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Looby, Mary Kate. "The Triadic Relationship of Loneliness, Belongingness, and Emotional Intelligence." BA Honours (Psychology), Tyndale University College & Seminary, 2019.

The Triadic Relationship of Loneliness, Belongingness, and Emotional Intelligence

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Abstract

Research has demonstrated that a relationship exists between loneliness, belongingness, and emotional intelligence. However, as of yet, there has not been a study that focuses on the potential reciprocal relationship between these three variables over time. I predicted that high levels of loneliness would lead to decreased levels of emotional intelligence and belongingness over time, that high levels of emotional intelligence would lead to decreased loneliness and increased belongingness over time, and that high levels of belongingness would lead to decreased loneliness and increased emotional intelligence over time. Of the 125 university undergraduate students who participated, 38 participated at both test times. At each test time, one in the fall and one in the winter semester, the participants completed loneliness, belongingness, emotional intelligence, and demographic inventories. Data analysis supported a strong correlation between loneliness, belongingness, and emotional intelligence, but the findings did not support the reciprocal relationship that I had predicted would exist between the three variables. More research should be carried out in order to examine the interaction between these variables while making use of a larger sample size.

Introduction

The dyadic relationships between loneliness, emotional intelligence, and belongingness have been researched widely (Mellor, Stokes, Firth, Hayashi, & Cummins, 2008; Baskin, Wampold, Quintana, & Enright, 2012; Wols, Scholte, & Qualter, 2015). However, little research has been conducted on the relationship between all three variables over time. More specifically, the reciprocal relationships between loneliness, belongingness, and emotional intelligence have yet to be examined to the author's knowledge. The research question addressed in this study is: How do the loneliness, belongingness, and emotional intelligence of university students interact over time? By studying this triadic relationship, I hoped to gain a fuller understanding of how belongingness and emotional intelligence act as protective factors against loneliness, and also, how belongingness and emotional intelligence can be impacted by loneliness.

Loneliness

Loneliness is a subjective experience and hard to define. For example, those who appear lonely to onlookers may simply enjoy solitude, while a person who is surrounded by peers may be desperately lonely: Aloneness does not equal loneliness (Tsai, Wang, & Wei, 2017). At its core, loneliness is a discontentment with one's relationships, no matter how many or few relationships one may possess (Wols et al., 2015). This dissatisfaction with relationships is often accompanied by feelings of emptiness, worthlessness, and isolation (Stoliker & Lafreniere, 2015). According to Stoliker and Lafreniere (2015) these negative feelings are often brought on by a significant change in one's life. This could be the loss of a significant relationship, or the transition to a new home, school, or job. These life changes disrupt one's social stability and so often lead to loneliness.

Loneliness is associated with a plethora of negative factors. It is closely related to social isolation, which is defined as having minimal interaction with family and friends and being involved in few or no social groups (religious, athletic, etc.), and social isolation is associated with negative consequences such as smoking, obesity, and high blood pressure (Cacioppo, Capitanio, & Cacioppo, 2014). Cacioppo et al. (2014) also found that in social animals, such as mice, extended periods of social isolation can result in alterations in brain structure and even losses in unused brain matter. In regard to students, who are the population of interest in this present study, loneliness has the potential of negatively impacting students' academic performance (Stoliker & Lafreniere, 2015). Stoliker and Lafreniere (2015) came to this conclusion by studying the relationship between loneliness and learning burnout in university students. They found that high levels of loneliness heighten perceived stress, which in turn lowers academic performance. Loneliness is also associated with low self-esteem, underdeveloped social skills, depression, and anxiety (Zysberg, 2012). Thus, loneliness is connected to a wide range of negative experiences, ranging from mild to serious mental and physical health problems. Given the serious negative impacts that can result from loneliness, it is important to consider what makes someone vulnerable to loneliness, and consequently at risk for its many negative consequences.

Factors such as social isolation, social support, and self-esteem can influence levels of loneliness. Shukla and Joshi (2017) studied 400 first semester university students from two different universities in India. They noted that this demographic is especially susceptible to loneliness because of their separation from their family (perhaps for the first time) as well as the coming-of-age struggle for significance that many people in this age range (16-19) experience. The participants in this study fall into a similar age category and similar life situation. Shukla

and Joshi (2017) administered loneliness, social support, and EI inventories and found a strong negative correlation between loneliness and social support. They also found a negative relationship between loneliness and emotional intelligence. Thus, it would appear that students who experience less social support are more susceptible to loneliness, and those who are more lonely tend to have lower EI.

