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The role of personality and depression in problematic use of social networking sites in Greece

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Abstract

The purpose of the present study is to examine the relationship of Social Networking Site (SNS) problematic usage with personality characteristics and depressive symptomatology. A sample of 143 young adults in Greece varying from 18 to 34 years of age completed four questionnaires on personality characteristics, depressive symptomatology, problematic SNS usage and socio-demographic factors. Problematic SNS usage is significantly and positively related to depression and Neuroticism, while negatively associated with Agreeableness. However, problematic use of SNS is not related to Conscientiousness, Openness to Experience and Extraversion, although the latter was found to be negatively associated with depression. Collectively, personality variables, depression and daily average usage account for about 33% of the variance in predicting problematic SNS usage. In contrast to previous research findings, age and gender are not found to be related to either problematic SNS usage or depressive symptomatology. However, place of residence is associated with Neuroticism and Problematic Use, with participants from rural areas exhibiting higher scores than participants from urban areas. Finally, Neuroticism and the average daily use of SNS have been proven to be good predictors of problematic SNS usage. Personality, depressive symptomatology and socio-demographic factors relate to the way Social Networking Sites are being used. Implications are discussed.

Keywords: depression; Internet; personality characteristics; problematic use; social networking sites; young adults

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Introduction

Researchers from disparate fields all over the world are intrigued by the growing popularity and the millions of users that have integrated Social Networking Sites in their everyday lives. Their mass appeal on Internet users is one of the areas that has been identified by researchers as a potential cause of concern (Kuss & Griffiths, 2011). According to Alexa.com, statistics show that next to Google, Facebook is the second most visited site online in Greece. Greece is also ranked in the 42nd place worldwide. There are more than 4 million Facebook users and the largest user age group is 25-34, followed by users in the age of 18-24 (Socialbakers, 2013). Although international literature on the subject is constantly growing, little research has been conducted in Greece regarding the use of these sites, as well as whether they possess addictive qualities. The purpose of this study is to examine the relationship of the Social Networking Site (SNS) problematic usage with personality characteristics and depressive symptomatology in a sample of Greek young adults.

Recent studies (i.e. Bahk, Sheil, Rohm Jr., & Lin, 2010) witness the growing dependence of young people on social media (Facebook, MySpace, text messaging, Twitter, and blogs). Spending an excessive amount of time (i.e. several hours a day) on Facebook might lead to severe negative effect on one's activities in life like work, school and face-to-face interactions (Sevilla, 2012). Even though "Online Social Network Dependency" is considered to be a form of internet addiction (Thadani & Cheung, 2011), is not recognized as a mental disorder or illness (Walker, 2012), but it is viewed as a behavioural addiction that is harder to resist compared to substance addictions such as smoking and drinking alcohol (Goessl, 2012; Walker, 2012). It incorporates symptoms such as change of mood, preoccupation with SNS usage, gradual increase in use, withdrawal symptoms, interpersonal and psychological

problems and possibility of relapse after a period of abstinence (Griffiths, 2005).

The use of Social Networking Sites is also associated with negative consequences such as low self-esteem (Valkenburg, Peter, & Schouten, 2006), poor academic performance (Kirschner & Karpinski, 2010), relationship problems (Muise, Christofides, & Desmarais, 2009) and depression (Morahan-Martin & Schumacher, 2000; Morahan-Martin, 2005). Davis (2001) argues that depression precedes PIU (depressed individuals prefer online communication to receive support), while other research findings have shown that uncontrolled or compulsive Internet use has negative effects on psychological well-being of young adults, such as loneliness (Moody, 2001) and depression (Whang, Lee, & Chang, 2003). In fact, emerging adults (18-25 years of age) have the highest incidence and cumulative prevalence of depression (25%) than any other age group (Kessler & Walters, 1998; Klerman & Weissman, 1989; Klerman, 1988). Young adults are faced with life choices concerning jobs, unemployment, debt and relationships (Grant & Potenza, 2010). The term "*quarter-life crisis*" is used to describe these many challenges and stressors of this life-stage (self-exploration, lack of social networks, high expectations) leading to emotional and mental health issues (Olson-Madden, 2007; Robbins & Wilner, 2001).

