in the early stages of their graduate program may have had further experience with using social media technology during active learning prior to enrolling in the graduate program (Smith & Knudson, 2016; Tuominen et al., 2014). Hence, previous experiences with social media technology in a learning environment and individual cognitive abilities represent unmeasured confounders that pose a threat to the internal validity of this study as noted in.

External validity is the extent to which the observed relationships of effects remain consistent over variations in data, study sample, and research settings and conditions (Polit & Beck, 2008). For this study I used data obtained in the Fall 2021 academic semester from graduate students in occupational therapy. In assessing the construct of SMC, this study did not account for the effect of extant policies of the academic program regarding how students use social media usage during active learning sessions or other environmental attributes of the research setting, an implicit assumption that the policies regarding social media usage by students in occupational therapy graduate programs are similar regardless of their geographical location. This assumption is not likely to be true. Hence, observed relationships in this study may not generalize to other occupational therapy academic settings, (see Ferguson, 2004).

Ethical Procedures

The first ethical procedure is related to how I obtained the archived data. First, I sought IRB approval from a university in a NE state to gain access to the archival data. Upon receiving IRB approval, I then sought IRB approval from Walden University before formally conducting this research study in relation to my dissertation. Upon receiving IRB approval from a university in a NE state and Walden University, I then sent a formal request to the occupational therapy graduate program administrator at a university in a NE state asking for permission to access the archived SMCS-CS data.

Although I did not have contact with participants directly, another ethical procedure I followed was related to how I treat and protect the study data. The data were given to me in a Microsoft Excel file by the program administrator and was already

deidentified for any sensitive or personal student information. I then stored the archived data set on my password-secured institutional laptop in my secured access work office. Access to this data set was limited to myself and to the committee members from Walden University. The data were used only for the research study as described and approved. I will destroy the data from 5 years of completion of the study, as per Walden requirements.

Summary

In this chapter, I discussed the research study design and methodology for this study. I used a quantitative cross-sectional research design to investigate the SMC of graduate OTS at a university in a NE state. Also, being investigated was whether SMC of students may vary based on demographic characteristics. The data for this study is archival data obtained from a survey of matriculated graduate OTS in Fall 2021. The data were collected using the SMCS-CS. Statistical analysis was performed using Microsoft Excel software. Threats to validity and ethical consideration were also discussed. Chapter 4 will detail the study findings.

Chapter 4: Results

The purpose of this quantitative study was to assess the SMC of OTSs at a university in a NE state and how their SMC is influenced by year of study, age, and gender. To accomplish this purpose, I analyzed archival data to examine the differences between OTSs' year of study, age, gender, and SMCS-CS scores using ANOVA through an analysis of archival data. For the purposes of organization and to present the results in the following sections of Chapter 4, the independent variables of the OTS year of study are presented first followed by age and gender. The chapter then contains a discussion of the statistical tests used, the related assumptions, and the subsequent results. To address the problem and purpose of this study, I developed three RQs based on the independent variables of year of study, age, and gender and differences in the SMC.

RQ1: What is the difference in OTSs' SMC score based on year of study (i.e., first-, second-, third-, and fourth-year designations) at a university in a NE state?

$H_0$1: There is no statistically significant difference in OTSs' SMC score based on year of study at a university in a NE state.

H_a1: There is a statistically significant difference in OTSs' SMC score based on year of study at a university in a NE state.

RQ2: What is the difference in OTSs' SMC score based on age at a university in a NE state?

$H_0$2: There are no statistically significant difference in OTSs' SMC score based on age at a university in a NE state.

H_a2: There is a statistically significant differences in OTSs' SMC score based on age at a university in a NE state.

RQ3: What is the difference in OTSs' SMC score based on gender at a university in a NE state?

$H_0 3$: There are no statistically significant difference in OTSs' SMC score based on gender at a university in a NE state.

$H_a 3$: There is a statistically significant differences in OTSs' SMC score based on age at a university in a NE state.

Chapter 4 includes a presentation of the results of this quantitative cross-sectional study using a program-derived archival data set. I begin with a description of the data collection process, including information on the demographics of the student sample, and continue by providing the results of the study in the form of descriptive and inferential statistics as well as addressing assumptions and data for each of the three research hypotheses. The chapter ends with a summary of the findings.

