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Social media users have different experiences, motivations, and quality of life

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ABSTRACT

While the number of individuals participating in internet-based social networks has continued to rise, it is unclear how participating in social networks might influence quality of life (QOL). Individuals differ in their experiences, motivations for, and amount of time using internet-based social networks, therefore, we examined if individuals differing in social network user experiences, motivations and frequency of social network also differed in self-reported QOL. Two-hundred and thirty-seven individuals (aged 18–65) were recruited online using the online platform Mechanical Turk (MTurk). All participants completed a web-based survey examining social network use and the World Health Organization Quality of Life Scale Abbreviated Version (WHOQOL-Bref) to assess QOL. Individuals who reported positive associations with the use of social networks demonstrated higher QOL while those reporting negative associates demonstrated lower QOL. Moreover, individuals using social networks to stay connected to friends demonstrated higher QOL while those using social networking for dating purposes reported lower QOL. Frequency of social network use did not relate to QOL. These results suggest that QOL differs among social network users. Thus, participating in social networking may be a way to either promote or detract from QOL.

1. Introduction

Quality of life (QOL) is a multidimensional construct that refers to an individual's overall subjective well-being and life satisfaction in the context of culture and value systems and in relation to goals, expectations, standard and concerns (Lawton et al., 1999, 2001). Several important determinants of QOL have been identified, including lifestyle (e.g., habits), social and community environment (e.g., social network), clinical status and health care (e.g., medical conditions), and socioeconomic and financial factors (e.g., financial resources) (Konagaya et al., 2009; Johnson et al., 2013). A large body of research indicates that these determinants are interrelated and that modulation of one determinant can affect related determinants and QOL (Johnson et al., 2013). For example, more diverse social networks have been demonstrated to benefit physical and psychological health and overall QOL (House et al., 1988; Berkman, 1995; Cohen et al., 1997; Kawachi and Berkman, 2001; Konagaya et al., 2009; Johnson et al., 2013). Therefore, identification of factors that contribute to QOL enables understanding of mechanisms for maintaining optimal levels of QOL.

While having a diverse social network is generally beneficial to health and QOL (House et al., 1988; Berkman, 1995; Cohen et al., 1997; Kawachi and Berkman, 2001; Konagaya et al., 2009; Johnson et al., 2013), it is unclear how *internet-based* social networks might influence health and QOL. Historically, internet users have searched the web for medical information. However, with the growth of social network sites such as Facebook, Twitter, Instagram, and Google+, the Internet is now used not only as an information source but also for individuals to disseminate personal health information, experiences and knowledge (Scanfeld et al., 2010; Prieto et al., 2014). Research conducted in the area of emotional disclosure (Pennebaker et al., 1988), an intervention in which individuals write or talk about emotionally stressful materials reveals beneficial effects in some but not all participants (Vedhara et al., 2010). It remains unclear if emotional disclosure will work or actually have detrimental effects in a social networking setting. Moreover, recent research suggests that emotional states can be transferred to others via emotional contagion (Coviello et al., 2014; Kramer et al., 2014). For example, researchers observed that the emotional content displayed in user News Feed in Facebook influenced the posting behavior of the user. When positive expressions were reduced, users produced fewer positive posts and more negative posts; when negative expressions were reduced users produced greater positive posts and fewer negative

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posts (Kramer et al., 2014). Thus, understanding how social network usage might influence health and QOL is of significance.

There is evidence that individuals differ in both their internet-based social-networking experiences and their motivations for using social networks. For example, although many individuals report positive associations of Facebook use (Mauri et al., 2011), our previous work indicates that many Facebook users find the use of social networking to be stressful (Campisi et al., 2012) and others have found that Facebook use can result in declines in subjective well-being (Kross et al., 2013). Moreover, despite widespread use of Facebook, teens report waning enthusiasm for Facebook, disliking the increasing adult presence, people sharing excessively, and stressful "drama", but they keep using it because participating is an import part of overall teenage socializing (Madden et al., 2013). This report suggests that at least some users feel compelled to use social network sites. In addition, while many users benefit from information sharing through social networks such as Twitter (Alas et al., 2013), there is evidence that Twitter use can also result in negative psychological states for some individuals (Umihara and Nishikitani, 2013). It remains unknown if individuals who differ in their experiences with social networks or motivations for use also differ in how these networks influence their QOL.

