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Alexithymia, Impulsivity, Disordered Social Media Use, Mood and Alcohol Use in Relation to  
Facebook Self-Disclosure

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### Abstract

The tendency to disclose personal information on Facebook has been examined in relation to the broad Big Five personality factors (extraversion, openness, neuroticism, conscientiousness, agreeableness), but the potential roles of more specific traits such as alexithymia and impulsivity are not known. The present study assessed the ability of these two traits, along with indices of disordered social media use, alcohol use, negative mood, and demographic factors, to predict Facebook self-disclosure in a hierarchical regression model. The study recruited 157 Facebook-using adults aged between 18 and 30 years ( $M = 24.31$  years), of whom 81 (51.6%) identified as female, from across Australia via the online survey tool *Qualtrics*. Expected significant positive correlations of Facebook self-disclosure with alexithymia, impulsivity, disordered social media use, negative mood and alcohol use were obtained. In the final regression model, alexithymia and anxiety were the strongest predictors, followed by alcohol and education; disordered social media use, impulsivity, depression, stress, age, and gender were not significant. Subsequent analysis revealed that of the three facets of alexithymia, only difficulty identifying feelings explained variance in Facebook self-disclosure. Findings are interpreted in terms of the social compensation hypothesis and recent neuroimaging evidence of blunted brain response to social rejection in alexithymia.

Keywords: Facebook, self-disclosure, personality, social media disorder, alcohol

## Alexithymia, Impulsivity, Mood and Alcohol Use in Relation to Facebook Self-Disclosure

### 1. Introduction

Self-disclosure refers to the act of communicating personal information such as thoughts, opinions, beliefs, feelings, etc. to others (Kaplan & Haenlein, 2010; Masaviru, 2016). Today, the widespread availability of social media encourages self-disclosing to a broad audience. Facebook remains the most frequently used online social networking platform, boasting some 2 billion users worldwide (Spredfast, 2018). Facebook's platform allows frequent posting, comment sharing, and conversation, all of which promote self-disclosure (Mazer, Murphy, & Simonds, 2007). The present study was conducted in Australia, which currently has some of the highest levels of social media use in the world, with approximately 60% of the population active on Facebook and 50% of the country logging onto Facebook at least once a day (Cowling, 2018).

Research to date has indicated both positive and negative impacts of Facebook self-disclosure (Hu, Kim, Siwek, & Wilder, 2017). For example, some studies have reported apparent benefits of Facebook self-disclosure including social support (Ellison et al., 2007), improved teacher-student relationships (Mazer et al., 2007), and civic and political engagement (Valenzuela, Park & McKee, 2009). A study by Grieve, Indian, Witteveen, Tolan and Marrington (2013) found that higher levels of social connectedness on Facebook were associated with lower levels of depression and anxiety, as well as greater life satisfaction; interestingly, the degree of Facebook social connectedness was independent of offline social connectedness. Zhang (2017) similarly found that Facebook use offers the psychological benefits of social support among stressed or depressed university students.

Other studies have however suggested that Facebook use can also be associated with negative outcomes including envy (Tandoc, Ferruci, & Duffy, 2015), increased loneliness (Song et al., 2014), and decreased well-being (Tromholt, 2016). In some contexts, disclosing sensitive personal information on Facebook may threaten job security, and can expose an

individual to hacking, fraud, extortion, or stalking (Parsons, Calic, & Barca, 2016). Adverse effects of Facebook self-disclosure on romantic relationships have also been reported (Lee, Gillath, & Miller, 2019). Online self-disclosure can reduce social attraction, particularly when the disclosed information is perceived as inappropriate (Lin & Utz, 2017). Similarly, social psychological research has indicated that too much self-disclosure can decrease liking by others, especially when self-disclosure exposes dissimilarity (Norton, Frost, & Ariely, 2007). Friendships can thus be disrupted, or even lost entirely, following disclosure of personal beliefs that some find disagreeable, such as political opinions (e.g., Abbady, 2014). Given such potentially harmful effects of Facebook self-disclosure, research is warranted on factors that may promote this risky behavior.

