Social Anxiety, Loneliness, and Neuroticism in Unwanted Intrusive Thoughts

Jesse Omorogie

Abstract:
This study tested the hypotheses that social anxiety and loneliness will significantly escalate unwanted intrusive thoughts (UITs), and that neurotic personality would mediate how well social anxiety and loneliness predict the tendency to experience UITs. Participants were 104 non-clinical opportunity sample comprised of both male (53.8%) and female (46.2%) adults aged 22 to 68 years old (Mean= 40.71, SD= 11.67). Hierarchical multiple linear regression analysis was conducted, and results were in line with hypotheses: in model 1, all two predictors (social anxiety, and loneliness) were significant predictors of UITs. Neuroticism was included in model 2, and was found to mediate how well social anxiety, and loneliness predict the likelihood of experiencing UITs.

Introduction
Although numerous research findings have shown a consistent link between unwanted intrusive thoughts (UITs) and suicidality (Bentley, Franklin, Ribeiro, Kleiman, Fox & Nock, 2016), while it is generally agreed by researchers that intrusive thoughts foster suicidality (Tucker, Smith, Hollingsworth, Cole & Wingate, 2017), however, little is known about how social anxiety (SA) and loneliness impact on UITs. Thus, this study tested the hypotheses that SA and loneliness will significantly escalate UITs, and that neurotic personality would mediate how well SA and loneliness predict the tendency to experience UITs.

Unwanted Intrusive thoughts and Suicidal behaviours
UITs are common across a variety of disorders (Shiperd & Fordiani, 2015), and it has been defined as distinct and recognisable cognitive occurrence that are unintended, recurrent, and unwanted. They are common across a variety of disorders (Shiperd & Fordiani, 2015), and can disrupt thought flow, inhibit task performance, and be burdensome (Clark, 2005). Numerous studies have established a relationship between UITs and suicidal behaviours; for example, in a study that investigated the links between violent obsessions and suicidality in an obsessive-compulsive disorder (OCD) sample, Ching, Williams and Sier (2017) found that thought intrusions and violent obsessions had positive correlation with suicidal behaviours. Ching et al. (2017) further concluded that, violent obsessions and intrusive thoughts have specific role in suicidal behaviours. Similarly, Law and Tucker (2017) used a synthesis of existing literature on intrusive thoughts to investigate the role of “repetitive negative thinking” in suicidality. Law and Tucker (2017) further suggested that intrusive thoughts are linked with the perception of hopelessness and entrapment, and further facilitate suicidal behaviours. Besides, in another study that explored dysregulated behaviours and compulsions, Jungmann, Vollmer, Selby and Witthoft (2016) proposed that dysregulated behaviours such as suicidality often occur to put an end to extreme negative thoughts and extreme obsessions. Jungmann et al. (2016) concluded that, intrusive thoughts foster dysregulated behaviours such as suicidality.
Social Anxiety and Intrusive thoughts
Although not much is known about how SA contribute towards UITs, however, some studies have established a link between SA and rumination (Jones & Fernyhough, 2009; Kocovski & Rector, 2007; McManus, Muse, Surawy, Hackmann & Williams, 2015). Some studies have shown evidence of a strong correlation between intrusive imagery and PTSD (Steil & Ehlers, 2000), social phobia (Hackmann, Clark, & McManus, 2000), and OCD (Speckens, Hackmann, Ehlers & Cuthbert, 2007). Thus, this current study attempts to explore empirical evidence to examine the contribution of SA towards UITs.