There are various studies (i.e. Ross, Orr, Sisic, Arseneault, Simmering, & Orr, 2009) that explore the relationship between online behaviours, Social Networking Site usage, and individual differences. Many use the Five-Factor Model of personality dimensions, one of the most well-regarded measures of personality structure (Golbeck, Robles, & Turner, 2011), that divides personality into a series of five dimensions: Neuroticism, Extraversion, Openness to Experience, Agreeableness and Conscientiousness (McCrae, 1992). People who were high on the trait of *Neuroticism* could use the Internet in order to avoid loneliness (Butt & Phillips, 2008) and to seek social support (Wilson, Fornasier, & White, 2010). *Extraversion* has been shown to be associated with problematic use of social media; high levels are associated with social enhancement, whereas low levels with social compensation (Kuss & Griffiths, 2011). *Agreeableness* is another trait that has been shown to be associated with online social interactions and their quality (McCarty & Green, 2005). People with low levels of Agreeableness would have fewer friends in SNSs, as they would have difficulties forming relationships in the offline world (Landers & Lounsbury, 2006). Previous research shows that *Conscientiousness* seems to be negatively correlated with the use of internet or other forms of computer mediated communication (Butt & Phillips, 2008), whereas *Openness to experience* is found to be associated with trying out new methods of communication (Butt & Phillips, 2008) and the frequency of social media usage (Correa, Hinsley, & de Zuniga, 2010). In general, the factors of Neuroticism, Extraversion and Conscientiousness seem to be highly associated with problematic use of social media (Kuss & Griffiths, 2011).

Additionally, socio-demographic factors such as age, gender and place of residence are found to influence SNS usage as well. Research has shown that young adults are very accustomed to using new technologies (Gore, Leuwerke, & Krumboltz, 2002) and students in particular (Kuss & Griffiths, 2011) use Social Networking Sites because of their inbuilt features of Web 2.0 (applications that facilitate the creation of user-generated content in a virtual community). Young adults are more likely than any other age group to have a profile in a Social Networking Site (Raacke & Bonds-Raacke, 2008) and engage in high levels of use. Additionally, it was observed that young adults have been shown to be at high risk for behavioural addictions (Grant, Potenza, Weinstein, & Gorelick, 2010). College students in particular, are most at risk in terms of developing problematic Internet use (Nalwa & Anand, 2003), a vulnerability that seems to be due to their "largely unfettered, unsupervised access to the Internet and independent control of their time" (Christakis, & Moreno, 2011).

According to Kuss and Griffiths (2011), research has also suggested gender differences in SNS usage patterns, with males being drawn to online games and females being attracted to online communication. Although Wolfradt and Doll (2001) suggested that gender is a major factor to consider when researching Internet use or use of Social Networking Sites, most of the previous research findings are ambiguous, showing either men or women to exhibit higher problematic SNS usage (i.e. Amichai-Hamburger & Ben-Artzi, 2003; Pfeil, Arjan, & Zaphiris, 2009; Raacke & Bonds-Raacke, 2008). Geographical location was researched as a factor mainly in terms of access to internet and the "digital divide", that is the unequal access to computers and the internet (Dewan & Riggins, 2005); urban areas are more likely to have internet access than rural areas, even though this fact is rapidly changing. A study on Norwegian adolescents (Johansson & Gotestam, 2004) showed that the frequency on problematic Internet use was relatively higher on small cities and rural areas than in large cities (more than 150,000 inhabitants).

When examining the concepts of problematic SNS usage, personality and depression, one cannot overlook the significant influence of cultural factors, as they are important not only among eastern and western societies but also for European countries. Despite the indisputable similarities, there are important and fundamental differences in social, political, financial, historical, ethnic and cultural backgrounds among the northern, central and southern countries forming the European Union and especially Greece which seems to be in the midpoint between east and west. Several studies identify cross-cultural differences examining SNS usage mainly between Western and East Asian societies (for example Qiu, Lin, & Leung, 2012), supporting the argument that people from different cultural backgrounds behave and communicate online in systematically different ways (Rosen, Stefanone, & Lackaff, 2010).

Vasalou, Joinson, and Courvoisier (2010), found differences in SNS usage between Greek, US, UK, French and Italian users. While Facebook users from Italy preferred groups, games and applications, Greek users found status updates as unimportant. Furthermore, users from France visited Facebook less frequently, in contrast to UK users that spend more time online than any of the other groups. Interestingly, Greek users had the most similarities with US users than the Facebook users from the other European countries. Vasalou et al. (2010) argue that these findings suggest that motivation, use and time investment in these sites cannot be assumed to be universal.