The popularity of social-networking web sites such as Facebook and Twitter continues to increase and individuals report spending significant time connecting through internet-based social networks (D'Amato et al., 2010). For example, Facebook has surpassed Google as the most visited site in the United States, with over a billion monthly active users and more than 550 million daily active users (Kross et al., 2013). Twitter currently has over 250 million active users (https://twitter.com/twitter/status/28105 1652235087872), and around 400 million tweets are published daily. Interestingly, there is some evidence that the frequency of internet use modulates the user's experiences. A recent report indicates that a patient's frequency of internet use impacted their overall preference for both the type of information they received and their decision-making autonomy (Xie et al., 2013). Moreover, researchers are beginning to realize the value of using social networking sites to both "push" and "pull" information related to health, using these sites with greater frequency (Bartlett and Wurtz, 2015). Thus, understanding how social network usage might influence health and QOL is of great importance.

A number of aspects of QOL might potentially be modified by online social media use. For example, studies have indicated that access to basic health information by internet use may empower patients in physician-patient interaction (Robinson et al., 1998) and encourages active patient communication (Calbabretta, 2002). Moreover, research indicates that social network use is associated with improved social well-being (Achat et al., 1998). Therefore, it is possible that both physical and psychosocial QOL domains might be impacted by the user experience with social networks. Given that individuals differ in their experiences, and motivations for using internet-based social networks, their frequency of use, and that social networks generally influence health and QOL, we examined if individuals differing in social network user experiences, motivations and frequency of social network use also differed in self-reported QOL. We hypothesized that people reporting positive associations with social networking would report higher QOL than those who reported negative associations with social networking. In addition, we predicted individuals reporting positive motivations for using social networks would report higher QOL than those who expressed negative motivations for using social networking sites. We anticipated that both physical and psychosocial QOL domains might be impacted by the user experience, and motivations of use with social networks. Lastly, we predicted frequency of social network use would modulate the positive and negative impacts of social network use on QOL. In the event that significant differences exist between social media users and these variables future studies would be required to closely examine mediating factors.

2. Materials and methods

2.1. Participants

Participants were 244 individuals recruited online using Mechanical Turk (MTurk; www.mturk.com), an online platform run by Amazon (www.amazon.com). Subjects were at least 18 years old, United States residents, current users of social media networks, and members of the MTurk.com website (see Table 1). MTurk is a platform in which employers ("requesters") post-small human intelligence tasks ("HITs") and employees ("workers") perform those tasks for compensation (Bell et al., 2013). Participants were paid $0.50 for completing the experiment. All procedures were approved by the University Institution Review Board. Our previous research (Campisi et al., 2012) as well as power calculations indicate that this sample size is sufficient to demonstrate differences between groups. Sample sizes were calculated based on a 90% power at an alpha level of 0.05 to detect meaningful differences. This power value is equivalent to a probability of $<10\%$ of committing a type-II error. Studies suggest that MTurk samples are more diverse than college student samples (Paolacci et al., 2010) and the quality of data provided by MTurk samples and samples drawn from college populations has been reported to be equivalent (Buhrmester et al., 2011; Sprouse, 2011).

2.2. Procedures

All participants completed an informed consent and then completed a web-based survey adapted from our previous work examining social network use (Campisi et al., 2012). The survey asked subjects to respond to questions regarding their experiences with social network use by examining how using social networks made them feel on a 1–5 Likert-type response scale, with higher scores indicating the participant felt a particular way when using social networks and lower scores indicating they did not feel a particular way when using social networks (Table 3). The four stated feelings attributed to social networking use were based on previous data (Chou et al., 2009; Campisi et al., 2012; Chou and Edge, 2012;): feeling stressed, angry, happy, or sad. The survey also asked subjects to respond to questions regarding the motivations why they use social networks on a 1–5 Likert-type response scale, with higher scores indicating they use social networks for the listed reason and lower scores indicating they do not use social networks for the listed reason (Table 4). The fours stated motivations for use were also based on previous studies (Chou et al., 2009; Chou and Edge, 2012): to feel included, due to boredom, to stay connected with friends, or for dating purposes.

