Young adults' perceptions of their online versus offline interactions with close friends: An exploration of individual differences

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ABSTRACT

The current study investigated the roles of social anxiety and gender as factors in young adults' perceptions of the differences in their online versus offline interactions with friends. A large sample of 687 Australian young adults completed an online survey and of those, 520 participants (62.7% female; M_{age} = 19.34 years, SD = 2.05) who perceived a difference between their online and offline interactions were included in analyses. Matrix coding and crosstab queries were conducted comparing frequencies of theme endorsement of those high (n = 103) versus low-to-moderate (n = 416) in social anxiety, and female (n = 326) versus male (n = 193). Key differences were noted for socially anxious versus less-anxious youth, and in how females described and utilised the affordances of online interaction, relative to males. Compared to their peers with lower social anxiety, more socially anxious young adults described feeling more confident, comfortable, and open in online versus offline interactions with close friends. Further, female young adults reported using the perceived control and accessibility of friends online for relationship maintenance more than their male counterparts. Results highlight the need for additional research exploring the nuances of online interactions and the experiences of such for young adults.

1. Introduction

Digital technologies are now ubiquitously used among youth; recent estimates suggest over 95% of young people in the US use the internet daily, with many reporting "almost constant" use of social media (Vogels et al., 2022). Such widespread engagement with the internet undoubtedly shapes the way youth navigate key developmental tasks of adolescence and young adulthood, including maintaining close, high-quality friendships. Researchers agree that the pervasiveness of social media has transformed how friendships are developed, maintained, and ultimately defined (e.g., Nesi et al., 2018; Yau & Reich, 2020). However, despite our increasing familiarity with online interactions and the availability of friends online, there is still much to learn regarding how friendships and social interactions "play out" in online versus offline (i.e., face-to-face) settings.

Social information processing theory (Walther, 1992) suggests that, over time and with sufficient message exchange, the quality of interactions, impressions, and relationships conducted online may be equivalent to those conducted in face-to-face settings. In line with Walther's suggestion, recent research suggests that digitally-mediated

interactions may be equally as meaningful and intimate as those conducted offline (Croes & Antheunis, 2021; Litt et al., 2020). However, researchers have also demonstrated that young adults perceive several differences in their online and offline interactions with close friends (Scott et al., 2022a). Ongoing investigation into contemporary friendships and social interactions is particularly important to reflect and understand the experiences of youth online, as the effects of social media on relationships and well-being "depend on how and why people use it, as well as who uses it" (Kross et al., 2020, p. 55).

High-quality friendships, characterised by self-disclosure, support, and shared interests, are critical for promoting positive adjustment and well-being, particularly in young adulthood (Buote et al., 2007; Demir & Özdemir, 2010; Hartup & Stevens, 1997; Raboteg-Saric & Sakic, 2014). Importantly, as friendships are now often conducted both online and offline, research has begun to explore how the friendships of young people are enacted in the digital era. Evidence suggests that young adults interact with friends seamlessly across contexts; the majority have friendships that are initiated offline and maintained both online and offline (Scott et al., 2021). Furthermore, core characteristics and behaviours of friendships, such as self-disclosure and validation, persist

across online and offline settings (Yau & Reich, 2017), perhaps because young people use numerous online platforms in complementary ways when engaging in self-presentation and interacting with friends (Valkenburg, van Driel, & Beyens, 2021; Waterloo et al., 2018).

Although researchers have identified similarities in friendships online and offline and suggest that online interactions provide an important and meaningful extension to offline friendships (Yau & Reich, 2020), some argue that these social experiences are "fundamentally different" online (Nesi et al., 2018). In the *Transformation Framework*, Nesi et al. (2018) propose that features of the digital environment create distinct interpersonal contexts that shape the experiences of youth online "across multiple domains, including peer victimization, peer status, peer influence, and friendship" (Nesi et al., 2018, p. 271). Features unique to online contexts, including reduced non-verbal cues, asynchronicity, permanence, and publicness of content online (Nesi et al., 2018) may be associated with affordances such as protection and control (Scott et al., 2022b), anonymity, visibility, and accessibility (e.g., Fox & McEwan, 2017), that each have implications for social interactions and relational experiences.