Loneliness and Intrusive thoughts
Loneliness, according to Adams, Mosher, Abonour, Robertson, Champion & Kroenke (2016) is the absence of social connection. In other words, it is the perception of social isolation and dissatisfaction with the quality of relationships (Cacioppo, Hawkley, Ernst, Burleson, Berntson, Nouriani & Spiegel, 2006). Cacioppo and Hawkley (2009) highlighted that loneliness has links with a variety of poor physical and mental health outcomes. Although, loneliness has been linked with OCD severity (Timpano, Çek, Rubenstein, Murphy & Schmidt, 2014), however, not much is known about how loneliness contributes towards UITs, thus, this study intends to demonstrate the role of loneliness in escalating UITs

Neuroticism
Neuroticism is a dimension of the Five Factor model personality inventory (Goldberg, 1999) characterized by emotional distress (Larsen & Ketelaar, 1991), and instability (Houben, Van Den Noortgate & Kuppens, 2015). Higher neuroticism has been linked to poor psychological and physical wellbeing (Mroczek & Spiro, 2007), as well as inhibited cognitive abilities (Robinson & Tamir, 2005). However, there are gaps in knowledge regarding the mediating role of neuroticism in UITs.

The current study
This study examines a non-clinical sample of UITs by investigating social anxiety, and loneliness, while accounting for the mediating role of neuroticism. Thus, it was hypothesized that social anxiety and loneliness will significantly escalate UITs, and that neurotic personality would mediate how well social anxiety and loneliness predict the tendency to experience UITs.

Methodology
Quantitative research method was adopted in this study to avoid biases and deviation from main objectives, as well as to improve reliability (Cassell & Symon, 1994; Frankfort-Nachmias & Nachmias, 1992).

Design
A hierarchical multiple linear regression analysis was conducted to evaluate whether SA and loneliness predict or contribute towards UITs. Furthermore, in the second model, neuroticism was included as a control to test whether it has any mediating role in how well SA and Loneliness escalate IUTs.

Participants
Participants were 104 non-clinical opportunity sample comprised of both male (53.8%) and female (46.2%) adults aged 22 to 68 years old (Mean= 40.71, SD= 11.67), diverse ethnic and socio-economic backgrounds; although age, ethnicity, and socio-economic status were not of any interest in the current study.

Measures
Social Anxiety Questionnaire for Adults (SAQ-A30)
The SAQ-A30 (Caballo, Salazar, Irurtia, Arias & Hofmann, 2010), a 30-item and a 5-point Likert scale questionnaire was utilised to measure social anxiety. It was designed to measure generalized or specific social anxiety or phobia in clinical and non-clinical adult populations. Higher scores represent higher Social Anxiety. The SAQ measures five dimensions of social anxiety; including interactions with strangers, speaking in public/talking with people in authority, criticism and embarrassment, interactions with the opposite sex, and assertive expression of annoyance, disgust, or displeasure (Caballo et al., 2010).
**UCLA Loneliness Scale Version 3**
The UCLA Loneliness Scale Version 3 (Russell, 1996) is a 20-item scale designed to measure how individuals feel about their loneliness and social isolation. The measure is a derivative of both the original and revised version of the UCLA Loneliness Scale, and it is rated on a scale of 1 (Never) to 4 (Often).

**Neuroticism Scale**
The Neuroticism scale, a subscale of the Five Factor model personality inventory (Goldberg, 1999) is a twenty-item questionnaire with ten positive and ten negative statements concerning respondents’ personality. The tool encourages respondents to describe themselves in an honest manner. Each statement is rated on a five-point Likert Scale from 1= Very Inaccurate, to 5= Very Accurate. Higher scores represent emotional instability, while lower scores represent emotional stability.

**Unwanted Intrusive Thoughts**
The obsessional thoughts to harm self/others (OTAHSO), and obsessional impulses to harm self/others (OITHSO), which are sub-dimensions of the Padua Inventory- Washington State University Revision (PI-WSUR) (Burns, Keortge, Formea & Sternberger, 1996) were used to measure UIT. The OTAHSO and OITHSO consist of a total of 16 items rated on a 5-point scale from 1= not at all to 5= very much. Higher scores of the OTAHSO and OITHSO represent a higher intrusion level.

**Procedure**
Following all ethical procedures, participants were given the questionnaires; to explore and measure UITs, social anxiety, loneliness, and neuroticism. Questionnaires were not labelled nor titled in order not to give away the main objectives of the study, and avoid social desirability bias (Tourangeau, Rips, & Rasinski, 2000). They were instructed to complete the questionnaire honestly as there were no right or wrong answers.