In order to examine QOL all subjects also completed the World Health Organization Quality of Life Scale Abbreviated Version (WHOQOL-Bref) (Skevington et al., 2004). The WHOQOL-Bref is a widely used self-report questionnaire developed by the World Health Organization. Two general questions include subjective evaluations of overall quality of life ("How would you rate your overall quality of life?") and overall satisfaction with health ("How satisfied are you with your health?"). The additional questions assess four QOL domains, including physical health (6 items), psychological health (6 items), social relationships (3 items), and environment (8 items) (Tables 2–4). Each question is rated on a 1–5

Table 1
Demographic and social network characteristics of participants.

Characteristic	Number (%)
Sex	
Male	143 (60)
Female	94 (40)
Age	
Mean	28.8
Range	18–65
Social networking use: overall use	
Facebook	210 (88)
Twitter	111 (46)
Google+	71 (30)
Dating sites	20 (8)
Social networking use: average # of log-ins/week	
Facebook	17.5
Twitter	10.3
Google+	9.2
Dating sites	9.5

Likert-type response scale, with higher scores indicating better QOL. Domain scores were calculated by taking the average raw scores and multiplying by four (Skevington et al., 2004). Thus, domain scores ranged from 4–20, with higher scores indicating better QOL. We excluded data when more than two items were missing for the physical, psychological, and environmental domains, and when one or more items were missing from the social relationships domain

To begin to investigate how frequency of social network use might modulate the impact of social network use on QOL, we asked subjects to quantify the number of times they logged-on to a social media website in an average week.

2.3. Data analysis

Given our initial research questions examined potential differences in QOL between social networking users (i.e., groups of participants), initial analysis utilized analysis of variance (ANOVA) to determine if main effects were present on the measured subscales. Alpha was set at 0.05. When statistical significance was determined with ANOVA, Fisher's PLSD post-hoc analysis was conducted to examine which groups differed. Our final research question examined the relationship between frequency of social networking and QOL. Pearson product-moment correlation coefficient analysis was used to determine the correlation between overall quality of life scores and the number of times visiting social media websites per week. All figures are shown with group means and standard error bars.

Table 2
Scores for participants on the WHOQOL-Bref.

Measure (possible range)	Mean (SE)	Range
Overall QOL (1–5)	3.77 (0.05)	1–5
Overall satisfaction with health (1–5)	3.73 (0.05)	1–5
Physical domain (4–20)	15.86 (0.18)	7.4–20
Psychological domain (4–20)	14.00 (0.2)	5.3–20
Social Relationships domain (4–20)	13.62 (0.269)	4–20
Environment domain (4–20)	14.56 (0.17)	6.5–20

3. Results

3.1. Demographic and social network use

Table 1 summarizes the demographic and social network use patterns of the subjects who completed the study. Of the 244 subjects recruited, seven subjects reported they were not current users of social networks or completed the survey under 2 min and therefore were excluded from the study because they did not fit inclusion criteria or because they responded too quickly to receive meaningful information. This left 237 subjects who completed the survey (averaged 5.4 min to complete), the majority (60%) were male users of social networks and the mean age was 28.8 years (age range 18–65). Subjects were asked to choose from a list of provided social network sites or write in additional sites when queried about their use of various networks. Facebook (88%) and Twitter (46%) were the most popular social network platforms participants reported using and also had the highest average number of log-ins/week (Facebook=17.5/week; Twitter=10.3/week). Subjects of various social networks did not differ in their QOL (e.g., users of Facebook and Twitter responded similarly to QOL measures) and thus analysis was conducted on all users. A small percentage (8%) of participants stated they used social networking for dating purposes.

Table 3
Mean (SE) scores for participants on the WHOQOL-Bref by how using social networking makes them feel.