Differences on depression, personality characteristics and problematic SNS usage may well be based on underlying sociological and cultural particularities of Greek users, therefore an investigation of localized problematic SNS usage will contribute to enhancing our understanding of the phenomenon. Given the study objectives, as well as the literature review, the following research hypotheses are set:

1. There is a significant positive relationship between problematic SNS usage and depressive symptomatology.
2. There are significant relations between problematic SNS usage and personality characteristics: a) positive correlations with Neuroticism and Openness to Experience, b) negative correlations with Extraversion, Agreeableness and Conscientiousness.
3. There are significant differences among individuals with low, average and high daily SNS usage with regards to depression, personality characteristics and problematic SNS usage.
4. There are significant differences in gender, age and place of residence regarding problematic SNS usage, depressive symptomatology and personality characteristics.
5. Personality dimensions, depressive symptomatology, place of residence and SNS habits (length of membership, number of Friends, daily usage), collectively considered, constitute good predictors of problematic SNS usage.

Method

Subjects and Procedure

The research was conducted in the extended area of Thessaly, central Greece. Thessaly is the 3rd largest in population administrative region of Greece with 4 prefectures, 4 large cities and hundreds of towns and villages. The subjects were randomly selected and approached by the two researchers in public places (e.g. University campus, coffee shops and internet cafes). These public places were chosen because of their accessibility and the fact that the majority of their patrons are young adults. After verifying that their age was between 18-34 years and that they used one or more Social Networking Sites, 163 subjects were asked to participate voluntarily and complete anonymously, in the presence of the researcher, a booklet with written questionnaires on the use of Facebook and Social Networking Sites that takes about 20 minutes to answer. The vast majority of the subjects accepted to complete the booklet, as most of them were familiar with answering questionnaires during their academic studies. Thirteen subjects (7.97%) refused to participate due to lack of time, whereas, seven questionnaires (4.2%) had to be excluded from the data mining process as they were not answered in whole.

Consequently, the final sample consisted of 143 young adults, 60 males (42%) and 83 females (58%), between the ages of 18 and 34 ($M = 23.8$, $SD = 4.59$). More than 65% live in cities (more than 100,000 residents), while 16% live in villages (less than 1,500 residents); a percentage that corresponds to the Greek national average of people living in villages (EL.STAT., 2011). Fifty-one percent were undergraduate students, whereas the rest of the participants had either finished their degree (25.9%), were postgraduate students (7.7%) or had High school education (15.4%). The vast majority (96.5%) used Facebook and maintained a profile for three or more years, whereas 30.8% used, together with Facebook, other Social Networking Sites (mainly Twitter). The average amount of time spent daily on Social Networking Sites varies from 30 minutes to 1 hour; however, no more than 9% of the sample indicated that they use Social Networking Sites for more than 2 hours daily.

Measures

A short demographic survey was employed to provide information on the characteristics of the participants, as well as their SNS habits. Additionally, three questionnaires were administered that were translated, adapted into Greek and revised through back-translations by a team of four bilingual professionals: two psychologists and two specialists in English and Greek language.

Modified Generalized Problematic Internet Use Scale (GPIUS). The scale was initially created by Caplan

(2002) in the USA and is based on Davis's (2001) cognitive – behavioral model of Problematic Internet Use, which focuses on cognitions and behaviors relating to Internet use that affect psychosocial health. It is a 29-item questionnaire answered on a 5-point Likert scale with scores ranging from 29 to 145 (e.g. "I have used social networking sites to talk with others when I was feeling isolated"). High scores indicate more "symptoms" of Problematic Internet Use. The scale was modified by Spraggins (2009) by replacing the word "Internet" and "online" with the words "Social Networking Sites".

According to the factorial structure, GPIUS scale contains seven factors: mood alteration, perceived social benefits, negative outcomes, compulsive use, excessive time online, withdrawal, and social control. Reliability analyses indicated high internal consistencies, with alpha coefficients ranging from .78 to .85 for the seven subscales. Validity support is indicated by the significant relationship between GPIUS scores and measures of depression, loneliness, and self-esteem (Caplan, 2002, 2003) in a direction consistent with Davis's (2001) model of PIU, such as the Beck Depression Inventory-II, the Rosenberg Self-Esteem Scale, the UCLA Loneliness Scale and the Social Retention Scale.