Data Collection

This study included the use of archival data, and therefore, participants were not recruited. I retrieved archival data from a program-derived data set by the graduate occupational therapy program at the study site university in a NE state from the 2021 academic year. IRB approval was granted from both Walden University and from the study site university for data analysis purposes. Due to the use of archival data in this study, there were no noted discrepancies in the data collection process. There were no incomplete entries within the data set because the survey, when digitally distributed to the

entire program, included a force response option that assured each data entry point was collected and recorded. The total number of students represented in the archival data set was 180, which included 147 students who identified as females and 33 students who identified as males. Students were further categorized based on year of study that showed 45 students in the first year of study, 44 students in the second year of study, 43 students in the third year of study, and 47 students in the fourth year of study. The median age of the sample population was 30, which when combined with the cohort size and gender ratios of the total sample population, is a near representation of the demographic characteristics of graduate occupational therapy programs on a national level (see American Occupational Therapy Association, 2021). In the following sections, I describe how the archival data set was analyzed in accordance with the research questions and hypotheses that guided this study as well as the subsequent results based on the three RQs.

Data Analysis

I cleaned and organized the data set using Microsoft Excel software. This process revealed no discrepancies prior to data analysis. For each of the 28 questions of the SMCS-CS, a Likert scale rating was assigned from 1 to 5 (*strongly disagree* = 1, *disagree* = 2, *neutral* = 3, *agree* = 4, *strongly agree* = 5). For each respondent, I calculated the average SMC score by averaging the responses for the 28 items on the SMCS-CS. There were no reverse-scored items on the SMCS-CS. A variation of descriptive and inferential analysis was used to analyze the data as organized in sequence based on the RQs and

independent variables of year of study, age, and gender. I used an ANOVA for the year of study variable and an independent sample *t* test for both age and gender, respectively.

Results

Year of Study and SMC

RQ1 focused on SMC and year of study, so I used an one-way ANOVA to assess if there were differences between the independent variable (i.e., year of study) and dependent variable (i.e., SMCS-CS score). The year of study was a categorical variable represented by the year in school (i.e., 1, 2, 3 or 4), and the SMCS-CS score was represented by a continuous variable with a theoretical range of x through y. Thus, the ANOVA, a test designed to find differences between one dependent variable and three or more independent variables, was the most appropriate choice to analyze RQ1. Prior to running the parametric test, I evaluated the assumptions of the ANOVA to ensure the proper treatment of data in the instance of finding violations.

There are three assumptions for the one-way ANOVA (Scariano & Davenport, 1987). The three assumptions I evaluated were that (a) the variance of scores across the dependent variable were equal for the different categories of the independent variable, (b) that the dependent variable data are normally distributed within each category of the independent variable, and (c) that the data for each level the independent variables were actually independent.

I used Levene's test to evaluate the first assumption of equal variances. Levene's test is an inferential statistic used to assess the equality of variances or a variable calculated for two or more groups (Carroll & Schneider, 1985). Some common statistical

procedures assume that variances of the populations from which different samples are drawn are equal (Gastwirth et al., 2009). I calculated the Levene's test *p* value to be 0.01. This may point to unequal variances, but Table 1 shows that when looking at the variances for the different years, they are not widely different. Table 1 also summarizes the mean SMC scores and the test for normality *p* values shown in the skewness (SK) *p* value column through the use of the Shapiro-Wilke test for normality. The Shapiro-Wilk test is a way to tell if a random sample comes from a normal distribution and gives a *W* value whereby a small value indicates the sample is not normally distributed (González-Estrada & Cosmes, 2019). For the latter, the null hypothesis is that the data are normally distributed; therefore, a *p* value greater than .05 implies normal distribution.

