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REVIEW ARTICLE

Challenges of Emerging Technology: Social Networking and Texting in Pediatric Neuropsychology Practice

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Abstract In today's digital era, neuropsychologists are likely to use social media and social networking in their clinical work, yet there have been few policies and guidelines on best practices for online behavior of neuropsychologists. Both personal and professional social networking can raise ethical and legal issues in day-to-day practice. These issues relate to privacy and confidentiality, informed consent, blurring of professional boundaries, and searching online for client information. This article examines and discusses potential benefits, risks, and safeguards of digital communication, which includes text messaging, social media, social networking, and other web-based resources. An ethical problem-solving process is presented for neuropsychologists when deciding to use social networking with clients. Further, this article provides strategies and recommendations that graduate trainers, field supervisors, and employers can use to lead discussions on ethical decision-making. Future research and directions in this topic are outlined in light of the ethical issues that neuropsychologists may encounter in professional training and practice.

Keywords Social media · Internet · Ethics · Telehealth · Digital communication

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Pediatric neuropsychologists and psychologists are increasingly using social media and other digital communication tools in their professional work. These include social networking sites (e.g., Facebook, LinkedIn), publishing virtual media (e.g., Wordpress, blogs, Wikipedia), search engines (e.g., Google, Yahoo), text messaging or multimedia messaging applications (e.g., Twitter, Snapchat), and videoconferencing tools (e.g., Skype, Adobe Connect) for both professional and personal use. Moreover, approximately 77% of psychologists and psychology graduate students maintain a personal social networking site (Taylor et al. 2010), and this is expected to increase over the next decade. Professional organizations, including the American Psychological Association (APA 2016) and the National Academy of Neuropsychologists (NAN 2016), have supported the use of social media due to their many benefits including ease of communication between multiple parties, access and dissemination of the latest research and announcements, and the nationwide and global distribution of content in audio and visual formats.

These organizations also have a vested interest in preserving the professionalism of their members. The American Psychological Association (2010) Ethical Principles of Psychologists and Code of Conduct (hereinafter referred to as the Ethics Code), for example, was created to protect clients, consumers of psychological services, and the public's trust in the profession. The mainstream use of digital communication tools, however, presents a number of challenges as commonly used social networking messages (e.g., posts, blogs, "snaps," "tweets") can blur professional and personal boundaries by sharing opinions, images, and ideas that may not necessarily represent the mission of the organization or may be deemed inappropriate (Pham 2014). Although there are many advantages to using social media, the public nature of such technologies can increase access to personal or

privileged information, which has significant implications relating to privacy and confidentiality (Kolmes 2012).

The potential ethical and legal risks associated with social media use have prompted psychology training programs and professional organizations to develop technological or social media policies in order to safeguard the reputation of the psychology profession; to improve the training and competency of its members; and to protect children, families, and colleagues with whom members work (Pipes et al., Pipes et al. 2005). Unfortunately, these newly developed policies do not provide specific guidelines to deal with and anticipate concerns. Segool et al. (2016) examined the general use of social media among psychology graduate students, practitioners, and faculty and found that participants reported low levels of personal self-disclosure, identified little concern about privacy, and believed that there was only a slight potential for damage occurring as a result of their social networking disclosures. This study, however, substantially relied on participants' self-report which might not necessarily reflect actual behavior. Indeed, the same research group analyzed Facebook profiles associated with professional organizations and found that 20% of profiles depicted alcohol or drugs, 17% contained religious content, 16% contained political content, and 14% contained explicit language (e.g., ethnic slurs, profane speech) indicating that a sizable percentage of psychologists do make self-disclosures related to their personal or non-workplace beliefs and behaviors (Segool et al. 2014).

Previous studies have deliberated the benefits and challenges of using such technology in medical or psychiatric practice (e.g., Clinton et al., Clinton et al. 2010; Farnan et al. 2013), graduate psychology training and supervision (Myers et al. 2012; Pham et al. 2014), counseling and psychotherapy (e.g., Taylor et al. 2010), and telepsychology (APA 2013; Drum and Littleton 2014). However, there is still a dearth of literature devoted to social media and social networking that may be unique to the neuropsychology profession. Thus, the purpose of the article is to present an overview of the ethical issues pertaining to digital communication between pediatric neuropsychologists and clients (e.g., parents, child). Second, we provide a discussion of the risks and benefits of using social networking and social media in clinical practice and recommend procedural safeguards. Third, we outline educational recommendations for graduate training. Lastly, we suggest areas for future research and discussion on this topic.