Measure (possible range)	Stressed			Angry			Happy			Sad		
	Yes	Neutral	No	Yes	Neutral	No	Yes	Neutral	No	Yes	Neutral	No
Overall QOL (1–5)	3.18 (0.2)	3.22 (0.2)	3.88 (0.1)	3.21 (0.2)	3.42 (0.2)	3.84 (0.1)	3.83 (0.1)	3.88 (0.1)	3.59 (0.1)	3.08 (0.3)	3.37 (0.2)	3.84 (0.1)
Overall satisfaction with health (1–5)	3.31 (0.2)	3.77 (0.1)	3.77 (0.2)	3.28 (0.3)	3.47 (0.2)	3.78 (0.1)	3.81 (0.1)	3.79 (0.1)	3.57 (0.1)	3.16 (0.3)	3.62 (0.2)	3.77 (0.1)
Physical domain (4–20)	14.4 (0.8)	14.2 (0.7)	16.16 (0.1)	14.2 (0.9)	13.5 (0.6)	16.18 (0.1)	16.37 (0.3)	16.07 (0.2)	15.21 (0.3)	13.71 (0.9)	13.28 (0.8)	16.17 (0.1)
Psychological domain (4–20)	12.88 (0.7)	12.61 (0.6)	14.26 (0.2)	12.44 (0.7)	12.2 (0.5)	14.24 (0.2)	15 (0.3)	14.18 (0.3)	12.94 (0.3)	12.10 (0.8)	12.05 (0.8)	14.26 (0.2)
Social Relationships domain (4–20)	10.59 (0.8)	11.71 (0.8)	14.08 (0.2)	11.54 (1.0)	12.84 (0.8)	13.83 (0.4)	15.15 (0.4)	13.84 (0.3)	12.11 (0.4)	11.00 (1.0)	11.26 (0.8)	13.95 (0.2)
Environment domain (4–20)	13.8 (0.6)	12.91 (0.7)	14.79 (0.1)	13.41 (0.8)	12.97 (0.4)	14.78 (0.1)	15.02 (0.3)	14.85 (0.2)	13.85 (0.2)	13.25 (0.8)	13.3 (0.7)	14.73 (0.1)

Table 4
Mean (SE) scores for participants on the WHOQOL-Bref by motivations for using social networking websites.

Measure (possible range)	Feel included			Because bored			Stay connected			Dating		
	Yes	Neutral	No	Yes	Neutral	No	Yes	Neutral	No	Yes	Neutral	No
Overall QOL (1–5)	3.62 (0.1)	3.8 (0.1)	3.82 (0.1)	3.74 (0.1)	3.8 (0.1)	3.79 (0.1)	3.96 (0.1)	3.61 (0.1)	3.68 (0.1)	2.71 (0.4)	3.33 (0.2)	3.8 (0.1)
Overall satisfaction with health (1–5)	3.56 (0.1)	3.64 (0.1)	3.84 (0.1)	3.63 (0.1)	3.74 (0.1)	3.89 (0.1)	3.78 (0.1)	3.64 (0.1)	3.71 (0.1)	2.85 (0.4)	3.66 (0.2)	3.75 (0.1)
Physical domain (4–20)	15.25 (0.3)	15.28 (0.3)	16.15 (0.2)	15.52 (0.2)	16.11 (0.3)	16.26 (0.3)	16.29 (0.2)	15.45 (0.3)	15.65 (0.3)	12.57 (1.0)	15.29 (0.7)	15.99 (0.1)
Psychological domain (4–20)	14.02 (0.4)	14.02 (0.4)	13.98 (0.3)	13.47 (0.2)	14.76 (0.3)	14.25 (0.3)	14.63 (0.2)	13.76 (0.3)	13.24 (0.3)	12.31 (0.7)	13.62 (0.8)	14.06 (0.2)
Social Relationships domain (4–20)	13.53 (0.5)	13.63 (0.5)	13.65 (0.3)	13.36 (0.3)	14.26 (0.5)	13.52 (0.5)	14.8 (0.3)	13.48 (0.5)	12.11 (0.4)	9.91 (1.0)	12.45 (0.9)	13.81 (0.2)
Environment domain (4–20)	14.64 (0.3)	14.41 (0.3)	14.60 (0.2)	14.35 (0.2)	14.63 (0.3)	14.88 (0.3)	15.26 (0.2)	13.95 (0.3)	14.14 (0.3)	12.71 (0.8)	13.5 (0.8)	14.68 (0.1)

3.2. Self-reported QOL and satisfaction with health

The results of the WHOQOL-Bref are reported in Table 2. Regarding the two general questions on the WHOQOL-Bref, a majority (70.4%) of social network users rated their overall QOL as good or very good (score of 4 or 5), and 70% were satisfied with their health. Overall, participants scored the highest on the physical domain (mean = 15.86) and lowest on the social relationship domain (mean = 13.62) of the WHOQOL-Bref.