In qualitative work published by the current authors (Scott et al., 2022a) young adults' perceptions of their interactions with close friends online relative to offline, and notable differences across contexts, were explored. The study found that (1) *Control*, (2) *Non-Verbal Cues*, and (3) *Accessibility* were key *Features and Affordances* of online contexts influencing how young adults interact and engage in self-expression with close friends online. Additionally, (1) *Depth* of conversation, (2), *Intimacy and Closeness*, and (3) the perceived *Value of Interactions* were identified as elements of the *Nature of Interactions* with close friends that differed online versus offline. The study also identified that although young adults generally described their interactions as more intimate, authentic, and meaningful offline, compared to online, some individuals appear to "*experience more gratification when interacting online, as opposed to offline, with friends*" (Scott et al., 2022a, p. 8). To elucidate for whom perceived differences in online versus offline interactions with friends varied, in the current study, we extend on our past work by examining the roles of social anxiety and gender in shaping young adults' qualitative experiences online, in a mixed-methods approach.

Research finds youth higher in social anxiety perceive more safety, control, and protection online than offline (Kamalou et al., 2019; Valkenburg & Peter, 2009), experience reduced inhibitions online (Scott et al., 2022b), and use online interactions to compensate for gaps or lacking support in offline settings (O'Day & Heimberg, 2021; Weidman et al., 2012). Quinn (2018) identified socially anxious youth as some of the most likely to benefit from online interactions and the disinhibiting effects of social media, in line with the social compensation hypothesis (Negriff & Subrahmanyam, 2020). Specific features and affordances of online contexts also appear to support the communication of socially anxious youth; perceiving reduced non-verbal cues and the asynchronous nature of online interaction has been shown to benefit the breadth and depth of online communication, and emotional processes (e.g., expression of emotion online) among socially anxious adolescents and young adults, but not their less anxious counterparts (Angelini & Gini, 2023). Recently, Desjarlais (2022) described that online self-disclosure in both dyadic and group contexts supported feelings of social connectedness and in turn, subjective well-being, for more socially anxious youth. Such research demonstrates the potential for positive experiences and interactions online among socially anxious youth, however, it remains unknown whether socially anxious youth qualitatively describe their interactions online (relative to offline) differently from their non-anxious peers.

Gender differences also exist in perceptions of friendship quality and social internet use (e.g., Demir & Orthel, 2011; Krasnova et al., 2017). For instance, past research has demonstrated that although adolescent boys report using social media to practice offline self-disclosure skills and report feelings of belongingness online (Quinn, 2018; Valkenburg et al., 2011), females give and receive greater social support than males online, and are more likely than males to report feelings of closeness with Facebook friends (Thompson & Lougheed, 2012; Tifferet, 2020). Yet, limited research has explored whether such differences are perceived when young adults describe their online versus offline social interactions.

Supporting young people to engage in positive social interactions and relationships online has been identified as a critical focus for research and practice by educators, policy makers, and health advisories (e.g., American Psychological Association, 2023; The U.S. Surgeon General's Advisory, 2023). To better understand the role of individual differences in shaping contemporary friendships, employing a variety of methods and approaches in research is needed. Qualitative research aimed at elucidating lived experiences among distinct groups of youth can highlight how they characterise and understand their social relationships. For example, rather than understanding *to what extent* online relationships may differ for socially anxious versus non-anxious individuals, qualitative research allows a rich understanding of *how* and *why* more socially vulnerable youth experience their relationships differently. Adopting a qualitative, mixed methods approach also answers calls for research to move beyond broad questions about the overall effects of social media on well-being, to explore psychological processes that explain how and why social media impact well-being differently (Kross et al., 2020). In this study, we extended our previous work (Scott et al., 2022a) by exploring individual differences that may explain young adults' descriptions of their interactions across contexts and posed the following research question: Do young adults with high versus low-to-moderate social anxiety, and those who identify as male or female, share similar or different perceptions of their interactions with friends across online versus offline contexts?

2. Method

2.1. Participants and procedure

Young adults aged 17 to 25 ($N = 687$; $M_{age} = 19.45$ years, $SD = 2.07$) were recruited from an Australian university via an online research system for credit in a first-year psychology course and were eligible to participate if they were active social media users. Participants completed a 30-minute online questionnaire as part of a larger research project on young adults' internet use, friendships, and well-being (Scott et al., 2021). The survey included both open and closed questions, including the 19-item Social Interaction Anxiety Scale (SIAS; Mattick & Clarke, 1998). Ethical approval was obtained from the Griffith University Human Research Ethics Committee in 2019 (Protocol Number 2019/541).