One factor that is often cited to explain heavy use of social media, as well as online self-disclosure, concerns the level of comfort a person typically feels in face-to-face social interactions. Consistent with the social compensation hypothesis originally proposed by Davis and Kraus (1989), those who feel uncomfortable in such situations tend to disclose more online to compensate for their unmet social needs (Amichai-Hamburger, Wainapel, & Fox, 2002; Desjarlais & Willoughby, 2010; Forest & Wood, 2012; Mahapatra & Sharma, 2018; McCord, Rodebaugh, & Levinson, 2014). Online communication methods can facilitate self-disclosure for those with social anxiety (Erwin, Turk, Heimberg, Fresco, & Hantula, 2004; Weidman et al., 2012), loneliness (Morahan-Martin & Schumacher, 2003), or low self-esteem (Zywica & Danowski, 2008). For example, the latter authors found that individuals with low self-esteem disclosed more online, such that their online friends knew more about them than their offline friends did. Loneliness and social anxiety are particularly common among people with high levels of alexithymia (Cox, Swinson, Shuman & Bourdeau, 1995; Qualter, Quinton, Wagner & Brown 2009), a personality trait encompassing a cluster of characteristics related to deficits in the cognitive processing and regulation of emotions (Luminet et al., 2002). Sifneos (1973) introduced the term, the literal meaning of which is

“without words for emotions.” Core features of alexithymia include difficulty identifying and describing emotions; difficulty distinguishing between emotional feelings and bodily sensations of arousal; constricted capacity to fantasize; and an externally oriented cognitive style (Nemiah, Freyberger & Sifneos, 1976; Taylor, Ryan, & Bagby, 1985). Alexithymia affects approximately 10% of the general population and may be slightly more common in men than in women, although the findings on this are not always consistent (Honkalampi, Hintikka, Laukkanen, Lehtonen, & Viinamäki, 2001; Levant, Hall, Williams & Hasan, 2009).

Alexithymia appears to be a significant risk factor for compulsive behaviors including substance use disorders (Taylor, Bagby, & Parker, 1997; Thorberg, Young, Sullivan, & Lyvers, 2009), eating disorders (Harrison, Sullivan, Tchanturia, & Treasure, 2009) and internet addiction (Lyvers, Karantonis, Edwards & Thorberg, 2016; Mahapatra & Sharma, 2018). Such compulsive behaviors in those with alexithymia have been interpreted as maladaptive efforts to regulate emotions (Thorberg et al., 2011). Alexithymia is also associated with impaired social and interpersonal functioning (Zarei & Besharat, 2010), social rejection (Chester, Pond & DeWall, 2015), introversion and neuroticism (Wise, Mann, & Shay, 1992), social interaction anxiety (Lyvers, Hanigan, & Thorberg, 2018), fear of intimacy (Lyvers, Davis, Edwards & Thorberg, 2017) and an anxious-avoidant (i.e., insecure) attachment style in relationships (Vanheule, Desmet, Meganck, & Bogaerts, 2007; Wearden, Cook, & Vaughan-Jones, 2003). For individuals with alexithymia, the ease and perceived low-risk context of Facebook use (Joinson, 2008) may thus present as a “safe” way to develop relationships, gain social validation and express oneself through self-disclosure, in line with the social compensation hypothesis.

The broad Big Five personality factors (Costa & McCrae, 1982) – i.e., extraversion (proclivity for social engagement), neuroticism (proneness to negative moods), openness (tendency to seek out novel experiences), conscientiousness (self-discipline in goal directed behavior), and agreeableness (tendency to get along with others) – have recently been