Table 1

Year of Study and Social Media Competency

Year	Average SMC score	Variance	SK *p* value
1st	3.57	0.28	0.22
2nd	3.60	0.42	0.58
3rd	2.87	0.81	0.09
4th	3.69	0.43	0.67

Upon running the ANOVA, I found the *F* statistic *p* value was < 0.01, implying that year of study was a significant factor for SMC (see Table 2). A post-hoc Tukey test confirmed that the third-year study SMC was significantly different from each of the other 3 years, as reflected in Table 3. In summary, I conducted a one-way between subjects ANOVA to compare the effect of year of study on SMC scores. The findings

showed that year of study had a significant effect on SMC at the $p < .001$ level for the four conditions [$F(3, 178)= 13.06$, $p = 9.8*10^{-8}$]. The mean SMC score for the Year 3 Cohort (2.87) was significantly different compared to those of the Year 1 (3.57), Year 2 (3.60), and Year 4 (3.69) cohorts.

Table 2

Year of Study F *Value and* p *Value*

	df	Sum of sq	Mean sq	*F* value	*p* value
Year	3	18.8	6.27	13.06	$9.8*10^{-8}$
Residuals	178	84.04	0.48		

Table 3

Post-Hoc Tukey Test and Third Year of Study Social Media Competency

Year of study	Difference of SMC score	*p* value
2nd – 1st	0.029	0.99
3rd – 1st	-0.701	0.00003
4th – 1st	0.118	0.84
3rd – 2nd	-0.730	0.00001
4th – 2nd	0.089	0.93
4th – 3rd	0.820	0.0000005

Age and SMC

Age was a continuous variable as recorded in the survey. To gauge its effect on SMC, I divided the age data into two categories (i.e., < 30, and >= 30; see Table 4) because the median age was found to be 29. Then, similar to the analyses employed for gender, the *t* test and the Wilcoxon rank sum tests were applied. The Wilcoxon Mann-

Whitney U test is used to test whether two samples are likely to derive from the same population and is commonly used in nonparametric two-group comparisons when the normality of the underlying distribution is questionable (Rosner & Glynn, 2009).

Table 4

Age and Social Media Competency Score t *Test*

Age	Average SMC score	Variance	SK *p* value
< 30	3.54	0.49	0.037
>= 30	3.34	0.65	0.52

I calculated the Levene's test *p* value for variances to be 0.1. The SK *p* value for less than 30 was calculated to be .04, implying nonnormality. The *t*-test *p* value was found to be 0.08, and the Wilcox rank sum test *p* value was .07. These results suggest that the age category is not a significant factor for determining SMC.

Gender and SMC

For comparison between female and male SMC scores, I used the Welch *t* test, and the Wilcox rank sum test. The Welch *t* test is also called the unequal variances *t* test and is used to test if the means of two populations are equal (West, 2021). The latter is generally used when the two assumptions for the *t* test (the same as those for ANOVA mentioned in the previous section) are not satisfied. The Levene's test *p* value for equal variances was calculated to be 0.63. However, the SK *p* value for the female category was 0.005 (see Table 5), implying nonnormal data. Additionally, the central limit theorem states that the distribution of sample means approximates a normal distribution as the sample size gets larger, regardless of the population's distribution (Islam, 2018). Because the sample size of this study was fairly large for the female category, which was

recorded at 148 as compared to 32 males, this implies the central limit theorem will approximately lead to correct *t*-test results. However, note that this test is for median comparison strictly speaking (de Barros et al., 2018).

Table 5

Gender and Social Media Competency Score t *Test*

Gender	Average SMC Score	Variance	SK *p*-value
Female	3.48	0.59	0.005
Male	3.25	0.49	0.59

The *t*-test *p* value was 0.11, whereas the Wilcox rank sum test *p* value was 0.06 (i.e., two-sided alternate hypothesis). Both are greater than 0.05, implying that gender was not a significant factor for determining SMC score.

Multivariate Analysis of Variance

Lastly, I carried out the multivariate analysis of variance (MANOVA) to assess if the differences in the OTSs' year of study, age, and gender (i.e., the independent variables) combined had any effect on the dependent variable of the SMCS-CS score. The MANOVA takes into account multiple continuous dependent variables and bundles them together into a weighted linear combination or composite variable (O'Brien & Kaiser, 1985).The results of the MANOVA are shown in Table 6. It must be noted that a MANOVA has the same assumptions as that of an ANOVA, except that it now applies to data split by all factors (i.e., year of study, age, and gender in this case). As shown in the previous subsections for age and gender, the SK *p* values are not all greater than .05, implying nonnormality. Therefore, caution was warranted for using MANOVA and its interpretation for the data set in the current study.