The overall sample comprised 652 (94.9%) domestic students, and 411 (59.8%) respondents identified as female. The ethnicity of the sample was reported as 78.5% White Australian, 10.9% Asian, 1.7% Indigenous Peoples, and 8.9% from other backgrounds. Most participants (90%) used instant messaging services (e.g., Facebook Messenger, WhatsApp, or texting) at least daily.

A total of 672 participants provided a response to the open-ended question (detailed below) and were included in the initial round of coding. Following the first round of coding, 47 participants were removed from the data set for providing insufficient information or for providing responses that were irrelevant to the question. Further, 105 participants who described no difference between online and offline interactions with close friends were excluded from substantive analyses (see Scott et al., 2022a for more information). Of interest to the current study however, among the participants who reported no difference in their interactions across contexts, a considerably higher proportion had low-to-moderate social anxiety relative to those with high social anxiety (85.7% vs. 14.3% participants, respectively), and relatively equal proportions identified as male versus female (54.3% vs. 45.7%). The corpus of data presented in the Results and Discussion included responses from 520 participants (326 (62.7%) female; $M_{age} = 19.34$ years, $SD = 2.05$).

2.2. Data analysis strategy

Analyses focused on responses to an open-ended question: "*How do you think your interactions with your close friends online differ compared to interactions with them offline (i.e., face-to-face)?*" As the current study aimed to extend past results by exploring individual differences that may explain young adults' discourse of their online and offline interactions, we do not report in detail the process of coding data and thematic analysis, nor identified themes and subthemes in this study. The coding framework, process of codebook thematic analysis, and final thematic structure employed in the current study is outlined in our previously published work (see Scott et al., 2022a). To explore the frequency of endorsement at which discourse was coded across themes and subthemes, we conducted matrix coding in NVivo 12 comparing group membership on high (n = 103) versus low-to-moderate (n = 416) social anxiety (measured with the SIAS; Mattick & Clarke, 1998), using the clinical cut-off recommendation of Carleton et al. (2009). To identify gender groups, we included those who identified as female (n = 326) versus male (n = 193). Subsequently, we examined the *narrative content* of discourse across groups through exploration of the detailed coded data, and we report on distinctions across the groups that are theoretically and practically meaningful below. We also include some description of crosstab analyses that combine the attributes to explore differences in the low-to-moderate and high social anxiety groups across males and females, for each theme.

3. Results

As abovementioned, two key themes were identified in our previously published work, each with three subthemes. The first theme, *Features and Affordances*, encompasses three subthemes of (1) control over interactions online, (2) the presence or absence of non-verbal cues in online interactions, and (3) the accessibility and convenience of online interactions. The second theme, *Nature of Interactions*, includes three subthemes of (1) the depth of conversation with friends across online and offline settings, (2) feelings of intimacy and closeness across contexts, and (3) the perceived value of interactions with close friends (Scott et al., 2022a). The frequency of discussing the two themes is presented in Table 1 through weighted estimates of participants responses by social anxiety and gender. At the highest theme level, there were no differences between social anxiety and gender groups in the frequency with which the two themes were discussed. Of note, frequency and narrative differences were identified between groups at the subtheme level regarding the specific experiences of young adults' social interactions online. For each of the two higher order themes (*Features and Affordances* and *Nature of Interactions*), results at the subtheme level are discussed first for social anxiety, and then gender, and finally where crosstab analyses revealed differences by social anxiety groups and

gender these are subsequently discussed at the theme level (see Table 2 for cases coded by theme).

3.1. Features and Affordances

The following key differences were noted between social anxiety groups: young adults high in social anxiety (compared to those less anxious) more frequently commented on perceptions of control in their interactions with friends, and on the accessibility of friends online. Those with low-to-moderate social anxiety commented on the reduced non-verbal cues within online interactions more than their anxious counterparts. Regarding narrative differences, when young adults discussed the perceived control over self-presentation and social interactions online, those high in social anxiety more frequently commented on the time afforded within online communication for constructing appropriate, thoughtful, and funny messages to friends. In line with past research (e.g., Peter & Valkenburg, 2006; Yen et al., 2012), socially anxious young adults also reported feeling more confident and less awkward in online interactions with close friends than in offline ones: "*I am more confident and can say things more easily as I have more time to think of what to say and to curate the "right response" which relieves some social stress,*" (Female, 19 years). Comparatively, young adults lower in social anxiety expressed finding online interactions difficult, as the asynchronous nature of online communication caused "*slow,*" "*interrupted*" conversations. One young adult stated, "*It's just easier for me to communicate with people in-person rather than having to think about what I want to write [online]*" (Female, 20 years).