**Results**
Preliminary analyses of normality, linearity, and homoscedasticity were conducted to establish whether result met the assumptions of parametric test. The test revealed that there was an outlier (participant numbers 3). The data were replaced and recoded with the general mean score. Data were retested for normality and results showed that the assumptions for parametric test were met (Kolmogorov-Smirnov test of normality was not significant, P> .05). In the first model, hierarchical multiple regression was performed to investigate the ability of SA, and loneliness to predict the likelihood of experiencing UITs. Neuroticism was included in the second model to control for neurotic personality. The correlation matrix of all variables was examined and presented in table 1.

**Correlation Matrix**

*Table 1: Correlation matrix showing correlation coefficients for combinations of V1-V4. (N=104)*

<table>
<thead>
<tr>
<th>Measure</th>
<th>V1</th>
<th>V2</th>
<th>V3</th>
</tr>
</thead>
<tbody>
<tr>
<td>V1. UITs</td>
<td>1</td>
<td>_</td>
<td>_</td>
</tr>
<tr>
<td>V2. Social Anxiety</td>
<td>.809**</td>
<td>1</td>
<td>_</td>
</tr>
<tr>
<td>V3. Loneliness</td>
<td>.931**</td>
<td>.904**</td>
<td>1</td>
</tr>
<tr>
<td>V4. Neuroticism</td>
<td>.931**</td>
<td>.923**</td>
<td>.956**</td>
</tr>
</tbody>
</table>

*Note: N= number of participants. **P< .001.*

The correlation table suggests that all three predictor variables were statistically positive, strong, and significant correlates of UITs; social anxiety r = +.809, P < .001 (two-tailed), loneliness r = +.931, P < .001 (two-tailed), neuroticism r = +.931, P < .001 (two-tailed). Additionally, as shown in table 1
(correlation matrix), correlations amongst the predictor variables were statistically positive, strong, and significant; social anxiety-loneliness $r = .904$, $P < .001$ (two-tailed), social anxiety-neuroticism $r = .923$, $P < .001$ (two-tailed), loneliness-neuroticism $r = .956$, $P < .001$ (two-tailed). In general, the results suggest that there were strong positive correlations between UITs, social anxiety, loneliness, and neuroticism. This indicates that inflated social anxiety, loneliness, and neuroticism would usually escalate UITs experience.

Table 2: 
A hierarchical multiple regression table showing predictors of UITs ($N= 104$) 

<table>
<thead>
<tr>
<th>Predictors</th>
<th>Model 1</th>
<th></th>
<th>Model 2</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>b</td>
<td>SE-b</td>
<td>Beta</td>
<td>P</td>
</tr>
<tr>
<td>Social Anxiety</td>
<td>-.104</td>
<td>.049</td>
<td>-.178</td>
<td>.035</td>
</tr>
<tr>
<td>Loneliness</td>
<td>-1.148</td>
<td>.088</td>
<td>-1.092</td>
<td>.000</td>
</tr>
<tr>
<td>Neuroticism</td>
<td>.726</td>
<td>.111</td>
<td>.785</td>
<td>.000</td>
</tr>
<tr>
<td>$R^2$</td>
<td></td>
<td></td>
<td>.872***</td>
<td></td>
</tr>
<tr>
<td>$F$ for change in $R^2$</td>
<td></td>
<td></td>
<td></td>
<td>.038</td>
</tr>
</tbody>
</table>