Ethical and Legal Considerations and Codes of Conduct

Technological innovations can bring numerous benefits to neuropsychologists but can also present legal and ethical concerns, particularly when technology outpaces existing policies, laws, and guidelines. With increasing number of practitioners providing telehealth or telepsychology services (APA 2013), several state psychology licensing boards have enacted telehealth laws and issued policy statements outlining appropriate practices and emphasizing careful consideration of potential risks unique to digital communication (Baker and Bufka 2011). "Telehealth" is often used as the broader term to describe telecommunications technology (e.g., social media) that supports, improves, or delivers clinical health services, patient information, or professional education and supervision (Baker and Bufka 2011). State and federal agencies generally differ in their definitions and regulations of telehealth, but many would include reference to two-way communications using interactive, simultaneous audio and video, or other electronic media to deliver healthcare (CCHP 2017). Within the realm of behavioral health, APA (2013) uses the term "telepsychology" to denote the provision of clinical services using telecommunication technologies. Several states have enacted telehealth laws that apply to psychologists, which is primarily limited to synchronous modalities (e.g., real-time videoconferencing), yet many states currently do not have specific provisions that define how psychologists can provide telehealth services. The lack of specific provisions can make it difficult for neuropsychologists to provide telepsychology across state lines, since it often requires a separate review of laws related to interjurisdictional licensure. Several jurisdictions, such as Connecticut and Florida, clearly state that telehealth does not cover or include provision of services through text or e-mail only messages (CCHP 2017).

Neuropsychologists who decide to provide services to a client in a different state must be familiar with the regulations in both the home state where they are licensed and the distant/receiving state where the client resides. For example, in Massachusetts, the state licensing board strongly encourages psychologists to conduct an initial evaluation of a client face-to-face before beginning electronic provision of services (Massachusetts Consumer Affairs and Business Regulation 2015). One probable risk of engaging in telepsychology is encountering technological failure by either practitioner or client when videoconferencing. Other challenges include verifying client identity and determining whether the client is a minor, dealing with potential miscommunication when particular visual and/or audio cues are missed, and determining procedures regarding release of client information received via Internet with other electronic sources (Baker and Bufka 2011). According to Massachusetts regulations, the practice of telepsychology occurs where the client is physically located at the time of service. Thus, when sending text messages to a client as a part of that service, then the state where the client is receiving the service governs the telepsychology practice. Many states provide temporary or courtesy practice provisions, which allow licensed psychologists to provide clinical services to clients residing in different states for a limited number of days each year.

The growing use of technology for service delivery, treatment integrity, and record keeping increases the risk to client privacy (APA 2007). Due to these myriad of challenges, a discussion of ethical issues is especially important when using digital communication tools and social media in the provision of mental health services, as there is greater risk for misunderstanding that can occur between child or adolescent clients, parents, and practitioners. Neuropsychologists therefore must apply ethical principles and standards for establishing and maintaining professional relationships with children and parents in both physical and online environments. Standards that are most relevant include multiple relationships (Standard 3.05), informed consent (Standard 3.10), privacy and confidentiality (Standard 4), record keeping (Standard 6), and informed consent to therapy (Standard 10.01). Neuropsychologists should also be familiar with Principle E (Respect for People's Rights and Dignity), when dealing with privacy issues or confidential information. APA (2012), 2013) has established guidelines for practicing telepsychology and social media policies emphasizing professional conduct when storing, accessing, or transmitting client data digitally. APA's (2012) social media policy generally states that social media is inherently public, and no form of social media is ever private. Even though discussion of the ethical standards presented in this article apply to telepsychology, we will outline specific standards, particularly privacy and confidentiality, in relation to social networking, social media use, and text messaging in practice.

Other organizations such as NAN (2016) and the Trainers of School Psychologists (TSP; Segool et al. 2013) have followed suit and have adapted social media policies or developed their own. Similar to face-to-face interaction, issues relating to informed consent and trust (e.g., searching a client or neuropsychologist on Facebook), self-disclosures (e.g., posting personal information on a social networking website), and professional behavior (e.g., defamation and libel) are especially important when using personal or professional social networking sites and social media to interact with clients (Gabbard et al. 2011; Campbell et al. 2016). Although e-mail and text messages are not generally described as social media, they are also vulnerable to these risks, including privacy and confidentiality, as any form of digital communication sent from or received by the neuropsychologist would be considered part of the client's record (APA 2010; 2012).