Table 6

Multivariate Analysis of Variance and Social Media Competency Score

Independent variables	*df*	Sum of sq	Mean sq	*F* value	*p* value
Year	3	18.8	6.27	13.03	$1.03*10^{-7}$
Age	1	0.77	0.768	1.596	0.21
Gender	1	0.00	0.000	0.001	0.98
Residuals	173	83.27	0.48		

The results from the MANOVA confirmed the findings from the previous analyses: The *p* value for year was less than 0.001, whereas those for gender and age category were greater than 0.05.

Summary

Chapter 4 included the results of this study as related to the effects of year of study, age, and gender on the SMC of OTSs and whether there were any differences between these three variables. The data analysis showed that age and gender do not have any effect on the OTSs' SMC based on the results of the independent *t* tests, which accepts the null hypotheses for both RQ2 and RQ3. Additional nonparametric statistical analyses for both RQ2 and RQ3 included the Wilcox rank sum test, which does not require the assumption of normality and revealed no statical differences ($p = 0.07$ for age and $p = 0.06$ for gender) between the two independent samples. Although age and gender did not show any differences in the SMC of the OTSs, the year of study did with participants in the third year of study showing a significant effect on OTSs' SMC with decreased scores as compared to the first, second, and fourth year of study, respectively. The ANOVA results indicating the statistical significance of the third year of study on the OTSs' SMC ($p < 0.01$) was followed up with a Tukey test for post-hoc analysis which is

used to analyze the means of three or more groups when an ANOVA *F* test is found to be significant. The results of the Tukey test post-hoc analysis confirmed that the third year of study does affect the OTSs' SMC, which accepts RQ1 hypothesis that there are not significant differences in the year of study and the OTSs' SMC.

In Chapter 5, I will restate the study's purpose and the nature of the study. I will then describe the methodology utilized and explain why the study was conducted. The key findings will be summarized and connected to the current findings and themes from the literature review and within the discipline. An overview of this study's limitations and recommendations for future studies will be provided regarding steps occupational therapy educators can take in addressing SMC within occupational therapy education based on understanding the differences of SMC within an academic program of study. Chapter 5 will conclude with discussions on the social change implications of the current study and the potential contributions this work can make regarding educating both students and educators on the effects of SMC within academic and clinical learning environments.

Chapter 5: Discussion, Conclusions, and Recommendations

The purpose of this quantitative, cross-sectional, observational study was to assess the SMC of OTSs at a university in a NE state and how their SMC was influenced by year of study, age, and gender. I analyzed archival data to determine differences between the independent variables (i.e., year of study, age, and gender) and the dependent variable that included the four constructs (i.e., technical usability, content interpretation, content generation, and anticipatory reflection) of the SMCS-CS. The archival data set was accessed with IRB permission from both Walden University and the study site university. For statistical analysis, I performed descriptive and inferential statistical tests in accordance with the three research questions and hypotheses that guided this study. This study was conducted to examine if OTS demographic characteristics influenced the students' SMC and to better inform both the educational practices and policies/procedures related to this under researched area within occupational therapy practice and education.

In this chapter, I discuss the study's key findings in relation to each of the variables of year of study, age, and gender. For RQ1 pertaining to year of study, the data showed that the year of study does influence the OTSs' SMC, specifically within the third year of study as confirmed through the primary analysis of a one-way ANOVA and secondarily through a post-hoc Tukey test. For RQ1, the alternative hypothesis was accepted because students in the third year of study showed far lower scores in their SMCS-CS than students from the other years studied. For RQ2 pertaining to age, there were no statistically significant differences in the SMC based on the student's age;

therefore, the null hypothesis was accepted. For RQ3 pertaining to gender, there were no statistically significant differences in the SMC based on the student's identified gender; therefore, the null hypothesis was accepted.