*Note. Statistical significance: *$p < .05$  **$p < .01$  ***$p < .001$*

To address the Hypotheses that SA and loneliness will significantly escalate UITs, and that neurotic personality would mediate how well SA and loneliness predict the tendency to experience UITs, a hierarchical multiple linear regression analysis was conducted to develop models to investigate the hypotheses. Basic regression coefficients are shown in Table 2. SA and neuroticism were entered in the first model of hierarchical multiple regression. The model was statistically significant $F (2, 101) = 344.24; p < .001$ and explained 87.2% of variance in UITs. All predicting factors made a significant unique contribution to the model (see Table 2). Subsequently, when neuroticism was included in model 2, the total variance explained by the model was 91% ($F (3, 100) = 339.00; p < .001$). The introduction of neuroticism explained additional 3.8% of variance in UITs. In the final adjusted model, all three predictor variables were statistically significant, with neuroticism recording a higher Beta value ($\beta = .758$, $p < .001$) than loneliness ($\beta = .584$, $p < .001$) and social anxiety ($\beta = -.418$, $p < .001$). The results were as hypothesized that, social anxiety and loneliness will significantly escalate UITs, and that when accounted for, neurotic personality would further mediate how well social anxiety and loneliness predict the tendency to experience UITs.

**Discussion**

Unintended, recurrent, and unwanted distinct and recognizable cognitive occurrences characterize UITs. Consequently, UITs disturb thought flow, inhibits task performance, and are hard to control (Clark, 2005; Shiperd & Fordiani, 2015). The current study examined non-clinical sample of UITs by investigating SA, and loneliness, while accounting for the mediating role of neuroticism. In general, the results of the current study suggest that SA, and loneliness are strong predictors of UITs. Additionally, that neuroticism has a mediating effect on the extent SA, and loneliness impact on UITs. This is to say that, (a) socially anxious individuals are more prone to experience UITs, and that UITs would be escalated when SA upsurges. This finding is in line with some studies that have established a link between SA and ruminations (Jones & Fernyhough, 2009; Kocovski & Rector, 2007; McManus, Muse, Surawy, Hackmann & Williams, 2015). In addition, it shows support for Hackmann et al. (2000) findings that revealed evidence of strong correlation between intrusive imagery and social phobia. (b) Findings of the current study revealed that, individuals who are lonely or perceive themselves to be lonely are more prone to experience UITs, thus, a deteriorated state of loneliness would likely escalate UITs. This supports Cacioppo and Hawkley (2009) findings that loneliness has links with a variety of poor physical and mental health outcomes. (c) Current results also indicate that, individuals with neurotic personality have a higher probability of experiencing UITs, hence, UITs deteriorates when an individual becomes more emotionally unstable or more neurotic. Additionally, the neurotic personality dimension tends to mediate how well individuals with SA, and loneliness experience UITs. This relates to the idea that neuroticism deteriorates psychological and physical wellbeing (Mroczek & Spiro, 2007), and inhibits cognitive abilities (Robinson & Tamir, 2005). Thus, the findings support the hypotheses.
that SA and loneliness will significantly escalate UITs, and that neurotic personality would mediate how well social anxiety and loneliness predict the tendency to experience UITs.

**Limitations/future research**

One limitation of this study is the high reliance on survey materials as measuring tools. It has been argued that quantitative research cannot capture in-depth information, hence, both qualitative and quantitative methodologies may be utilized (Vanderveen, 2006; Noakes & Wincup, 2004), as opposed to quantitative measure adopted by the current study. In addition, Noakes and Wincup (2004) argued that, quantitative method may not capture recurring themes. As recommended by Vanderveen (2006), it is important that future research investigating UITs should consider the utility of mixed methodology.

**Implication**

The result of this study revealed that individuals who have SA are usually lonely emotionally unstable, and are more prone to experience UITs. Having bridged the gap in knowledge of UITs, and how neuroticism mediate the predictive powers of SA and loneliness in UITs, future research may investigate mechanisms to reduce SA and loneliness to stabilize emotionality and help professionals assist individuals who are experiencing UITs to reduce UITs and promote wellbeing.

**Conclusion**

The current study was aimed at addressing a major deficit in knowledge regarding UITs by investigating SA, and loneliness, while accounting for the mediating role of neuroticism. Thus, it was hypothesized that SA and loneliness will significantly escalate UITs, and that neurotic personality would mediate how well SA and loneliness predict the tendency to experience UITs. As expected, a hierarchical multiple linear regression analysis results revealed that SA and loneliness are likely to escalate UITs, and that neurotic personality would further mediate how well SA and loneliness predict the tendency to experience UITs.

**References:**