Questionnaire of Self Evaluated Depressive Symptomatology (QD2). The questionnaire was created by Pichot et al. (1984). It consists of 52 items that describe a variety of depressive symptoms: affective, cognitive and somatic (e.g. "I have difficulties in avoiding the negative thoughts that come to my mind"). This self-report questionnaire is answered with "true" or "false" and the scores range from 0 to 52. High scores relate to more severe levels of depression. The QD2 derived from the content analysis of the items of the four best known self-report inventories exploring the symptoms experienced by depressive patients: the Hopkins Symptoms Check List, the French version of the Beck Depression Inventory (BDI), the Depression Scale of the Minnesota Multiphasic Personality Inventory (MMPI-D) and the Zung Self-Rating Depression Scale (SDS).

The QD2 has a) a good homogeneity, b) a good reliability (split-half method; Spearman-Brown formula), ranging from .92 to .95, c) a good concurrent validity and d) a satisfactory factorial structure, which revealed three basic dimensions: feelings of loss of general drive, depressive-pessimistic mood and anxiety (Kleftaras, 1991, 1997, 2006; Kleftaras & Psarra, 2012; Kleftaras & Tzonichaki, 2010; Pichot et al., 1984).

NEO-Five-Factor Inventory (NEO-FFI). The NEO Five Factor Inventory was used to measure personality traits and is the brief subset of the full 240 question NEO-PI-R. According to the Big Five model (Costa & McCrae, 1992), there are five domains of the adult personality; Neuroticism, Extraversion, Openness to Experience, Agreeableness, and Conscientiousness. In the NEO-FFI there is a total of 60 items that ask the respondents to rank their agreement with the statement on a 5-point Likert scale (e.g. "When I'm under a great deal of stress, sometimes I feel like I'm going to pieces"). People scoring high on a scale are considered to have a significant degree of that trait.

Although the NEO-PI-R's length allows for more precise measurement and better false answer detection, the NEO-FFI was chosen because it consists of the psychometrically strongest items from the revised NEO Personality Inventory (NEO PI-R), as well as because it has relatively short length and it is easy to score and interpret. Respective internal consistency alphas of .86, .77, .73, .68, and .81 were obtained for the NEO-FFI Neuroticism, Extraversion, Openness, Agreeableness, and Conscientiousness scales, while 3-month test-retest correlations ranged from .75 to .83. The brief instrument has adequate internal reliability and correspondence with the full scale (McCrae & Costa, 1989) and thus has been used widely for research and clinical purposes.

Results

In order to verify the hypotheses of this study, a variety of statistical analyses were conducted, including factor analysis, correlations, t-test, one-way ANOVA and multiple regressions.

Since the validity of the measures used in the present research has not been studied in a Greek population, it was deemed necessary to study their factorial structure based on our sample. Principle-components factor analyses, using Varimax rotations, were conducted to all instruments. GPIUS contained seven factors explaining 65% of the variance. The factor labels proposed by Caplan (2002) suited the extracted factors and were retained. The reliability coefficients, as found in the present study, were .92 (Cronbach's α) and .84 (split-half reliability). QD2 showed the three primary factors that were found in the study of Pichot et al. (1984) explaining 35.1% of the variance and had reliability coefficients .94 (Cronbach's α) and .91 (split-half reliability). Finally, NEO-FFI revealed five primary factors that explained 37.5% of variance. Cronbach's alphas for Neuroticism, Extraversion, Openness, Agreeableness and Conscientiousness, as found in the present study, were .76, .65, .69, .53, .81 respectively.

Regarding Social Networking habits, the number of "Friends" that have access on the profile of the participants was positively correlated with the average daily SNS usage ($r_s = .27, p < .01$) and the length of membership in a

Social Networking Site ($r_s = .42, p < .01$) while negatively correlated with age ($r_s = -.45, p < .01$) suggesting that the younger someone is, the longer s/he uses a Social Networking Site, and consequently the easier it is to accumulate more "Friends". In addition, the length of membership in a Social Networking Site was positively correlated with the average daily SNS usage ($r_s = .23, p < .01$), indicating that the longer someone has a profile on a Social Networking Site, the longer s/he uses said site daily.