Similarly, when young adults lower in social anxiety discussed

Table 2
Crosstab analyses of cases coded across social anxiety group membership and gender.

Gender				
		Female	Male	Total
Social Anxiety	Low-to-Moderate	**253** Theme 1: 146 cases Theme 2: 188 cases	**163** Theme 1: 92 cases Theme 2: 125 cases	**416**
	High	**73** Theme 1: 43 cases Theme 2: 57 cases	**30** Theme 1: 12 cases Theme 2: 22 cases	**103**
	Total	**326**	**193**	**519**

Note. Cases = cases coded within each theme. Theme 1: *Features and Affordances*; Theme 2: *Nature of Interactions*.

Table 1
Matrix coding of young adults' perceptions of online and offline interactions by social anxiety group membership and gender.

	Overall Number of Coding References	Low–Mod Social Anxiety[a] (n = 416)	High Social Anxiety (n = 103)	Female (n = 326)	Male (n = 193)
Features and Affordances	**347**	**46.5%**	**47.6%**	**48.6%**	**43.4%**
Control	85	9.8%	12.1%	11.3%	8.3%
Non-Verbal Cues	136	17.0%	13.2%	16.0%	17.4%
Accessibility	126	16.0%	19.9%	17.1%	15.7%
Nature of Interactions	**539**	**53.6%**	**52.4%**	**51.4%**	**56.6%**
Depth	229	28.4%	15.4%	24.3%	29.0%
Intimacy and Closeness	82	7.8%	9.3%	9.2%	5.9%
Value of Interactions	228	21.1%	30.0%	22.2%	23.7%

Note. *N* = number of participants in each group coded at any of the themes. Column percentages are provided to give a weighted estimate of participants responses by social anxiety and gender.

[a] Low–Moderate and High Social Anxiety cut-offs were decided using the recommendation of Carleton et al. (2009). Participants categorized as socially anxious were those scoring equal to and above the clinical cut-off of 39.5, and the comparison group were those scoring below 39.5.

reduced non-verbal cues online, they described offline interactions as easier for both self-expression and for interpreting the body language and expressions of friends. Conversely, the discourse was more variable among young adults high in social anxiety such that they more often reported feeling comfortable, open, and at ease *online*, when non-verbal cues were minimised: "*There is a veil that allows a level of vulnerability to occur when I don't have to interact with the other person face-to-face to observe their immediate reactions and they cannot observe mine,*" (Female, 20 years). Recent research suggests that socially anxious young adults are more likely to perceive the internet as affording protection and invisibility than their less-anxious peers (Scott, Stuart, & Barber, 2023), and that greater perceptions of protection online are associated with reports of higher online disinhibition (i.e., reduced inhibitions online; Stuart & Scott, 2021), particularly among youth higher in social anxiety (Scott et al., 2022b). Importantly, the current findings highlight young adults higher in social anxiety report feeling more comfort and openness with close friends online relative to offline.

Regarding gender differences, women commented more frequently on the perceived control within, and accessibility of, online interactions, than men. Many participants agreed that the control afforded online allowed for more time to decide when and how to reply within interactions. However, women were more likely to communicate benefits of asynchronicity in online interactions than men, such as taking time to construct meaningful or supportive responses: "*When I am able to interact with my close friends online, I have more time to respond and therefore am often a better friend*" (Female, 18 years). Additionally, despite discussing the reduced non-verbal cues online with a similar frequency to men, women were more likely than men to report using compensatory behaviours online, such as including punctuation and emojis in messages to express themselves in the absence of facial expressions and body language. Women have previously expressed more positive attitudes toward emoji use than men (Prada et al., 2018), and such behaviours have been shown to promote emotional bonding among female friends within instant messaging interactions (Sherman et al., 2013). The current findings support the view that women are more likely than men to intentionally bypass the limitations of reduced non-verbal cues online for effective, intimate conversations with close friends.