Professional activities or behaviors that are *required* or *prohibited* do not lend themselves to much discretion; however, specific activities or behaviors that are deemed *permissible* may present as the most challenging ethical dilemmas for neuropsychologists (Pirelli et al. 2016). Therefore, we differentiate activities, behaviors, and practices as *required*, *prohibited*, or *permissible* based on the standards and principles outlined by the Ethics Code. For example, updating passwords or using non-identifying information to

illustrate a case study in a professional online forum is required to maintain confidentiality. On the other hand, engaging in online defamation or libelous attacks of a client is strictly prohibited as it exemplifies harassment of others. Online activities that may be considered permissible, such as searching the Internet for client information, may require more careful and thoughtful discussion as these scenarios are complex and are not easily resolved.

For those situations where ethical decision-making is not automatic and where courses of action chosen may be challenged, Haas & Malouf (1989) and others (e.g., Koocher and Keith-Spiegel 1998) suggest that engaging in an ethical problem-solving process may help the practitioner make well-reasoned decisions when dilemmas arise in professional practice. We adapted an ethical problem-solving process (Koocher and Keith-Spiegel 1998) below to encourage pediatric neuropsychologists and other practitioners to evaluate their decisions involving personal and professional uses of social media and social networking sites:

1. Identify the problem(s), along with the intention and motivations of the neuropsychologist.
2. Identify the ethical issues, legal statutes, and the APA standards and principles that are relevant to the scenario, along with the interests, rights, and relevant characteristics of each party involved.
3. Consider how personal interests and prior experiences might influence the choice between different courses of action.
4. Develop alternative courses of action.
5. Analyze the risks and benefits of each course of action. In particular, evaluate each action while recognizing the permanence, searchability, and visibility of online or digital content (Tufekci 2008).
6. Choose a course of action after conscientious application of existing values, principles, and standards.
7. Act, recognizing the responsibility for the consequences of the action.
8. Evaluate the results of the course of action and act to prevent future occurrences of the dilemma (e.g., communication and problem solving with colleagues; changes in procedures and practices).

Privacy and Confidentiality

The term "privacy" can be described and interpreted in several contexts. Between client and practitioner, privacy refers to the right of the individual to release or disclose personal information (Lehavot et al. 2012). In an online context, privacy refers to the level of security of personal information published on the Internet. However, as we have stated above that social

media is inherently public, many personal and professional social networking sites offer "privacy control" settings as a way to limit individuals from accessing or viewing public profiles and data. Within a work environment, privacy can refer to an individual's personal or private conduct, behavior, or action that is separate from the individual's work behavior and the professional relationship (Pham 2014). APA (2010) briefly states that the Ethics Code only applies to the practitioner's work-related activities and is distinguished from their private conduct, which is not within purview of the Ethics Code. However, APA (2010) acknowledges that personal problems and conflicts may interfere with their effectiveness in performing work-related duties adequately, and therefore, practitioners must respond appropriately by limiting, suspending, or terminating their work-related duties.

Confidentiality refers to the treatment of information that an individual has disclosed in a client-practitioner relationship, which may be most challenging to ensure when health information is electronically transmitted and accessed (APA 2010, 2013; Campbell et al. 2016). This would apply to electronic storage and access of protected health information, along with sharing and release of client information with other neuropsychologists, mental health clinicians, or school professionals. Examples of electronic transmissions can include transferring information to cloud-based storage, from a mobile device (e.g., smartphone or tablet), via flash drives and Wi-Fi networks, as well as websites where clients are able to send protected health information (e.g., intake forms). Many practitioners use e-mail and text messaging to communicate client information, along with writing notes in electronic health records that use local, network, and/or cloud-based storage (Lustgarten 2015). However, practicing neuropsychologists who are healthcare providers are required to follow regulations of their own clinical practice and should be especially aware of the Privacy and Security rules of the Health Insurance Portability and Accountability Act (U.S. Department of Health and Human Services, 1996). All electronic transmissions of health information are generally covered under the Security rule of HIPAA (U.S. Department of Health and Human Services, 1996), and thus require neuropsychologists to take special care in mitigating any harmful effects and limitations of confidentiality through appropriate administrative and technological safeguards. Moreover, the APA Practice Organization (2014) encourages practitioners to set up passwords, firewalls, data encryption, and authentication when using HIPAA-compliant cloud-based computing in order to protect electronic records from unauthorized access.