In contrast to our expectations, gender and age showed no significant correlations with problematic SNS usage and depression. However, women ($M = 25.33, SD = 6.93$) compared to men ($M = 21.23, SD = 6.71$) reported higher levels of Neuroticism, $t(141) = -3.53, p < .001$. Furthermore, an interesting finding was that place of residence was positively correlated with problematic use of SNS as well ($r_s = .26, p < .01$), with participants living in rural areas (with up to 1,500 residents) exhibiting higher scores in GPIUS ($M=71.04, SD=17.8$) than the other categories of residence.

Regarding problematic SNS usage and personality characteristics, our expectations were partially confirmed. As seen in Table 1, Problematic SNS usage was significantly correlated to depressive symptomatology ($r = .26, p < .01$), Neuroticism ($r = .42, p < .01$) and Agreeableness ($r = -.28, p < .01$). The results failed to show any significant correlations of Extraversion, Conscientiousness and Openness to Experience with problematic SNS usage. However, there are statistically significant relationships of depression with Extraversion ($r = -.27, p < .01$) and Neuroticism ($r = .49, p < .01$). Furthermore, the higher the average of daily SNS usage, the higher the scores in problematic use of SNS ($r_s = .42, p < .01$) and Neuroticism ($r_s = .28, p < .01$) and the lower in Agreeableness ($r_s = -.17, p < .05$).

Table 1. Correlations among problematic use of Social Networking Sites, depression, personality subscales (Pearson r) and average daily SNS usage (Spearman ρ).

	1	2	3	4	5	6	7
Personality Characteristics							
1. Neuroticism	-						
2. Extraversion	-.26**	-					
3. Openness to Experience	-.02	.10	-				
4. Agreeableness	-.26**	.20*	.14	-			
5. Conscientiousness	-.10	.36**	-.01	.23**	-		
6. Depression	.49**	-.27**	.10	-.16	-.14	-	
7. Problematic Use of SNSs	.42**	.05	-.00	-.28**	-.08	.26**	-
8. Average Daily Usage	.28**	.10	-.01	-.17*	.10	.13	.42**

Note: * $p < .05$, ** $p < .01$

In order to examine whether individuals with low, moderate and high daily SNS usage differ significantly as to personality dimensions, depressive symptomatology and problematic use, the sample was divided into three groups based on their average daily usage: individuals that spent less than 30 minutes daily ($N = 51$), individuals that spent 30 to 60 minutes daily ($N = 43$) and individuals that spent more than 60 minutes daily on SNS ($N = 49$). The cutoff scores were indicated by previous research studies (e.g. Harbaugh, 2010). Comparisons (Table 2) showed statistically significant mean differences as to problematic SNS usage [$F(2,140) = 16.00, p < .0001$] and Neuroticism [$F(2,140) = 9.00, p < .0001$]. Regarding problematic SNS usage, individuals with low daily use significantly differed from individuals with average [$t(92) = -3.75, p < .0001$] and high daily usage [$t(92) = -5.26, p < .0001$]. Similar differences were found as to Neuroticism.

Table 2. Comparison (One-Way ANOVA) of means and standard deviations regarding Daily SNS usage, Personality characteristics, Depressive symptomatology and Problematic use of Social Networking Sites.

	Daily Use of Facebook			<i>F</i>
	Less than 30	30-60	More than 60	
	minutes	minutes	minutes	
	(<i>N</i> = 51)	(<i>N</i> = 43)	(<i>N</i> = 49)	
	<i>M (SD)</i>	<i>M (SD)</i>	<i>M (SD)</i>	
Personality				
Neuroticism	20.4 (6.26)	25.7 (7.36)	25.1 (7.36)	9.00 (2)****
Extraversion	28.7 (5.44)	28.9 (5.79)	25.0 (5.58)	0.24 (2)
Openness to Experience	25.8 (6.30)	26.7 (7.21)	25.0 (6.53)	0.77 (2)
Agreeableness	28.4 (4.41)	27.6 (5.27)	26.2 (5.19)	2.39 (2)
Conscientiousness	30.6 (6.64)	31.1 (7.54)	31.8 (6.33)	0.39 (2)
Depressive				
Symptomatology	7.2 (7.6)	11.3 (10.24)	10.1 (10.20)	2.48 (2)
Problematic Use of Social				
Networking Sites	49.6 (15.7)	64.9 (17.2)	66.7 (16.83)	16.00 (2)****