When discussing the accessibility of online interactions, both men and women described online interactions as a convenient means of staying in touch with friends. Importantly, however, women most often described using online interactions to "*stay in touch*," "*check in*," and "*keep up*" with friends. This suggests that female young adults strategically engage with online interaction to maintain friendships that are geographically distanced, or in which busy schedules limit opportunities for face-to-face interaction. Conversely, men appeared more likely than women to use online interactions in goal-directed, purposeful ways, and often described having conversations with the specific intention of organising "*actual*" or "*real-life*" (i.e., *in-person*) meetings, and gaming with close friends: "*Online interactions are usually just setting up a time to hang out … Online interactions are also usually much shorter than face-to-face interactions, unless we are playing games online,*" (Male, 19 years).

Crosstab analyses revealed that within the low-to-moderate social anxiety group, comparable proportions of males and females discussed the *Features and Affordances* theme (57.7% of females; 56.4% of males). However, in this group, some narrative differences between males and females were noted. Specifically, females were more likely than males to reflect on the reduced non-verbal cues in online interactions, noting the implications for their self-expression of emotion and the accuracy of interpretation of tone and messages. Females also described being more strategic in their interactions than men, in how they would use the time available in online communication to craft better responses, to reconsider messages, and to be mindful of the fact that their messages were permanent and in written form: "*I think about what I say online a lot more than what I would offline – i.e., I take my time to reply, knowing that it is in writing and could be used/repeated in the wrong context,*" (Female, 21 years).

In the low-to-moderate social anxiety group, males described experiencing more conflict in their online interactions, perhaps because they were less likely to think of the consequences of their written messages than young adult females:

Because there is no physical feedback, I tend to talk about whatever comes to mind without really thinking about consequences and how it may affect the other person. Whereas face-to-face you can see other peoples' expressions and non-verbal feedback which may alter the way we communicate (Male, 24 years).

Although both males and females described online interactions as "*taking longer to get into deep conversation,*" males noted this was a possible result of their use of online interactions for gaming, organising in person catch-ups, and their engagement in media multitasking.

In the high social anxiety group, females were considerably more likely to comment on the perceived *Features and Affordances* of online communication than males (58.9% versus 40%, respectively). Yet, fewer narrative differences were noted between males and females were identified. Females often described being more open with their feelings online, relative to offline, alongside feeling more confident and less awkward when interacting behind a screen:

I think a lot more than I speak and so my interactions online make it easier for me to say what I really want to say behind a screen without the intensity of physical contact that for some reason makes me nervous and awkward (Female, 19 years).

Some males reported similar experiences, however, due to the small sample size of males who were included in the high social anxiety group (n = 30), and the smaller number of cases coded in this theme (n = 12), these findings must be interpreted with caution.

3.2. Nature of Interactions

Differences in how the social anxiety groups described the *Nature of Interactions* online and offline were noted across all subthemes. Of particular interest is that those lower in social anxiety discussed the perceived depth of interactions much more frequently, but at the same time, were less likely to describe the perceived value of interactions, compared to highly anxious youth. There was a consensus among young adults that offline conversations were more conducive to rich, deep, and engaging interactions with friends. However, some differences were noted whereby those with low-to-moderate social anxiety described having shorter conversations that were characterised by distraction and disconnection online, relative to those high in social anxiety, who more often described having more frequent contact with friends, and talking "*more*" online, relative to offline.

Regarding the perceived value of interactions online and offline, young adults with low-to-moderate social anxiety consistently described their offline interactions as more "*important,*" "*tangible,*" "*authentic,*" "*enjoyable,*" and "*meaningful*" than those conducted online. In contrast, some socially anxious young adults reported perceiving online interactions to be more "*sincere,*" "*fun,*" "*humorous,*" and "*open*" than those offline. This may be because young adults higher in social anxiety find it "*easier to make conversation online.*" One participant described: "*Online interactions can initially feel awkward, but once we're into the swing of things, the conversation gets deeper and the interaction feels significantly more authentic,*" (Female, 21 years).

Regarding gender differences, women more frequently discussed the perceived intimacy and closeness of interactions than men, whereas men more frequently reflected on the depth of their interactions with close friends across contexts. However, the discourse was consistent across all other subthemes for both genders. Specifically, almost all participants described their offline interactions with friends as more meaningful, richer, and more intimate (both emotionally and physically), perhaps because "*hanging out online doesn't really feel like spending time with someone,*" (Female, 21 years). This finding supports past research that has demonstrated that greater engagement in offline communication promotes feelings of understanding and satisfaction in relationships,

whereas texting does not predict relationship satisfaction (Pollmann et al., 2021). Thus, it appears that although there are clear differences in the perceived depth and value of interactions across settings for socially anxious versus less-anxious youth, the same differences are not identified when examining the narratives in discourse across men and women.