Digital communications between the neuropsychologist and client is not guaranteed to be confidential or secure (APA 2010). Neuropsychologists may not be able to verify that the person on the other end of the medium is truly the client, and vice versa. For example, an adolescent who is sending text messages to the neuropsychologist may be using

a shared online account or the same smartphone with parents and other members of the client's family. Because text messages and e-mails can be quickly created and received almost immediately, it is not uncommon for users to send these messages to an unintended recipient or to multiple recipients inadvertently. Thus, cognizance should be taken when sending text messages or e-mails containing privileged information to specific individuals. We recommend every practicing neuropsychologist create a technological or social media policy addressing issues relating to digital communications with clients by amending informed consent. Practitioners and clients should be informed of the risks of social media use within these policies, in order to minimize concerns and conflict. Table 1 provides a list of potential risk and benefits of engaging in particular online activities along with suggested safeguards.

Some scholars suggest that digital communication tools can be used to enhance therapeutic alliance between the client and practitioner, and even assist in assessment or treatment (Huggins 2016; Reid and Reid 2007). With regard to using text messages or social networking features (e.g., Facebook message), Huggins (2016) noted that "not all clients or practitioners view the boundaries of the therapeutic relationship as being contained in the walls of an office. Clients and practitioners may view therapeutic boundaries as 'spaceless'" (p. 29), particularly if the provision of services does not occur face-to-face or even within the same state. The use of text messaging may function as a tool for collecting assessment or treatment data. For example, a neuropsychologist could text the client's family with reminders to note their child's sleeping habits or record the number of temper tantrums that occurred during the week. Similarly, the neuropsychologist could send a text message to the parent reminding an adolescent to complete a behavior rating scale for that day. Huggins suggests, however, that there needs to be a clear understanding about what and when to send text messages (e.g., no images or videos) and that the neuropsychologist needs to (a) weigh the risk and benefits of sending text messages to a minor and (b) etermine the level of technical security when data are privileged or confidential. If engaging in interjurisdictional practice, the neuropsychologist should (a) determine whether sending text messages is construed as a provision of telehealth services at the neuropsychologist's home state and the client's distant/receiving state, particularly if they are not licensed in the client's state, and (b) know whether both states belong to the interstate compact (ASPPB 2015) for providing such services.

Professional Relationship

Professional interactions between a neuropsychologist and the client should be consistent across all modes of communication, whether in person or online (APA 2013). Online

Table 1 Benefits and risks of digital communication and social media for psychologists and neuropsychologists

Activity	Potential benefits	Potential risks	Suggested safeguards
Use of personal or professional digital communications (e.g., e-mail, text, or instant messaging) with clients	Increases accessibility Ease of communication Prompt sending and responding	Lack of confidentiality and security of privileged and confidential information Information may be sent to unintended recipient Blurring of professional and personal boundaries (for personal e-mail, text, and instant messaging)	Establish policies for using digital communications with clients Avoid sending confidential or privileged information Avoid using personal e-mail, text, or instant messaging with clients
Use of personal or professional digital communications (e.g., e-mail, text, or instant messaging) containing client information with colleagues or staff	Increases accessibility Ease of communication with colleagues or staff Prompt sending and responding	Lack of confidentiality and security of privileged and confidential information Information may be sent to unintended recipient	Establish policies for using digital communications with colleagues or staff Implement security measures (e.g., passwords, encryptions) when accessing, storing, or receiving privileged and confidential information
Use of professional website	Increases visibility and networking Disseminate information on credentials, services provided, and other resources Clients may be able to search and view content	Requires frequent updating	Review website to ensure accuracy of information
Use of personal social networking site (e.g., Facebook) or blogs	Increases visibility and networking (to personal contacts) Ease of communication Expression of individual ideas, viewpoints, or opinions	Increases accessibility (for the client) Influences professional relationship with client Increases risk of posting negative comments or opinions	Implement security measures (e.g., passwords, privacy control settings) Avoid accepting "friend" requests from clients
Use of general social media or social networking sites to gather information on clients (e.g., Googling)	Gain information that may be relevant to client's concern or problem Intervene if high-risk behavior, emergency or harm is imminent	Potential inaccuracies of source information Influences professional relationship with client	Establish policies for using digital communications with clients; inform the client of policies and gain consent Consider intent and purpose for searching client and use of findings Consider implications for future follow-up and treatment
Use of online educational resources and professional websites for clients	Gain information that may be relevant to client's concern or problem Increases accessibility (for the client)	Potential inaccuracies of source information	Review website to ensure accuracy of information
Posts on professional social media or online forums	Increases visibility and networking Ease of communication Expression of individual ideas, viewpoints, or opinions	Blurring of professional and personal boundaries Increases risk of posting negative comments or opinions	Create separate personal and professional social media sites Consider intent and purpose of posting comments and potential consequences