examined in relation to Facebook self-disclosure, with the evidence suggesting that extraversion, openness and neuroticism may have differential influences on this behavior (e.g., Hollenbaugh, & Ferris, 2014; Seidman, 2013). However, alexithymia is a distinct personality trait that is not fully encompassed by the Big Five (Wise, Mann & Shay, 1992), and thus merits investigation in this context – particularly given its association with compulsive behaviors and other forms of psychopathology such as social anxiety. The present study assessed Facebook self-disclosure in relation to validated indices of alexithymia as well as another personality trait, impulsivity, which tends to be highly correlated with alexithymia (e.g., Lyvers, Jamieson, & Thorberg, 2013) and is similarly linked to both problematic substance use and internet addiction (Garofalo & Velotti, 2015; Littlefield & Sher, 2010; Ryu et al., 2018). An index of disordered (compulsive) use of social media was also administered in the present study to control for the possibility that high levels of Facebook self-disclosure could simply reflect more frequent use of social media rather than Facebook self-disclosure specifically. Further, given the potential disinhibiting effects of alcohol on self-disclosure (“*in vino veritas*”), alcohol use was assessed as well. As demographic factors such as age and gender have been linked to differences in Facebook self-disclosure (Special & Li-Barber, 2012), demographic variables were covariates in the present study. Negative moods were also examined as covariates, and were expected to be associated with higher levels of Facebook self-disclosure after controlling for demographic factors, consistent with previous work (Moreno et al., 2011).

Based on previous research and theory cited earlier, the personality (alexithymia, impulsivity) and compulsive behavior variables (alcohol-related risk, disordered social media use) were all expected to independently account for additional variance in Facebook self-disclosure after controlling for demographic and mood variables in a hierarchical regression model. Alexithymia was expected to be a positive predictor of Facebook self-disclosure based on the social compensation hypothesis, such that an unmet social need for self-

disclosure is compensated for online. Impulsivity and alcohol use were also anticipated to be positive predictors of Facebook self-disclosure based on the behavioral disinhibition associated with both trait impulsiveness and acute alcohol intoxication (Littlefield & Sher, 2010; Lyvers, 2000).

## 2. Method

### 2.1 Participants

After removal of one multivariate outlier identified by Mahalanobis distance ( $p < .001$ ), the final sample consisted of 157 Australian young adults aged between 18 and 30 years ( $M = 24.31$  years,  $SD = 3.93$ ), of whom 81 (51.6%) identified as female. Participants were recruited and incentivised through an online survey tool, *Qualtrics*. The gender quota was set to approximate a 1:1 ratio; additionally, residing-state quotas were set to recruit numbers of participants in proportion to the populations of the states in which they lived. Inclusion criteria required participants to be regular users of Facebook (i.e., use Facebook at least 5 days per week) aged between 18 to 30 years, with high proficiency in English. Exclusion criteria were poor English proficiency, prior traumatic head injury, current use of illicit drugs more than once per month, or current use of psychiatric medication.

Most participants were born in Australia (118; 74.7%). Regional location of participants included New South Wales (51; 32.3%), Victoria (40; 25.3%), Queensland (32; 20.3%), South Australia (11; 7.0%), Western Australia (17; 10.8%), and Tasmania, Australian Capital Territory or Northern Territory (7; 4.4%). Most participants reported English as a first language (136; 86.1%). For ethnic background, the majority of participants selected European (69; 43.7%), followed by Asian (35; 22.2%), Middle Eastern (10; 6.3%), Aboriginal or Torres Strait Islander (5; 3.2%), Pacific Islander (2; 1.3%), African (4; 2.5%), and Mixed or Other (33; 20.9%). On education the sample included those who did not complete Grade 12 (13; 8.2%), and those who had completed either Grade 12 (53; 33.5%), an Undergraduate or TAFE degree (66; 41.8%), or a Postgraduate degree (26; 16.5%). Most participants were employed Full-Time (60; 38.0%) or Part-Time/Casual

(42; 26.6%), followed by Unemployed (28; 17.7%) and Self-Employed (7; 4.4%); the remainder indicated they were current students (21; 13.3%). Most participants (124; 78.5%) indicated that they consumed alcoholic drinks at least occasionally.

## 2.2 Materials

**Demographics Questionnaire.** This questionnaire asked for details on participants' age, gender, state of residence, ethnic background, country of birth, highest level of education completed, employment status, and English proficiency. Additionally, participants were asked to provide information regarding use of alcohol and other drugs, current medications and prior traumatic brain injury.