Interpretation of the Findings

The findings from this study extend the current knowledge within the literature on whether a student's position within their course or program of study influences their SMC. Additionally, the findings from this study address a previous gap in the health science literature and provide knowledge on an under researched topic in the area of occupational therapy education. The finding related to the difference between a OTSs' SMC based on their years of study identified whether specific variables based on the student's knowledge and ranking have an influence on their overall SMC and how this knowledge could potentially influence their academic learning and professional development. Additionally as guided by the SLT (see Bandura & McClelland, 1977), the concepts of observation, retention, attention, motivation, and modeled behaviors were found to be significant in assisting the understanding of whether these variables contributed to a difference in the OTSs' SMC based on a year of study, which may inform educators on examining whether their curriculum design and learning outcomes influence their student's SMC. In the following subsections, I describe the findings from this study as related to the RQs and provide an interpretation of the findings in the context of the SLT.

Year of Study and SMC

Previous researchers have found there are differences in how students use social media technologies based on their academic ranks (Oducado et al., 2019; Smith & Knudson, 2016), whereby students of lower ranks or initially starting their education have shown to have lower SMC than compared to senior ranked or students from year of studies closer to completion (Smith & Knudson, 2016). The findings from the current study confirm that the OTS's year of study influences their SMC. Specifically, this study showed that students in their third year of study had a significant decrease in their overall SMC as compared to in the first, second, and fourth year of studies. Similar to the existing body of research, there are variations in the SMC based on the placement of the student within their course of study. In this context, the curriculum is organized sequentially with coursework that is academic only, academic, clinical, clinical only, leading up to graduation. The results of this study showed a drop in the SMC of students in a year of study that consisted of both academic and clinical coursework as compared to the remaining year of studies that involved either academic or clinical coursework. Previous research has demonstrated that students misuse social media more frequently within areas of clinical and in-class experiences as compared to solely one or the other (Ayar et al., 2018; Ricciardelli et al., 2020). In the context of this study, OTSs are experiencing different forms of clinical education for the very first time within their curricular studies in which they are employing the skills they have learned within the first and second years of the program with actual clients through guided clinical education by clinical preceptors. The novel exposure to clinical education coupled with observed and

modeled behavior amongst their peers may contribute to the overall decrease in their SMC as compared to the remaining year of studies for students within this context.

Gender and Age

The results from this study indicated that gender does not influence the OTSs' SMC. Although other research has shown that gender influences a student's SMC (Hou et al., 2020; Kircaburun et al., 2020; Twenge & Martin, 2020), the results of the current study examining just OTSs showed no differences between the majority female students and those who identified as male students. Since the sample population for this study lacked heterogeneity of gender, future studies should strive to collect data from a diverse sample to assess whether gender has any effect on students' SMC.

The results from this study showed that age does not influence the OTSs' SMC. This finding is contrary to those of previous researchers who showed that a student's age influences their social media use and SMC (Hou et al., 2020; Kircaburun et al., 2020; Twenge & Martin, 2020). Since the median age of this study's sample was higher than the participant populations of previous research studies (i.e., Kircaburun et al., 2020; Twenge & Martin, 2020) which also utilized undergraduate student populations with higher variations of reported age, future studies may benefit from integrating a qualitative component to the assessment of SMC if age is homogenous within the sample population.

Limitations of the Study

In this study, I used archival data, so the process of participant recruitment was not applicable. Therefore, all the archival data were intended to be used, creating a census sampling.

Consideration of geographic generalizability could be extended to outside of the location where the study was conducted. At the study site university in a NE state, students gained acceptance to the program from all over the United States, and some students were international students. However, the archival data did not include data regarding the students' geographical origin in the demographics; therefore, the study findings are limited to the geographical location where this study took place. Another limitation was based on the student's cultural background. Although the current literature does not directly account for the student's cultural background and how that influences their SMC, a large number of studies on SMC were conducted outside of the United States, which the archival data did not include as collected information since the sample population was local to a university in a NE state within the United States only.

Lastly, limitations of generalizability were bound to the parameters of this study, so the study's findings are limited by the participant population being only OTSs. However, because the archival data set originated from the study site university in a NE state, the results of this study can be generalized to the various occupational therapy programs within the northeastern U.S. geographic region. Additionally, because all graduate occupational therapy programs are accredited by the same institutional body, the curriculum and program designs of the program would be similar for the graduate level programs only but not for the other academic degree levels such as the associates in science or post professional clinical doctorate degree awarding institutions.