3.3. Self-reported QOL and experiences with social network use

In order to examine how participants viewed theirsocial media experiences, the survey asked participants to respond to statements regarding how using social networks made them feel (Table 3). Subjects were categorized as answering Yes (4 or 5), Neutral (3) or No (1 or 2) based on their responses to the statements. This analysis allowed for greater power and was conducted after initial analysis revealed no differences in the extreme responses (e.g., 1 vs 5) compared with the less extreme responses (e.g., 2 vs 4). Quality of life was significantly different depending on how using social networks made subjects feel (Table 3 and Fig. 1A–D). ANOVA revealed a main effect of subjects reporting using social network made them "feel sad" (Table 3 and Fig. 1A) on *lower* overall QOL score ($F(2234)=6.6$, $p=0.001$; Yes < No; 0.04), Physical domain QOL score ($F(2233)=11.7$, $p<0.0001$; Yes < No; 0.002, No > Neutral; 0.0001), Psychological domain QOL score ($F(2234)=6.5$, $p=0.001$; Yes < No; 0.01, No > Neutral; 0.005), Social Relationship domain QOL score ($F(2233)=5.9$, $p=0.003$; Yes < No; 0.01, No > Neutral; 0.01), and Environment QOL score ($F(2231)=3.8$, $p=0.02$; Yes < No; 0.05, No > Neutral; 0.03), but not overall Satisfaction QOL score. ANOVA also revealed a main effect of subjects reporting using social network made them "feel stressed" (Table 3 and Fig. 1B) on *lower* overall QOL score ($F(2232)=9.8$, $p=0.0001$; Yes < No; 0.001, No > Neutral; 0.001), Physical domain QOL score ($F(2231)=6.1$, $p=0.002$; Yes < No; 0.01, No > Neutral; 0.008), Psychological domain QOL score ($F(2232)=3.7$, $p=0.02$; No > Neutral; 0.02), Social Relationship domain QOL score ($F(2231)=7.9$, $p=0.0005$; Yes < No; 0.0009, No > Neutral; 0.01), and Environment QOL score ($F(2229)=5.0$, $p=0.007$; No > Neutral; 0.003), but not overall Satisfaction QOL score. Similarly, ANOVA also revealed a main effect of subjects reporting using social network made them "feel angry" (Table 3 and Fig. 1C) on *lower* overall QOL score ($F(2234)=5.5$, $p=0.004$; Yes < No; 0.007, No > Neutral; 0.03), Physical domain QOL score ($F(2233)=10.4$, $p<0.0001$; Yes < No; 0.01, No > Neutral; < 0.0001), Psychological domain QOL score ($F(2234)=4.8$, $p=0.008$; Yes < No; 0.03, No > Neutral; 0.01), and Environment QOL score ($F(2231)=5.6$, $p=0.004$; Yes < No; 0.07, No > Neutral; 0.003), but not overall Satisfaction ($p=0.09$) or Social Relationship domain QOL score ($p=0.09$). Lastly, ANOVA also revealed a main effect of subjects reporting using social network made them "feel happy" (Table 3 and Fig. 1D) on *higher* Physical domain QOL score ($F(2232)=3.4$, $p=0.03$; Yes > No; 0.01, No < Neutral; 0.04), Psychological domain QOL score ($F(2233)=9.0$, $p=0.0002$; Yes > No; < 0.0001, No < Neutral; 0.007), Social Relationship domain QOL score ($F(2232)=10.9$, $p<0.0001$; Yes > No; < 0.0001, Yes > Neutral; 0.04; No < Neutral; 0.005), and Environment domain QOL score ($F(2230)=4.7$, $p=0.009$; Yes > No; < 0.006, No < Neutral; 0.01), but not overall QOL score ($p=0.07$) or Satisfaction QOL score ($p=0.2$).

3.4. Self-reported QOL and motivations for using social networks

In addition to the WHOQOL-Bref, all participants also completed a web-based survey adapted from our previous work examining social network use (Campisi et al., 2012). The survey asked participants to respond to questions regarding the motivations why they use social networks (Table 4). Subjects were categorized as answering Yes (4 or 5), Neutral (3) or No (1 or 2) based on their responses to the questions. Quality of life was significantly different depending on many of the stated reasons for social network use (Table 4 and Fig. 2A–D). ANOVA revealed a main effect of subjects reporting they use social networks "to stay connected to friends" (Table 4 and Fig. 2A) on *higher* overall QOL score ($F(2232)=3.9$, $p=0.02$; Yes > No; 0.03, Yes > Neutral; 0.01), Psychological domain QOL score ($F(2232)=4.5$, $p=0.01$; Yes > No; 0.003, Yes > Neutral; 0.06), Social Relationship domain QOL score ($F(2232)=4.5$, $p=0.01$; Yes > No; < 0.0001, No < Neutral; 0.04; Yes > Neutral; 0.03), and Environment QOL score ($F(2232)=4.5$, $p=0.01$; Yes > No; 0.005, Yes < Neutral; 0.01), but not overall Satisfaction or Physical domain QOL scores. ANOVA also revealed a main effect of subjects reporting they use social network "for dating purposes" (Table 4 and Fig. 2B) on *lower* overall QOL score