Much like the *Features and Affordances* theme, crosstab analyses revealed that within the low-to-moderate social anxiety group, similar proportions of males and females commented on the *Nature of Interactions* theme (74.3% of females; 76.7% of males). Further, narrative differences were also noted between males and females with low-to-moderate social anxiety. Females were more likely than males to discuss the importance of having few distractions in offline interactions for feeling engaged in their interactions with close friends. Females with low-to-moderate social anxiety also referred to their online interactions with friends as more superficial, and in some cases, described intentionally saving deep conversations for face-to-face settings where they could comfort and support friends more effectively: "*My friends and I save the in-depth conversation for face-to-face. I find it exhausting to try and type out what I'm feeling or to comfort a friend online,*" (Female, 22 years). Conversely, males described their interactions as more humorous, "*cheeky,*" and impulsive online, perhaps because their online interactions were focused on specific activities: "*When interacting online we're more focused on the activity, whereas in interactions offline, the focus is on each other as people,*" (Male, 19 years).

Although the sample size was considerably smaller in the high social anxiety group, females were more likely than their male counterparts to discuss the *Nature of Interactions* theme (78.1% of females; 73.3% of males). Specifically, females described talking "more" online than offline. Further, females frequently described that online interactions allowed them to feel more *like themselves*, and that they were able to form meaningful connections based on mutual interests that led to feelings of intimacy and an appreciation of online relationships:

My friends online feel closer or know me better because I can be myself without fear of judgement, so they see the real me more. Offline friends are still good to have social interaction, but I can go sometimes without it, through meaningful conversations online (Female, 20 years).

4. General Discussion

The current study aimed to explore how perceptions of differences in online versus offline interactions with friends would vary among young adults with different personal characteristics. We extended on our previously published work by testing group differences in young adults' qualitative comparisons of their online and offline interactions with friends, across social anxiety and gender. In doing so, we demonstrated that socially anxious youth differ from young adults with low-to-moderate social anxiety in terms of their descriptions of both the features and affordances of online communication, *and* the perceived nature of online versus offline interactions. Relative to their peers with lower social anxiety, more socially anxious young adults described interacting with friends more often online than offline, and feeling more confident, comfortable, and open in online versus offline interactions with close friends. Regarding gender differences, female young adults appeared to utilise the perceived control and accessibility of friends online for relationship maintenance more than their male counterparts; female young adults often described using online interactions to support and connect with close friends, whereas male young adults described making face-to-face plans and gaming online. Looking at the interaction between social anxiety and gender, our results suggest that among young adults higher in social anxiety, the affordances and benefits of online communication for enhancing confidence in online versus offline interactions were consistent across males and females. More variability was noted across genders in the low-to-moderate social anxiety group, signifying that for those without social anxiety, other individual differences may play a more proximal role in shaping perceptions of (and behaviours in) online interactions. Importantly, we note that small

sample sizes, particularly among young men who were categorized as high in social anxiety, necessitate caution in the interpretation of these conclusions.

Taken together, the current findings suggest that individual characteristics that impact individuals' social functioning in face-to-face contexts (i.e., social anxiety) are key shaping factors in both preferences for, and the perceived nature of, online versus offline interactions. Although some research suggests that the cognitive and behavioural processes that characterise social anxiety persist in online settings (Carruthers et al., 2019), our results suggest that affordances of online contexts may prove beneficial for minimising socially anxious young adults' hypervigilance towards social cues and threat, and negative interpretations of social information online (Hutchins et al., 2021). Further, our results corroborate past findings suggesting that anxious individuals find comfort in and value digitally-mediated communication for intimate interactions with others and relationship maintenance (Prizant-Passal et al., 2016; Reid & Reid, 2007), and that youth higher in social anxiety perceive their social interactions to be more successful in online versus offline settings (Shalom et al., 2015). In the current study, we propose that enhanced comfort and control online, and the reduced non-verbal cues within online settings, may promote successful interactions – even with close friends – for more socially vulnerable young people.