professionalism can pose particular challenges due to the potential ambiguity of text messages and other digital communication tools (e.g., Facebook messages, "tweets") due to their brevity, informality, and subtle cultural nuances, as well as the potential abuse of using such media (e.g., "trolling," cyberbullying). Text messages are often succinct and devoid of audio or visual cues to help convey emotion, compared to face-to-face communication (Ganster et al. 2012). Research is scarce on this topic particularly in a therapeutic context; however, children and adolescents may be more comfortable with engaging in digital communication with the neuropsychologist than face-to-face communication, particularly if they exhibit limited verbal or expressive language skills, initial discomfort, or history of social anxiety (Reid and Reid 2007).

The professional relationship between a neuropsychologist and client may begin when the parent or caregiver seeks out services from the neuropsychologist, who subsequently agrees to provide the services to the child. However, the relationship may also begin prior to the client and neuropsychologist meeting face-to-face through online interaction (e.g., e-mail requesting information on services or scheduling intake interview), which implies the start of the professional relationship. Nevertheless, the neuropsychologist must consider a number of factors when making a decision about whether to initiate or continue the professional relationship via digital or online means. Specifically, the neuropsychologist should consider (1) the intended purpose or goal of the interaction, (2) the actual content that would be exchanged or provided, (3) the immediacy of using digital communication tools, (4) the preferred medium through which online interaction would take place (e.g., text messaging, work e-mail on a protected server), and (5) the security and confidentiality of the content managed between parties (Farnan et al. 2013). To ensure a professional relationship, there should be parity of ethical and professional standards applied to all aspects of practice, particularly when establishing and maintaining boundaries between the neuropsychologist's professional and personal online behavior, as well as with the relationship between the neuropsychologist, parent, and child.

Professional and Personal Boundaries Due to increased accessibility and visibility to the public, the Internet allows neuropsychologists to generate and/or access professional and personal content. They may be asked to provide professional opinions or comment on blogs, social media websites, or online forums, on a controversial topic in the field (Farnan et al. 2013). When doing so, they should disclose their credentials and any conflicts of interest. They should also be aware that any content that is posted in social media may be disseminated to other sites with the risk of their messages being taken out of context and being publicly available and retrievable for long periods of time (Farnan et al. 2013). On occasion, neuropsychologists may seek guidance from their professional

community by presenting case studies or vignettes in online forums or discussion boards. Thus, any identifying information must be redacted (Pham 2014). Similarly, they should avoid posting personal opinions or inappropriate comments on blogs or discussion boards, as they can irrevocably damage their professional identity and undermine the neuropsychology profession. Inappropriate posts may include libelous or personal attacks, political statements, and sexually explicit comments or photos and are therefore prohibited (APA 2010). Additionally, posting pictures, audio/video clips, or comments relating to work or client interactions on blogs or microblogs, such as Twitter, may be interpreted as a breach of privacy or as a sign of unprofessionalism (Segool et al. 2016). Neuropsychologists must carefully consider the intent and purpose of the message before posting to minimize blurring of professional and personal boundaries.

Additionally, some professional social networking websites, such as LinkedIn, allow users to display their credentials, work history and experience, and contact information. Other social networking sites, such as Facebook, allows users to post personal content via photos, messages, and videos, with controlled access and visibility. Nevertheless, neuropsychologists should refrain from or limit self-disclosures on social networking sites where clients and employers are likely to search and view personal content and make implicit judgments about their professionalism or character (Segool et al. 2016). Kaslow et al. (2011) highlighted that if a client searches and finds a psychologist's personal social networking site, the client's impressions of the psychologist may change. In other words, the client may view the relationship differently from a professional, therapeutic relationship to a casual, social one. Creating separate professional and personal social networking profiles can help users become more cognizant about what they post on each profile page, while ensuring their personal lives do not intersect or interfere with their responsibilities to their clients (Campbell et al. 2016). However, unless privacy settings are maximized, a separate personal social networking profile can still be searchable and viewable by the client, which can unavoidably affect the dynamic of the professional relationship.