**2.2.1 Alcohol Use Disorders Identification Test (AUDIT; Babor, de la Fuente, Saunders, & Grant, 1992).** The AUDIT is a 10-item self-report screening tool used to assess alcohol consumption and drinking behaviors. It has three subscales – alcohol consumption, alcohol dependence and alcohol-related problems. Items 1 to 8 are scored on a five-point Likert scale ranging from 0 to 4; e.g., “How often do you have a drink containing alcohol?” has response options from 0 (*never*) to 4 (*4 or more times a week*). Items 9 and 10 are scored on a three-point Likert scale, where response options are 0 (no), 2 (*yes, but not in the last year*) and 4 (*yes, during the last year*). Responses are summed to form a total score, where higher scores indicate higher alcohol-related risk. A total score of 0-7 indicates low-risk drinking, 8-15 indicates risky or hazardous drinking, and scores of 16 or higher indicate harmful drinking. In the present sample the AUDIT showed high internal consistency,  $\alpha = .89$ .

**2.2.2 Depression Anxiety Stress Scales 21 (DASS-21; Lovibond & Lovibond, 1995).** The DASS-21 is a 21-item version of the 42-item Depression Anxiety Stress Scales (DASS-42; Lovibond & Lovibond, 1995). The DASS-21 consists of three scales, Depression (e.g., “I felt that I had nothing to look forward to”), Anxiety (e.g., “I was aware of dryness of my mouth”) and Stress (e.g., “I found it hard to wind down”). Participants rate their symptom severity over the past week on a four-point Likert scale ranging from 0 (*Did not apply to me at all*) to 3 (*Applied to me very*

*much, or most of the time*). Higher scores indicate higher levels of depression, anxiety or stress. Factor analysis has consistently supported the three-factor structure in non-clinical, clinical and combined samples (Antony, Bieling, Cox, Enns, & Swinson, 1998; Henry & Crawford, 2005). In the present sample the DASS-21 showed high internal consistency:  $\alpha = .89$  for Stress,  $\alpha = .90$  for Anxiety, and  $\alpha = .92$  for Depression.

**2.2.3 Barratt Impulsiveness Scale 11 (BIS-11; Patton, Stanford & Barratt, 1995).** The BIS-11 is a 30-item self-report inventory designed to assess trait impulsivity. It has three subscales: non-planning impulsivity, or present orientation and lack of future consideration (e.g., “I am happy-go-lucky”); motor impulsivity, or acting on the spur of the moment (e.g., “I do things without thinking”); and attentional impulsivity, which reflects impulsivity when focusing on tasks (e.g., “I solve problems by trial-and-error”). Items are scored on a four-point Likert scale ranging from 1 (*Rarely/Never*) to 4 (*Almost always/Always*), with 11 reverse-scored items (e.g., “I am self-controlled”). Higher scores indicate higher impulsivity, with a total score ranging from 30 to 150. BIS-11 scores are reportedly predictive of cocaine use (Lejuez et al., 2007) and can discriminate between high and low frequency of other compulsive behaviors such as cigarette smoking and emotional binge-eating (Fossati, Di Ceglie, Acquarini & Barratt, 2001). In the present sample the BIS-11 showed good internal consistency,  $\alpha = .85$ .

**2.2.4 Toronto Alexithymia Scale 20 (TAS-20; Bagby, Parker & Taylor, 1994).** The TAS-20 is a 20-item self-report questionnaire assessing levels of alexithymia. There are three subscales: difficulty describing feelings (DDF; e.g., “I find it hard to describe how I feel about people”), difficulty identifying feelings (DIF; e.g., “I am often confused about what emotion I am feeling”), and externally oriented thinking (EOT; e.g., “I prefer talking to people about their daily activities rather than their feelings”). Items are scored on a five-point Likert scale from 1 (*strongly disagree*) to 5 (*strongly agree*), with five reverse-scored items (e.g., “I am able to describe my feelings easily”). Responses are summed for a total score, such that scores below 52 indicate low or no alexithymia, scores of 52-60 indicate borderline high alexithymia, and scores 61 or higher