Note: $p < .05$, ** $p < .01$, **** $p < .0001$

To identify the predictor variables, which most strongly influence problematic SNS usage, a multiple regression analysis was conducted, utilizing all five personality variables (Neuroticism, Extraversion, Openness, Agreeableness and Conscientiousness), depressive symptomatology, length of membership, number of online "Friends", daily average SNS usage and place of residence as independent ones and problematic SNS usage as the dependent. Regression analysis yielded an overall multiple correlation of .58, accounting for about 33% of the variance in predicting problematic SNS usage [$R^2 = .33$; $F(2,140) = 8.26$, $p < .0001$] as seen in Table 3, which is highly significant. According to these results, it is mostly the average daily usage ($B = 3.78$, $p < .0001$) and place of residence ($B = 3.58$, $p < .01$) and to a lesser extent the personality variables of Neuroticism ($B = .66$, $p < .01$) and Agreeableness ($B = -.62$, $p < .05$), which are more important in predicting problematic SNS usage. Even though depression correlates with both Neuroticism and problematic SNS usage, it does not seem to play an important role in predicting the latter.

Table 3. Regression analysis to predict Problematic Use of Social Networking Sites.

Independent Variables	B	SE	Beta	t
Personality				
Neuroticism	0.66	0.23	.26	2.92**
Extraversion	0.18	0.27	.05	0.66
Openness to Experience	0.18	0.21	.07	0.87
Agreeableness	-0.62	0.29	-.17	-2.16*
Conscientiousness	-0.13	0.21	-.05	-0.60
Depressive Symptomatology	0.12	0.16	.06	0.74
Length of membership	-0.14	0.93	-.01	-0.16
Average Daily SNS Usage	3.85	1.10	.28	3.52****
Number of online "Friends"	-0.14	1.15	-.01	-0.12
Place of Residence	3.58	1.21	.22	2.97**
<i>R</i>	.58			
<i>R</i> ²	.33			
Standard Error	15.46			
<i>F</i> (10,132)	6.52****			

Note: $p < .05$, ** $p < .01$, **** $p < .0001$

Discussion

Our hypothesis was confirmed, indicating that the higher the problematic SNS usage, the higher the depressive symptomatology. This finding is also in accordance with the existing literature (i.e. Caplan, 2002; Morgan & Cotton, 2003) however, it was not found to play an important role in predicting problematic SNS usage. With regards to personality traits, participants higher in Neuroticism spent significantly more time in Social Networking Sites, had higher levels in problematic SNS usage and exhibited more depressive symptoms. On the other hand, individuals high on the trait of Agreeableness were found to have lower problematic SNS usage. In the same sense, the comparison between individuals with lower, average and higher daily SNS usage scores indicated that Neuroticism is an important discriminating factor. High levels in Neuroticism indicate people that are more likely to experience anxiety, depressive mood and have more trouble controlling urges whereas, low scores in Agreeableness indicate people that act suspiciously, are unhelpful to others, manipulative and generally unfriendly (Costa & McRae, 1992). Consequently, a poor social life could lead to misuse of Internet (Caplan, 2003) and Social Networking Sites as a means for compensating for a low competence in interpersonal domain.

Furthermore, in order to identify the predictor variables which most strongly influence problematic SNS usage, multiple regression analysis showed that, collectively, all five personality variables (Neuroticism, Extraversion, Openness, Agreeableness and Conscientiousness), depressive symptomatology, length of membership, number of online "Friends", daily average SNS usage and place of residence account for 33% of the variance. The best predictor of problematic SNS usage, as expected, was the *daily average SNS usage*, which is significantly related to both Neuroticism and Agreeableness. This finding is probably due to the fact that both these variables are intrinsically related (Hardie & Tee, 2007). From the five personality variables, only Neuroticism and to a lesser extent Agreeableness was found to be significant predictors. Another significant finding concerns the importance of *place of residence* in predicting problematic SNS usage.