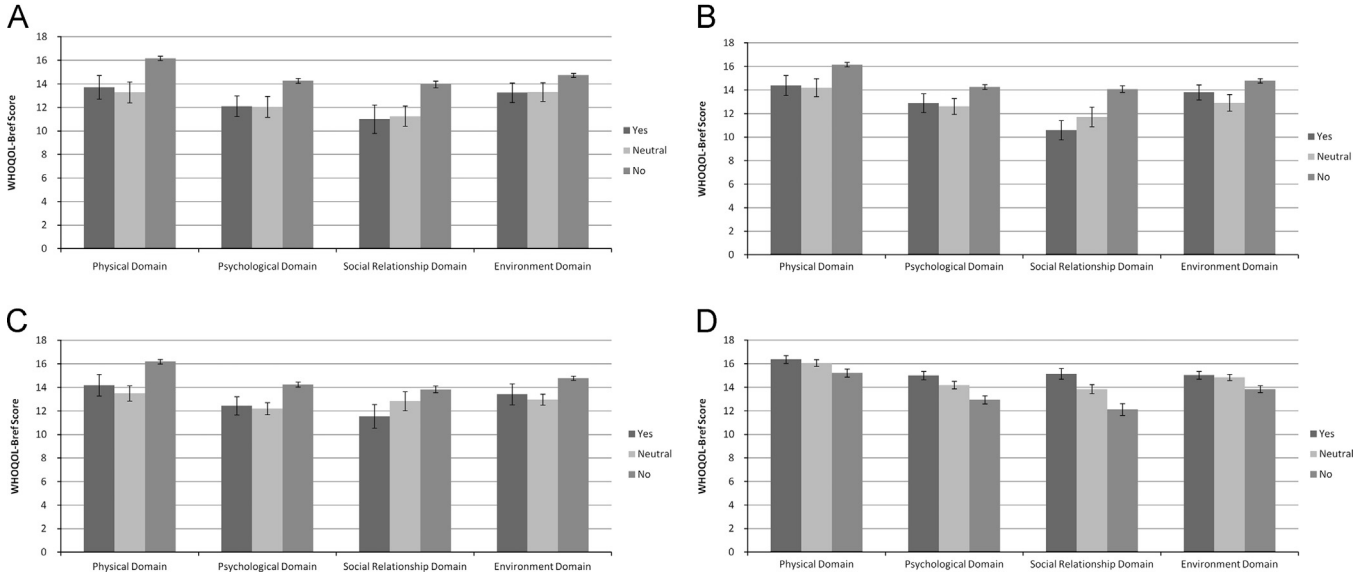

Fig. 1. Self-reported WHOQOL-Bref QOL scores for the Physical, Psychological, Environment, and Social Relationship domain as a function of the quality of social network experience. Participants reported if using social networks made them feel sad (A), stressed (B), angry (C), and happy (D). Bars are means ± standard errors of the means.

($F(2232)=8.3$, $p=0.0003$; Yes < No; 0.0006, No > Neutral; 0.02), Physical domain QOL score ($F(2231)=5.2$, $p=0.005$; Yes < No; 0.001, Yes < Neutral; 0.03), Social Relationship domain QOL score ($F(2231)=3.7$, $p=0.02$; Yes < No; 0.01), and Environment QOL score ($F(2229)=3.2$, $p=0.04$; Yes < No; 0.04, No > Neutral; 0.09), but not overall Satisfaction ($p=0.06$) or Psychological domain QOL scores. In addition, ANOVA revealed a main effect of subjects reporting they use social network "for boredom" (Table 4 and Fig. 2C) on *lower* Psychological domain QOL score ($F(2234)=3.7$, $p=0.02$; Yes < Neutral; 0.009), but no other differences were observed. Finally, no difference was observed regarding the reason "use to feel included" and any measure (Table 4 and Fig. 2D).