indicate high alexithymia (Bagby, Taylor & Parker, 1994). The three-factor structure of the scale has been consistently replicated (Parker, Taylor & Bagby, 2003). Concurrent validity has been supported such that the subscales showed correlations of  $r = .76$  to  $.87$  with the Toronto Structured Interview for Alexithymia (TSIA; Bagby, Taylor, Parker & Dickens, 2006). In the present sample the TAS-20 showed good internal consistency,  $\alpha = .86$ .

**2.2.5 Social Media Disorder Scale 9 (SMD-9; van den Eijnden, Lemmens & Valkenburg, 2016).** The SMD-9 is a nine-item self-report measure of compulsive or otherwise problematic social media use. The scale was developed based on the Diagnostic and Statistical Manual of Mental Disorders (5th ed., DSM-5; American Psychiatric Association, 2013) criteria of Internet Gaming Disorder. The scale prompts “During the past year, have you...” and lists nine examples of problematic use of social media (e.g., use of Facebook, Instagram, Twitter, YouTube), such as “regularly had arguments with others because of your social media use” and “tried to spend less time on social media, but failed,” to which participants respond by circling either “yes” (scored as 1) or “no” (scored as 0). Responses are summed to yield a total score, such that higher scores indicate more disordered use of social media; a cut-off score of 5 or higher is considered to indicate social media disorder (Van den Eijnden et al., 2016). Convergent validity of the SMD-9 was supported by significant positive correlations with the Compulsive Internet Use Scale (CIUS; Meerkerk, van den Eijnden, Vermulst & Garretsen, 2009) and self-declared SMD (van den Eijnden et al., 2016). In the present sample the SMD-9 showed acceptable internal consistency,  $\alpha = .81$ .

**2.2.6 Facebook Self-Disclosure Index (FSDI).** The FSDI is an 11-item measure of Facebook self-disclosure adapted from the 10-item Self Disclosure Index (SDI; Miller, Berg & Archer, 1983). The original SDI measures willingness to self-disclose for a range of topic areas. In the FSDI, the prompt “I have posted, publicly shared or commented about the following subjects on Facebook...” is followed by 11 items (e.g., “my deepest feelings”). An additional item (“my political views even if they are currently unpopular”) was added to the 10 SDI items given the problems often reported by people who disclose their political opinions on Facebook (e.g., Abbady,

2014). The FSDI is scored on a five-point Likert scale from 1 (*strongly disagree*) to 5 (*strongly agree*). Higher scores indicate a greater degree of self-disclosure on Facebook. In the present sample the FSDI showed high internal consistency,  $\alpha = .90$ .

### **2.3 Procedure**

Approval was granted by the university ethics committee prior to data collection. As described earlier, participants were recruited via the online survey hosting tool *Qualtrics*, which offered a points-based incentive. They were sent a link to the online questionnaire battery and asked to complete it in their own time. When participants opened the link, they were first presented with an explanatory statement informing them of the general purpose of the study, the requirements of participants, and contact details of the researchers for any inquiries. Participants were informed that they could withdraw at any stage without penalty, and that their responses would be confidential and unidentifiable. Informed consent was obtained from participants when they indicated that they understood the explanatory statement and consented to the use of their anonymous data.

After informed consent was obtained, screening questions on Facebook use, English proficiency, illicit drug use, current medications and prior brain injury were presented. If participants responded in a way that did not meet inclusion criteria, they were informed that they did not meet the study requirements and exited. Those who did meet inclusion criteria were presented with the measures described earlier, starting with the demographics questionnaire followed by the BIS-11, TAS-20, FSDI, SMD-9, AUDIT and DASS-21 in an order that was uniquely randomised per participant. Participants had to answer each item on a page before they could proceed to the next page. Upon completing the questionnaire battery, participants were presented with a final screen thanking them for their time. A distress hotline number (Lifeline) was presented in case they experienced distress as a result of their participation. Estimated completion time was 20-30 minutes.