Searching for Client Information Online Neuropsychologists may also be tempted to search for client information online, a behavior known as "patient-targeted Googling" (Clinton et al. 2010). Recent surveys found that 94.4% of graduate psychology trainees searched for at least one client (DiLillo and Gale 2011). Furthermore, 32% of child and pediatric psychologists reported viewing their clients' social media sites and 32% reported "Googling" their clients (Tunick et al. 2011).

NAN (2016) provides guidelines that generally discourage online interaction with clients using personal social media or social networking sites. For example, neuropsychologists should not accept "friend" requests from current clients on

Facebook. It is clear that Internet sites are viewed as public domains; however, there is no standard or rule that can be interpreted as prohibiting psychologists to search for a client on Google or Facebook, nor can any be interpreted as requiring the search for a client. Medical professionals, including physicians and psychiatrists, believe that patient-targeted Googling is done out of "curiosity" or "habit" (Farnan et al. 2013) and may be permissible depending on the intent and purpose. Pirelli et al. (2016) argue that mental health clinicians who collect Internet data from clients may conceptualize these data as "collateral information," similar to interviews with family members and other professionals. They argue that online data should be weighed with respect to its level of utility rather than as valid or invalid (Pirelli et al. 2016). These data may be helpful in providing additional information for case conceptualization, assessment, or follow-up treatment of the child. However, clinical judgment should also be used when deciding how to reveal this information to the client, as searching for information without client knowledge can threaten trust in the professional relationship. Therefore, neuropsychologists should be carefully reminded of Principle E of the Ethics Code (APA 2010), which recognizes the dignity and rights of individuals to privacy and confidentiality when issues of patient-targeted Googling are in question. Ultimately, the neuropsychologist must consider the purpose of searching online for client information on an individual basis, carefully weighing the potential risks and benefits of using such information.

Lehavot et al. (2012) suggest that providing informed consent to the client regarding the policies of Internet and social networking use can help minimize the need for conducting online searches. Clients would benefit from reviewing the organization's technological and social media policies to establish trust before participating in neuropsychological services. Technological and social media policies that delineate required, permissible, and prohibited online activities related to social media use allow all parties to acknowledge and maintain professional boundaries while reducing the likelihood of encountering potential conflict or ethical dilemmas (Wester et al. 2013).

We argue that there are few scenarios that *may* be considered permissible for searching client information online. For example, it is permissible for the neuropsychologist to conduct an online search of the client when there is a duty to warn others of potential harm or emergency, such as suspected physical abuse or risk of suicide (Lehavot et al. 2012). Another scenario where an online search may be permissible is during a forensic assessment, where the individual provides statements from a clinical interview that contradict information outlined in the background history of a neuropsychological report or from other substantiated documentation, particularly if the individual is suspected of malingering. Glancy et al. (2015) noted that for criminal or civil cases, the individual may present or behave differently online than in person,

and that information gathered online may yield more accurate information than what the individual reports to police or experts. However, for some clients seeking neuropsychological services, some of these situations may be difficult to ascertain if client behaviors and misreporting of information are a result of traumatic brain injury, mental health disorder, or other psychiatric conditions. Additionally, caution should be taken as the source of online information may be inaccurate, ambiguous, or questionable. Corroboration of data from other relevant and reliable sources (e.g., family interviews, classroom observations, educational records) should also be conducted (Pirelli et al. 2016). Nevertheless, neuropsychologists who anticipate gathering client information online should discuss this procedure during the informed consent process.

Professional Pages and Online Educational Resources

According to Pew Research (2013), 52% of smartphone owners have used their phone to look up health information online. Moreover, 77% of online health seekers started at a search engine (e.g., Google, Yahoo), while 1% reported started at a social networking site, such as Facebook. Although many parents prefer using search engines to find health information, most social networking sites have a reputation of being "social' or "unprofessional" in nature, and therefore, may not be perceived as a reliable source for gathering health information or finding neuropsychological services. Nevertheless, practicing neuropsychologists may choose to create a business Facebook page, for example, to increase their presence in the health service market (Pham 2014). They can also use social networking sites to disseminate professional and educational online news, announcements, and resources (Farnan et al. 2013). Some examples include blogs or articles related to new research on executive functioning, common childhood disabilities, and home- or school-based interventions. Recommended online resources and webpages should be reviewed regularly to ensure accuracy and quality of the information shared. Advertising and marketing of their practice through social media may be helpful for increasing referrals or accessing populations they may not otherwise serve.