3.5. Self-reported QOL and frequency of social network use

In order to determine if the frequency of social network use impacted QOL we conducted correlation analysis to examine the relationship between overall QOL score and the number of log-ins to social network sites per week. Pearson product-moment correlation coefficient revealed an r value of -0.029 indicating frequency of social network use did not relate to QOL in our sample.

4. Discussion

Individuals differ in their experiences using, and motivations for using internet-based social networks. For example, social network users often report they use Facebook as "a way to stay connected to friends and family", while others state they must use Facebook or risk feeling "left out" (Madden et al., 2013). In the current study, we hypothesized that people reporting positive associations and motivations when using social networking would report higher QOL than those who reported negative associations and motivations for using social networking sites. We also predicted frequency of social network use would modulate the positive and negative impacts of social network use on QOL. Our results partially support these hypotheses as the data indicates users differ in their experiences with social media use, motivations for use and QOL. However, correlations were not found between the frequency of social media use and QOL. Therefore, future studies will be needed to clarify which mediating factors contribute to the observed differences reported in the current study.

The results of the current study indicate that QOL was significantly different in participants who differed in on how using social networks made them feel (Table 3 and Fig. 1A–D). Individuals reporting feeling sad, stressed, or angry by using social networking sites had lower reported QOL scores (Table 3 and Fig. 1A–C). In contrast, subjects reporting using social network made them "feel happy" reporter higher QOL scores (Table 3 and Fig. 1D). Taken together, these results were largely consistent across many of the QOL domains suggesting that both physical and psychosocial QOL domains are different in these various social network user populations.

2Quality of life was also found to be significantly different in participants who differed in their motivations for using social networks (Table 4 and Fig. 2A–D). Subjects reporting they use social networks "to stay connected to friends" demonstrated higher QOL scores (Table 4 and Fig. 2A) while subjects reporting they use social network "for dating purposes" (Table 4 and Fig. 2B) or "for boredom" (Table 4 and Fig. 2C) reported lower QOL scores. Similar to our previous results, these findings were consistent across many of the QOL domains suggesting that both physical and psychosocial QOL domains differed in individuals who differed in their motivations for use. Interestingly, when asked directly about their overall health, 70% of respondents stated they were satisfied with their health overall and, for most measures, the overall health satisfaction scores were not significantly different despite differences in individual QOL domains. This observation might indicate that the individual QOL domains (which are composed of multiple responses) are better indices for QOL than one overall question may be, especially when the overall health satisfaction scores are relatively high.

Given our study design (i.e., surveying current users of social media) it is not possible to indicate if the reported differences in QOL existed in subjects before they began to use social media. For example, it is unclear if subjects reporting they use social network "for dating purposes" had lower QOL scores than individuals using social networking for other purposes prior to using online dating sites. However, in contrast to our results, individuals with a more diverse social network (i.e., are dating and/or attached) generally demonstrate improved physical and psychological health and overall QOL (House et al., 1988; Berkman, 1995; Cohen et al., 1997; Kawachi and Berkman, 2001; Konagaya et al., 2009; Johnson