### **3. Results**

In contrast to an estimated prevalence of alexithymia in the general population of around

10% (Mattila et al., 2006), the current sample of frequent Facebook using young adults had a surprisingly high proportion (38%) who scored in the range indicating high alexithymia based on the recommended TAS-20 cut-off score of 61 (Bagby, Taylor et al., 1994). Proportionally more females (37; 46%) than males (22; 29%) in this sample met the TAS-20 criterion for high alexithymia, a significant association,  $\chi^2(1) = 4.68, p = .03$ . Means, standard deviations and intercorrelations of continuous variables are shown in Table 1. As can be seen in Table 1, the FSD-11 index of Facebook self-disclosure was significantly positively correlated with the SMD-9 index of disordered social media use, the TAS-20 index of alexithymia, the BIS-11 index of impulsivity, the AUDIT index of alcohol-related risk, and all three DASS-21 scales: Depression, Anxiety, and Stress. The SMD-9 index of disordered social media use showed similar significant positive correlations with the indices of alexithymia, impulsivity, risky drinking and negative mood.

Hierarchical regression was conducted on FSD-11 Facebook self-disclosure scores. At step 1, control variables age, gender and education explained a nonsignificant 4.2% of variance,  $F(3, 153) = 2.24, p = .15$ . At step 2, the negative mood indices of the DASS-21 were entered, explaining a significant additional 13.4% of variance,  $\Delta F(3, 150) = 8.14, p < .0001$ . Only the DASS Anxiety scale and education were significant at this step, as positive predictors. At step 3 the trait variables of TAS-20 alexithymia and BIS-11 impulsivity scores were entered, accounting for a significant further 10% of variance,  $\Delta F(2, 148) = 10.18, p < .0001$ . TAS-20, DASS Anxiety and education were significant, positive predictors at this step. In the final step, the indices of compulsive behaviors, i.e., disordered social media use (SMD-9) and risky drinking (AUDIT), were entered and accounted for a significant 8.5% of additional variance,  $\Delta F(2, 146) = 9.70, p < .0001$ . In the final model the strongest independent predictors of Facebook self-disclosure were TAS-20 alexithymia and DASS-21 Anxiety, followed by the AUDIT index of risky drinking, and education; all were positive predictors. Table 2 shows the regression statistics including standardized and unstandardized coefficients and confidence intervals.

Table 1

*Means, Standard Deviations and Intercorrelations of Study Variables (N = 157)*

Variable	<i>M (SD)</i>	1	2	3	4	5	6	7	8
1. FB Self Disclosure	30.67 (9.89)	-							
2. Depression	15.30 (11.44)	.24**	-						
3. Anxiety	14.37 (10.82)	.35**	.86**	-					
4. Stress	16.56 (10.93)	.23**	.88**	.88**	-				
5. Impulsiveness	67.43 (11.70)	.22**	.57**	.57**	.55**	-			
6. Alexithymia	57.09 (12.60)	.38**	.48**	.43**	.40**	.55**	-		
7. Alcohol Risk	7.97 (7.13)	.39**	.34**	.39**	.32**	.34**	.12	-	
8. Social Media Disorder	2.52 (2.48)	.33**	.22**	.31**	.25**	.31**	.32**	.35**	-

*Note.* \* $p < .05$ . \*\* $p < .01$ . FB = Facebook.