Social media and social networking sites can also be developed as tools for professional development and networking with other neuropsychologists. Professional social media profiles or websites can distribute latest research findings and opportunities for professional development and continuing education via webinars or online learning modules. However, it is the ethical responsibility of the neuropsychologist and the organization to ensure that online professional networks are secure and that only verified and registered members or users have access to shared information (Farnan

et al. 2013). Online postings can also be used to help advocate for public health issues nationally and globally.

Training of Ethical Practices in Using Social Networking and Digital Communication

There is an increasing need for neuropsychologists to consider and understand the ethical issues when using social media and social networking in one's professional work. Because the Internet and social media have made communication and user-generated content more readily accessible to the public, issues related to privacy and confidentiality can be easily compromised, despite technological advancements in cybersecurity (Wester et al. 2013). As telepsychology services and social media proliferate, so do challenges in determining best practices in incorporating technology and digital communication tools in provision of services to children and families. Graduate school, internship, and post-doctoral training provide opportunities to create structured discussions about ethical decision-making (Lannin & Scott, 2013). Just as the protection of confidential materials (e.g., filing of client reports, electronic files, and assessment materials) is a common discussion during graduate supervision, so too should there be discussion about confidentiality and professional boundaries associated with social networking, electronic sharing of files, and digital communication with clients (Tunick et al. 2011).

Unfortunately, as suggested by Lannin and Scott (2013), graduate psychology trainers may feel less knowledgeable about social networking and digital communication tools and therefore may not bring up these topics with their students. Since many of these technologies became widespread after 2000, Smith and Kidder (2010) suggest that individuals who come from a younger generation (i.e., millennials) are more comfortable disclosing personal information and are less likely to consider privacy concerns regarding posts on social networking sites, compared to older generations. This comfort may come from growing up in a digital technology era where the use of the Internet, social networking, and cellular technologies has always been a part of their daily routine (Smith and Kidder 2010). Similarly, these individuals are more likely to adopt new technologies, resulting in increased knowledge and awareness of the technological advantages and disadvantages compared to graduate trainers, who are generally older. We would argue that although the younger generation may be more familiar with and have more experience using social media and social networking sites, seasoned trainers can offer complementary expertise in ethical problem-solving to guide discussions about these issues. In this way, these conversations benefit both trainers and students in increasing technological literacy and competence, while engaging in ethical decision-making processes.

The following section outlines strategies and recommendations that graduate trainers, field supervisors, and employers may implement to initiate and facilitate reflective and ethical practice among professional psychologists and neuropsychologists. Graduate students and supervisees may benefit from the following:

1. Discussing sections of the APA Ethics Code (APA 2010) as it relates to social networking and digital communication technologies. In particular, discussions of Standard 3.05 on Multiple Relationships, Standard 3.10 on Informed Consent, Standard 4 on Privacy and Confidentiality, Standard 5 on Advertising and Other Public Statements, and Standard 6 on Record Keeping, and Standard 10.01 on Informed Consent to Therapy may provide rich discussion of considerations in the use of technology in practice.

2. Discussing how supervisors, trainees, or graduate students will communicate client information. The use of e-mail, text messaging, social networking, or cloud-based computing to communicate about clients should be discussed at the onset of working relationships and revisited periodically.

3. Conducting classroom activities during graduate training that facilitate discussion about social media use and its relationship to trainees' personal and professional lives. The aim of activities should be to develop awareness and increase professional competence in professional self-evaluation and decision-making. One activity that inevitably evokes rich discussion is having students review their own social networking profiles on one or more applications (e.g., Facebook, Snapchat, Twitter, etc.) during supervision and answering the following questions:

   (a) If you were a potential client, parent of a minor, teenage client, colleague viewing your social networking profile, what would your profile tell about you? What might the client perceive about your interests, beliefs, activities, or professionalism? What would they learn about you that you might not share with them in a professional context? What changes would you make, if any?