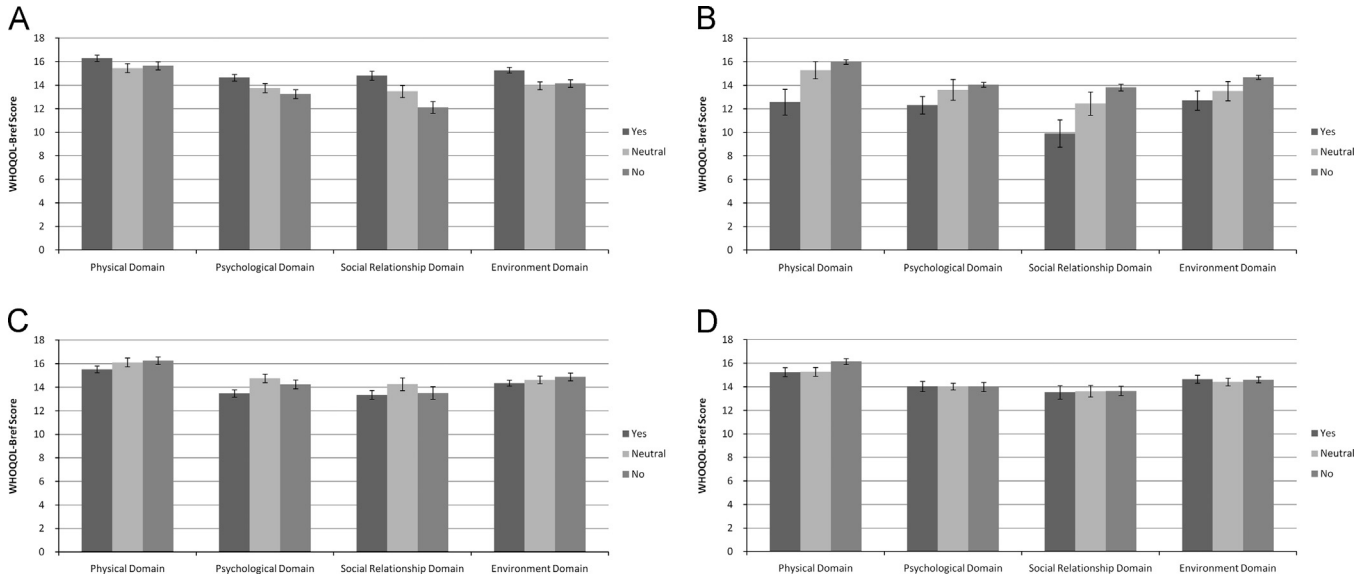

Fig. 2. Self-reported WHOQOL-Bref QOL scores for the Physical, Psychological, Environment, and Social Relationship domain as a function of the motivations for using social networks. Participants reported if they used social networks to stay connected to friends (A), for dating purposes (B), for boredom (C), and to feel included (D). Bars are means ± standard errors of the means.

et al., 2013). Collectively, these results could suggest the nature of online dating might impact QOL differently than non-online dating. Future study designs that measure QOL before and after social media use can answer this question more definitively.

In the current study, the frequency of social network use had no impact on QOL scores. These results might reflect the relative high use of social networks in all of the subjects (Table 1) and might be biased by the fact that subjects were recruited to participate in this study through social networks. Future studies examining the impact of frequency of social network use on a more diverse population might indicate different results. In addition, because our study utilized a convenience sample our results might not be generalizable to a larger population of social network users. Thus, it is important to replicate these results in a larger cross-section of the population. Moreover, because the current study only examined one indicator of social media use (frequency of log-ins), it will be important in the future to examine other indicators of social media use (e.g., how often one leaves a comment, uploads a picture, etc.).

To our knowledge, this is the first study examining how *internet-based* social networks might influence QOL. However, our results corroborate previous results indicating multiple ties to friends, family, work and community have been demonstrated to benefit physical and psychological health (Berkman, 1995; Helgeson et al., 1998; House et al., 1988; Kawachi and Berkman, 2001). Although, individuals who were more likely to find social networks unpleasant or felt compelled to use them did not reap the benefits of use. These results are consistent with our previous research indicating that individuals reporting stress as a result of Facebook use had worse health (i.e., greater incidence of upper respiratory tract infections (URI)) than individuals not reporting Facebook-induced stress (Campisi et al., 2012). In light of these results, and evidence that a Facebook-induced stress response can serve as a trigger for asthma attacks (D'Amato et al., 2010), it appears that a user's experience with social networks can have a significant impact on their health.

Social networking sites are used as an information sources but also for individuals to disseminate personal health information, experiences and knowledge (Scanfeld et al., 2010; Prieto et al., 2014). Use of these online sites has translated to significant psychological and physical well-being for users. Use of social network sites is being implemented by numerous hospitals and health care workers to educate patients and to promote improvements in health care. For example, social networking has demonstrated effective in combating a number of chronic diseases, such as diabetes mellitus, obesity and mental health conditions (Ashrafian et al., 2014; Greene et al., 2011, Liaw et al., 2010). Thus, increasingly, online activities are related to offline activities. Therefore, understanding how to take advantage of the positive aspects and decrease exposure to the negative aspects of online social networking is becoming increasingly more important as use of social medial continues to rise.

In conclusion, the results of the current study indicate that the impact of social network use on QOL differs among individuals. Participating in social networking may be a way to either promote or detract from QOL. The underlying reasons for what makes social networks pleasant to some and unpleasant to others and the underlying mechanisms describing how these differences modulate QOL and health are important areas of investigation in the future.

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