Table 2

*Hierarchical Multiple Regression on Facebook Self-Disclosure*

Predictor	$\Delta R^2$	$\beta$	<i>B</i>	<i>SE B</i>	95% CI for <i>B</i>
Step 1	.04				
Age		-.04	-.10	.21	[-.52, .33]
Gender		-.06	-1.25	1.56	[-4.34, 1.85]
Education		.20*	2.34	.98	[.40, 4.28]
Step 2 (added variables)	.13***				
Depression		-.06	-.05	.15	[-.35, .25]
Anxiety		.60**	.55	.16	[.24, .85]
Stress		-.23	-.20	.17	[-.54, .13]
Step 3 (added variables)	.10***				
Alexithymia		.39***	.30	.07	[.17, .44]
Impulsivity		-.05	-.04	.08	[-.20, .12]
Step 4 (all variables)	.09***				
Age		.07	.18	.19	[-.19, .55]
Gender		-.09	-1.31	1.42	[-4.10, 1.49]
Education		.15*	1.69	.84	[.03, 3.36]
Depression		-.22	-.19	.14	[-.47, .08]
Anxiety		.40*	.36	.14	[.08, .65]
Stress		-.10	-.09	.15	[-.39, .21]
Alexithymia		.40***	.31	.07	[.18, .45]
Impulsivity		-.14	-.12	.08	[-.27, .04]
Social Media Use		.11	.43	.31	[-.18, 1.04]
Alcohol Use		.28**	.39	.11	[.17, .61]

*Note.* SE B = standard error of unstandardized coefficient; CI = confidence interval.

\*  $p < .05$ . \*\*  $p < .01$ . \*\*\*  $p < .001$ .

To see which specific aspects of alexithymia predicted Facebook self-disclosure, an identical *post hoc* regression was conducted using the three TAS-20 subscale scores in place of the total score. This analysis revealed that the DIF subscale was a strong, highly significant positive predictor both at step 3 and in the final model,  $\beta = .53, p < .0001$ ; by contrast, the contributions of DDF,  $\beta = -.06, p = .56$ , and EOT,  $\beta = -.05, p = .53$ , did not approach significance at either step (values are from the final step of the regression model).

#### 4. Discussion

The results yielded partial support for the hypotheses. Although both personality traits, alexithymia and impulsivity, showed the expected significant positive correlations with Facebook self-disclosure, only alexithymia contributed unique variance as a positive predictor in the hierarchical regression; contrary to expectations, impulsivity was a nonsignificant and negative predictor in the final model. Of the negative mood variables depression, anxiety, and stress, only anxiety contributed unique variance as a positive predictor of self-disclosure on Facebook. Of the two indices of compulsive behaviors, alcohol-related risk was a moderate positive predictor, consistent with expectations, whereas disordered social media use did not account for significant unique variance. The latter outcome was unexpected, as more use of social media would seem likely to encompass more self-disclosure on social media, but this was evidently not the case for the present sample. The finding that alcohol use was a significant, independent positive predictor of Facebook self-disclosure presumably reflects alcohol-induced disinhibition (“*in vino veritas*”) while posting online, though further work is needed to support that interpretation as participants were not asked how often they used Facebook after consuming alcohol. Of the demographic covariates, only education level contributed significant variance as a weak positive predictor; neither age nor gender were significant at any step. Previous work has been inconsistent on gender differences in Facebook self-disclosure, with apparently contradictory findings (Hollenbaugh & Ferris, 2014; Special & Li-Barber, 2012).

Further examination of the apparent role of alexithymia revealed that of its three facets

encompassed by the TAS-20, only DIF accounted for significant variance in Facebook self-disclosure as a strong positive predictor; by contrast, the low, negative beta values for DDF and EOT did not approach significance. DIF is considered the most fundamental facet of alexithymia (Pollatos et al., 2008) and the one most consistently linked to problems with emotional self-regulation (Lyvers, Makin, Toms, Thorberg & Samios, 2014), including risky or problematic use of substances such as alcohol (Thorberg et al., 2010) or cannabis (Lyvers et al., 2013) as well as internet addiction (Dalbudak et al., 2013; Lyvers et al., 2016). Perhaps the strong association of DIF with Facebook self-disclosure reflects efforts to understand and regulate emotions through sharing with others online, a form of social compensation to address social needs that are not being met through face-to-face interactions (Amichai-Hamburger et al., 2002; Desjarlais & Willoughby, 2010; Forest & Wood, 2012; McCord et al., 2014; Zywica & Danowski, 2008).