The factor of residence constitutes an interesting issue that has not been yet investigated sufficiently in international literature (Gilbert, Karahalios, & Sandvig, 2010). Participants living in rural areas (up to 1.500 residents) exhibited higher scores in problematic SNS usage and in the scale of Neuroticism. These different patterns of SNS usage could indicate that social media are used as a means in order to compensate and add to everyday life in a 'fishbowl', as graphically described by Roberts et al. (1999), a possibly restricted, certainly in quantity if not quality, social environment. That is the case of small villages in Greece, as one would have to admit that they do not usually offer young people the variety in opportunities for socializing, recreation and entertainment that larger cities do. Additionally, sociocultural factors specific in rural areas such as poorer financial

status and social isolation due to geographical limitations (Edelbrock, Buys, Ceasey, & Broe, 2001) may lead to closely intertwined communities with specific expectations, 'monitoring' and social pressure on their members. Consequently, they could influence the expression of personality characteristics and result in seemingly higher levels of Neuroticism. Nevertheless, these tentative explanations remain to be verified in future research studies.

However, it is worthwhile to mention the relatively few significant findings in relation to the other three remaining personality variables. Individuals low in the trait of Extraversion and Conscientiousness, as well as people with higher levels of Openness to Experience, were expected to exhibit higher levels in problematic SNS usage, but that was not confirmed in this study. Previous research has shown that introverted individuals that face difficulties in socializing, and frequent Internet users that score low in Conscientiousness are more likely to show addictive tendencies (Wilson, Fornasier, & White, 2010). Similarly, people with higher levels of Openness to Experience are characterised by curiosity and novelty-seeking, thus more likely to use Social Networking Sites (Ross et al., 2008) and consequently more susceptible to problematic use due to the Sites' novelty as an alternate means for socialising. Our results, however, support the conclusions of Hamburger and Ben-Artzi (2000) that personality variables can only partially predict the way Internet is used.

Concerning gender, problematic SNS usage and depression no significant findings were unearthed, even though women exhibited significantly higher scores in the trait of Neuroticism than men. Recent evidence indicates that the gender gap in Internet usage is rapidly diminishing (Weiser, 2000) and that could explain the lack of difference in problematic SNS usage in this sample. In contrast to previous findings, another factor unrelated to the research variables, was age. Even though young adults have been shown to be at high risk for behavioural addictions (Grant et al., 2010), that was not confirmed in the present study. The number of participants and the small age range are possibly responsible for these results. A comparison between young adults, adolescents and older adults could yield different findings.

The conclusions of the present study are limited by the correlational nature of the results that do not allow "cause and effect" conclusions. It cannot be claimed that specific personality characteristics and high levels of depressive symptomatology constitute antecedents of problematic SNS usage. Alternative interpretations are also possible; for example, depressive symptomatology may be secondary to problematic SNS usage. Direct support of "cause and effect" relationships on the aforementioned factors, as well as, whether problematic SNS usage is due to adoption of the social media technology or an effect of prolonged use, are issues that can only be answered through longitudinal studies.

Another limitation of the study is the use of self-report measures, where the possibility of "the social desirability effect" cannot be excluded. Furthermore, another limitation is that the convenience sample used in this study is relatively small and not representative of the general population of young adults in Greece. Having a larger pool of participant backgrounds by collecting data from more diverse settings, could improve the generalizability of our conclusions. Consequently, the results should be interpreted with caution, even though Greece is a small country where we do not usually expect significant differences regarding population composition within cities or within villages in different administrative regions (EL.STAT., 2011).

However, regardless of the above limitations, the value of this preliminary study that is part of a larger project still in progress is not greatly diminished. The results regarding the existence of problematic SNS usage in young adults living in small villages and rural areas, if reconfirmed by future studies, could have important implications in developing online counselling services. Online counselling could be important in providing therapeutic interventions as well as social support concerning depression and other mental health issues (Richards & Vignano, 2013). Seeking social support online is not a novelty; however, little research is being focused on whether Social Networking Sites can be a means of providing social support (e.g. Ellison, Steinfield, & Lampe, 2011; Kim & Lee, 2011). Whether assistance and support could be obtained by anonymous audiences such as bloggers (Baker, 2011), or friends and acquaintances on Facebook and other Social Networking Sites should be the focus of future research studies.

Counselors and psychologists should be aware of the potential problematic relationship or dependency that young adults could develop and how this may interfere with personal, social and academic functioning, as well as the impact to their depressive symptomatology and mental health in general. Although the study on the psychosocial effects of Social Networking Site use in Greece is still in infancy, the fact that young people are exposed to internet communication from an early age and grow up using these sites, makes it imperative for researchers to understand the effect they have on their psychosocial well-being.

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