   (b) What content on your social networking sites from the very beginning to the present day is available to your clients, parents of minor clients, employers, and friends? Is there anything problematic with what your friends have posted on your social networking site or linked my profile to? Is there any information about clients or families with whom you work? Has anyone ever commented about your job or profession in a manner that you would not want your clients to see? How does sharing your personal beliefs, values, feelings, or behaviors affect your professional identity or practices?

(c) Was there anything that you thought was private that you realized can be publicly accessed? If a person is not "connected" to you or is "connected through a friend," do they see different content? Are you fully satisfied with your privacy settings? What changes would you make, if any?

4. Creating assignments for trainees that involve developing informed consent policies for use with clients that indicate how they use digital communication. Trainees could consider whether they will "friend" current or former clients? How would they respond to the friend request, if at all? If text messaging or e-mail is used to communicate with clients, what should clients understand about confidentiality and record keeping? Do they "Google" any of their clients? (Asay and Lal 2014)

5. Creating assignments that involve trainees using an ethical problem-solving framework to analyze mock scenarios involving digital communication likely encountered by neuropsychologists.

6. Reviewing the social media policies of the organizations in which they are training or working. Trainees should evaluate in what ways their social networking site use adheres to the policies and in what ways it does not. They may also contribute in the development of policies along with faculty or supervisors if there is none currently in place.

Future Research and Directions

Despite advances in neuropsychology practice, the use of Internet and social media by pediatric neuropsychologists has yet to receive attention in the literature. As children become more adept in using social media in daily living, practitioners should continue to examine the advantages and disadvantages of using social media and social networking in their clinical work. Although there are a number of research studies that examine psychologists' personal and professional use of social media (e.g., Tunick et al. 2011), these studies primarily rely on self-disclosure via surveys. Graduate trainees in clinical psychology, rather than neuropsychology, typically complete these surveys although one could argue that there is overlap in disciplines. Therefore, neuropsychologists can build on this research by reviewing existing work in clinical, counseling, and school psychology (Kolmes 2012; Segool et al. 2016) and from psychiatrists and physicians in medical settings (Clinton et al. 2010; Farnan et al. 2013). It may be beneficial to assess neuropsychologists' (and pediatric neuropsychologists') attitudes of using social media to search for client information, their level of self-disclosure on their social networking sites, and the impact that this self-disclosure has on clients' perceptions of their professionalism and ethical behavior.

Additionally, future research should include an investigation of neuropsychologist's ethical decision-making as it relates to telepsychology or providing web-based counseling and therapy. Case studies and vignettes that incorporate ethical dilemmas may be helpful in understanding the context of social media use and its effect on the client-practitioner relationship. Editors of relevant peer-reviewed journals may want to consider including case studies or commentary on ethical decision-making, particularly when there is a blurring of personal and professional behavior. With regard to graduate training, researchers may want to create mock scenarios in order to discuss ethical dilemmas that may evolve during practicum or internship (e.g., having an adolescent client "friend" or "Google" a graduate trainee). This should also include a discussion pertaining to the trainee's response and impact on the client.

Lastly, studies should examine how digital communication influences the quality of a therapeutic relationship, along with its influence on treatment outcomes. As stated above, children and adolescents may initially prefer to interact with the neuropsychologist using social media in lieu of traditional, face-to-face communication. Research can continue to explore ecological and contextual factors that explain why clients may prefer using digital communication, and whether this mode of interaction aids or hinders treatment acceptability or effectiveness over time.

Conclusion

Social media and social networking can offer innovative ways for neuropsychologists to interact with clients and disseminate information globally. However, neuropsychologists must be mindful of the benefits and risks of using these technologies as they can affect the client-practitioner relationship and societal perceptions of the profession. Maintaining separate professional and private social networking profiles online may also avoid blurring of boundaries with clients and other colleagues. Every professional organization should consider developing and implementing clear social media policies to inform clients of these boundaries and to prevent ethical issues from occurring. Since many clients continue to search online for health information and resources, neuropsychologists should be well equipped to advise parents and children on selecting websites that provide accurate sources of information. As digital communication evolves and becomes widespread in the practice of neuropsychology, researchers and practitioners should continually update their knowledge of new technologies and best practices in order to navigate the digital environment easily and safely.

Compliance with Ethical Standards

Conflict of Interest The authors declare that they have no conflict of interest.

Human and Animal Rights and Informed Consent This article does not contain any studies with human participants or animals performed by the author.

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