On the other hand, recent evidence that alexithymia is associated with deficient interoceptive awareness (Brewer, Cook & Bird, 2016; van Strein & Ouwens, 2007) may point to a different explanation. Perhaps those who score high on DIF are simply less sensitive to internal cues of emotions such as shame, embarrassment, or feelings of rejection that might otherwise discourage high levels of online self-disclosure. Consistent with that idea, a functional neuroimaging study by Chester et al. (2015) found that higher DIF scores were associated with weaker responses in the anterior cingulate to social rejection during a simulated group game, and such blunted responding predicted a greater frequency of everyday social rejections as reported by participants over a seven day period. Based on previous evidence, the anterior cingulate was postulated to mediate the subjective emotional distress associated with social rejection, whereas other brain regions mediate the cognitive identification and verbal report of social rejection events. Chester et al.'s findings would thus appear to support an interpretation of the present results such that, compared to those with low or no alexithymia, those with high levels of alexithymia tend to be less distressed by the prospect of negative reactions of others online when sharing personal information, and thus tend to self-disclose more. Of course, the two interpretations are not mutually exclusive; that is, highly

alexithymic individuals may engage in more online self-disclosure both for social compensation reasons and because they are less likely to feel embarrassed or suffer from feelings of rejection when sharing personal information online, compared to those with low or no alexithymia.

**4.1. Limitations.** The present study employed a sample recruited exclusively online by a survey hosting company. Despite the near-balanced gender ratio and proportionate representation from different Australian states, such a sample cannot be presumed to fully represent the general population of Facebook-using young Australian adults. There was a considerably higher proportion of participants with high alexithymia in the current online sample compared to general population estimates from other countries (e.g., Honlakampi et al., 2010; Mattila et al., 2006), however this was consistent with previous research that recruited samples online (Lyvers et al., 2018) and with reports of disproportionately high levels of internet usage by alexithymic young adults (Dalbudak et al., 2013; Lyvers et al., 2016). Further, the present sample included more females than males with definite or high alexithymia, an unusual finding - although reports of gender differences in alexithymia favoring males have been inconsistent, as noted earlier.

A more fundamental limitation was that the cross-sectional design does not allow conclusions to be made regarding causation. For example, some third variable could conceivably account for the strong relationship between DIF and Facebook self-disclosure in the present sample. One such potential variable is social interaction anxiety, which is common in alexithymia (Lyvers et al., 2018) and positively associated with internet use including social media (Erwin et al., 2004; Weidman et al., 2012). Future research should assess for possible mediation of the relationship between alexithymia or its DIF facet and Facebook self-disclosure by social interaction anxiety. Note however that in the present study the DASS-21 Anxiety scale, which assesses anxiety symptoms experienced over the past week, was an independent predictor in the regression model equal in strength to alexithymia; this result would seem to indicate that those who suffer more anxiety symptoms tend to self-disclose more on Facebook irrespective of their level of alexithymia.

On the other hand, the anxiety symptoms evaluated by the DASS-21 used in the present study were general symptoms and not specific to social situations.

**4.2. Implications.** The present findings would appear to have mixed implications regarding the loneliness and social rejection often reported by those with high levels of alexithymia. As reviewed earlier, self-disclosure on Facebook can have both positive and negative impacts on psychological health and interpersonal domains. To the extent that unmet social needs can be compensated for by Facebook self-disclosure, perhaps via provision of social support from Facebook friends, such behavior may be psychologically beneficial for those with alexithymia. On the other hand, if taken too far, online self-disclosure can render an individual vulnerable to being threatened, harassed, or taken advantage of by others, and may lead to exploitation, social rejection, or even job loss. The prospect of such negative outcomes means caution is warranted for Facebook users who frequently self-disclose online, especially those who are more dependent on the internet for fulfilling their social needs. Posting personal information on Facebook while intoxicated on alcohol may be especially risky due to the disinhibiting effects of the drug; impulsive, drunken self-disclosure may be regretted in the morning. In any case, further research is needed to elucidate the nature of the positive, independent relationships of alexithymia, anxiety, and alcohol use to self-disclosure on Facebook, and the potential risks and benefits thereof.

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