Recommendations

My recommendations for further research are based on the study results and limitations of the study. My first recommendation is related to the finding that there was a statistically significant difference in the SMC of the OTSs based on their year of study. Therefore, further research needs to be conducted on investigating which specific factors in the graduate-level occupational therapy curriculum potentially impact students' SMC. For example, future research could explore whether specific courses, instructional techniques, pedagogies, and/or forms of experiential learning using social media technologies can be further analyzed to determine if there are any impacts on the OTSs' SMC and/or social media use as related to their professional and ethical behaviors within occupational therapy education. Additionally, a qualitative or mixed-methods approach may be useful in gathering in-depth information on how OTSs compare their SMC at varying points of their curricular studies and experiences.

Related to the study finding that there are no statistical differences in the SMC of the OTSs based on age and gender, I recommend that further research be directed to the area of social media use and frequency as based on the age and gender of the OTSs. For example, a mixed-methods study could be conducted to further explore whether the variables of age and or gender of the OTSs have any impact on the frequency of their social media use to determine if the frequency of social media use has an effect on the misuse or display of unethical behaviors within academic and clinical learning environments.

My last recommendation is related to the limitations of this study. This study was conducted with 180 OTSs as a part of an archival data set. Therefore, this study could be replicated in any U.S. region that has an accredited occupational therapy assistant, graduate occupational therapy, or doctorate in occupational therapy program to determine if the results are similar between program levels. In addition, the use of the qualitative method of data collection may also capture valuable information related to contributing factors or student experiences that may influence the OTSs' SMC.

Implications

This study contributes to positive social change in several ways. At the individual level, the results of this study may inform a greater self-awareness of the OTS in relationship to their SMC within academic and clinical learning. Educators who are able to incorporate forms of SMC training and education into a curriculum can support students' understanding of their professional and ethical responsibilities when using social media technologies as developing clinicians. Thus, the integration of assessments such as the SMCS-CS may assist students in understanding how social media technologies could be used ethically and responsibly through periodic self-assessments within academia and clinical learning experiences.

There is also potential for change at the organizational level. Institutional policies and procedures that outline inappropriate social media usage for students can enhance their guidelines by collecting data related to the SMC of varying student populations. Use of this form of data-driven decision making can assist administrators and campus leaders

when creating policies that may inform students on how to use social media technologies as opposed to guidelines on how they should not be utilized.

The results of this study may advance knowledge in the field of occupational therapy because faculty who are facilitating OTS clinicals can implement policies and/or provide instructional reminders to OTSs on proper ethical behavior surrounding social media use. This study may also advance knowledge in the field of occupational therapy education because the OTSs' SMC can inform educators on how to integrate social media technologies as educational technologies within their curriculum, which may facilitate the discussion of SMC on a more experiential and practice-based level for students so they can enter the field as much more informed health care practitioners. Another contribution that this study makes to positive social change is in relation to improved professional practice concerning the ethical use of social media technologies and how this practice further protects vulnerable and marginalized patient populations.

Conclusion

The misuse of social media technologies by health care students has resulted in the loss of privacy and dignity by the consumers of those services (Baier, 2019; Wang et al., 2019; Westrick, 2016); however, this problem can be addressed by understanding students' SMC in relation to their learning experiences in academia. One key finding of this quantitative study was that the year of study influences the OTSs' SMC. This study's findings highlight a potential strategy for occupational therapy educators to better understand how their curriculum designs and cohorts based on the year of study may influence their OTSs' overall SMC as related to varying academic and clinical

coursework experiences. Because there is a current gap in the literature regarding the influence of SMC in the field of occupational therapy, this study's findings inform the profession on how SMC is perceived by students from varying points within graduate-level occupational therapy education and how this information could be leveraged by occupational therapy educators to enhance their students' ethical and professional behaviors in academic and clinical education. Other key findings of this study show that there are no significant differences in the SMC of the OTSs based on their age and gender. Future studies should explore alternative demographic characteristics of their OTS populations to better understand the impacts on SMC and professional development. To ensure patient rights and privacy are ethically and professionally protected by future occupational therapy clinicians and leaders, occupational therapy educators can integrate aspects of SMC within their instructional designs and support students in the appropriate use of social media technologies as a part of best practice that could result in positive social change.

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