The current study also shed light on the role of gender in young adults' use of the internet to support their friendships. Research finds that females report higher levels of self-disclosure and closeness in their friendships than males, and that from early adolescence onwards, girls perceive their friendships to be more supportive than boys (De Goede et al., 2009; Johnson, 2004; Jones, 1991). Further, many of the activities friends engage in offline are present within online interactions (Yau & Reich, 2020), and females, but not males, are reported to derive satisfaction from social network site use that is motivated by the ability to maintain and strengthen close relationships online (Krasnova et al., 2017). In an extension of such research, our results demonstrate that some females described more intentional and strategic use of internet affordances for both relationship maintenance and the provision of social support to close friends than their male counterparts. Thus, we suggest that our well-established understandings of the gendered nature of friendships are also important to consider in exploring friendships online.

4.1. Limitations and study implications

The findings of the current study are strengthened by the large sample available for analyses and by the use of matrix coding to identify narrative patterns in young adults' descriptions of their contemporary interactions depending on group membership. However, there are limitations to be considered in this work. Notably, our sample was comprised of a convenience sample of young adult university students who self-identified as frequent users of the internet and social network sites and as such, our results may not be representative of the experiences of a clinical sample of socially anxious youth, or other samples of young adults with less access to (or familiarity with) the internet. Relatedly, we did not rely on clinical assessments and used self-report data of social anxiety. Therefore, although we used a relatively conservative cut-off to identify young adults high in social anxiety (Carleton et al., 2009), our findings should not be interpreted as representing clinically anxious youth with either social anxiety or generalized anxiety disorder. Further, we were limited by our sample of young adults who identified as male/female and were therefore unable to report on the qualitative experiences of young adults who identify with a gender diverse identity. Online friendships are a particularly important source of social support for transgender youth (Evans et al., 2017), and as such, future research should endeavour to explore the experiences of gender diverse young adults regarding their online versus offline interactions.

The current study has additional implications for both research and practice. Notably, although the research did not engage a sample of

young adults with clinical social anxiety, the results have applications to clinical settings. Specifically, the online environment may provide meaningful, comfortable, and accessible opportunities for socially anxious youth to practice social interactions and the results of this research could be used to develop interventions in this area. In addition, as the sample comprised university students, we suggest that Higher Education Institutes may benefit from understanding how these results can apply to students in the context of online learning. Notably, building relationships and developing a sense of university belonging has been shown to support academic performance and satisfaction in online learning (Stuart et al., 2022). Our research indicates that opportunities for authentic, real-time engagement with peers and university staff may be particularly beneficial students lower in social anxiety when engaging online. Conversely, for more socially anxious students, online contexts may afford more control over – and benefits for – their learning and social interactions with peers. Furthermore, it was commonly noted that offline interactions with friends were more intimate and enjoyable than online interactions regardless of gender and level of social anxiety. Yet, at the same time, our results indicate that intentional engagement with friends online may support feelings of closeness and support. As young adults interact with friends so frequently online (more than they do offline; Lenhart et al., 2015), developing the skills to effectively engage in purposeful online interactions that support emotional intimacy can benefit all youth across many different contexts, especially in the absence of offline interaction. However, in line with past research, we highlight the importance of online interactions as a means for supporting and complementing, rather than replacing, offline interactions and relationships (Scott et al., 2021; Weidman et al., 2012).

5. Conclusion

Research and theory are increasingly embracing the complexity of contemporary friendships and acknowledging that online contexts provide unique opportunities to develop and maintain friendships. The current study provides support for theoretical perspectives (Nesi et al., 2018) by outlining how distinct features of online contexts shape both perceptions of online versus offline interactions and online behaviour (in particular, compensatory behaviours). Furthermore, we provide qualitative evidence for the position of recent reviews that describe online contexts as a critical resource for peer interaction for socially vulnerable youth (Negriff & Subrahmanyam, 2020). By considering social anxiety and gender as factors that may affect young adults' descriptions of their interactions across contemporary contexts, we have highlighted that although many young adults report offline interactions as being more meaningful, satisfying, and deep, online contexts can facilitate comfortable, intimate, and supportive interactions with close friends, particularly among socially vulnerable youth.

CRediT authorship contribution statement

Riley A. Scott: Conceptualization, Formal analysis, Investigation, Methodology, Project administration, Writing – original draft, Writing – review & editing. **Jaimee Stuart:** Supervision, Writing – original draft, Writing – review & editing. **Bonnie L. Barber:** Supervision, Writing – original draft, Writing – review & editing.

Declaration of competing interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

Data availability

Data will be made available on request.

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