Besides social support, another contributor to loneliness is low self-esteem (van Baarsen, 2002). Van Baarsen (2002) came to this conclusion after she conducted a longitudinal study that examined the effects of losing a partner among the aged population. Van Baaren (2002) interviewed the participants before their partners' death and in the following months after their partner's passing and found that low self-esteem made a person especially vulnerable to loneliness. Closely related to self-esteem is social self-efficacy, which is defined relationally as, "an individual's perceived ability to initiate and maintain interpersonal relationships" (Tsai, et al., 2017, p. 95). Low social self-efficacy has been found to put people at risk for loneliness. Tsai et al. (2017) conducted a longitudinal study of Chinese international students in the USA in order to study social self-efficacy. The researchers found that the students in their sample who possessed "low self-efficacy... experience[d] higher levels of loneliness" (Tsai et al. 2017, p. 99). However, they also found that a protective factor against loneliness was befriending an American student, as this helped with social adjustment in the new culture. Thus, a number of factors can put a person at risk for loneliness, some of them being peer relationships, low self-esteem, and low social self-efficacy.

Protection against Loneliness

Just as there are factors that can lead to loneliness, there are also protective factors that, although not necessarily preventative, do buffer loneliness. Some protective factors have to do

with attitude and outlook on life—for example, hope and optimism (Feldman, Davidson, Ben-Naim, Maza, & Margalit, 2016). Feldman et. al. (2016) studied students with and without learning disabilities who were transitioning into college and found that students who experienced higher levels of hope and optimism one month into their first semester also reported that they experienced less loneliness. Thus, having a positive and hopeful mindset is correlated with low levels of loneliness.

Several other social factors are also possible protective factors against loneliness. Bernardon, Babb, Hakim-Larson, and Gragg (2011) found that secure attachments and perceived social support both act as protection against loneliness in university students. Another protective factor is the possession of social development goals (Mouratidis & Sideridis, 2009). Mouratidis and Sideridis (2009) found that social development goals—which are standards of social competence that individuals strive for through personal growth—are negatively related to perceptions of loneliness and positively related to perceptions of belongingness in adolescent students. Thus, those who are intentionally trying to improve their social skills tend to also perceive themselves as less lonely and have a greater sense of belonging, than those who are not interested in developing their social skills. Family support is another protective factor (Chang, Chang, Martos, Sallay, Lee, Stam, Batterbee, & Yu, 2017). Chang, et. al. (2017) found that familial support lowered the risk of loneliness among university students, which, consequentially, lowered the risk of suicide. Thus, although loneliness can have many negative impacts, it can also be reduced or prevented by different attitudinal and social factors. Yet another protective factor against loneliness which will be examined in more detail is belongingness (Yıldız, 2016).

Belongingness

Belongingness is a universal and fundamental need (DeWall, Deckman, Pond, & Bonser, 2011). All humans share this need for stable, supportive, and positive interpersonal connection (Mellor, Stokes, Firth, Hayashi, & Cummins, 2008). The need to belong is highly individualistic, and this subjectivity is why the definition of belongingness, like loneliness, is difficult to articulate. Vaccaro and Newman (2016) strove to better understand belongingness by conducting in-depth interviews with university students from both privileged and minority backgrounds and found that the two most common characteristics associated with belongingness, are “being comfortable” and “fitting in” (2016). When examined from an educational perspective, belongingness—such as belongingness to a particular class, major, or institution—has been associated with academic motivation and positive emotional engagement (Freeman, Andermann, & Jensen, 2007; Wilson, Jones, Bocell, Crawford, Kim, Veilleaux, & Plett, 2015).

Belongingness and Loneliness

Belongingness has a close relationship with loneliness; those who are lonely often have an “unmet need to belong” (Mellor et al., 2008). As stated earlier, this need to belong is subjective. Some may only need a few relationships in their life to feel fulfilled while others may need many. Mellor et al. (2008) found that the greater one’s need for belongingness is, the greater one’s risk is for loneliness. They also found that those who are lonely have an unmet need to belong. This need to belong, if unfulfilled, can drive people (specifically adolescents and emerging adults) to engage in deceptive approval seeking behaviour on social media (Dumas, Maxwell-Smith, Davis, & Giulietti, 2017). Dumas et al. found that of their emerging adult sample, those who had weak peer belongingness tended to engage in deceptive behaviour on social

media, such as buying followers and manipulating their physical appearance, more than those who had strong peer belonging.

However, when the belongingness need is met, it functions as a strong protective factor against loneliness (Chang et al., 2017). Chang et al. (2017) found that family support—a strong source of belonging—acted as a protective factor against loneliness. Belongingness is so important that it can continue to act as a buffer to loneliness, even when an individual is experiencing low peer acceptance (Baskin, Wampold, Quintana, & Enright, 2010). Baskin et al. came to this conclusion by studying 350 middle school students. The researchers asked their participants to rank their class mates by social desirability (their desire to spend time with a certain classmate). The participants also completed loneliness and belongingness inventories. The researchers found that students who scored low on peer acceptance could be protected from loneliness if they scored high on belongingness.

In another study that examined the relationship between loneliness and belongingness, older adults, some of whom lived in the community while others were institutionalized, were administered loneliness and belongingness measures (Prieto-Flores, Fernandez-Mayoralas, Forjaz, Rojo-Perez, & Martinez-Martin, 2011). It was found that belongingness acted as a protective factor against loneliness among both groups of participants (Prieto-Flores et al., 2011). In conclusion, the literature suggests that there is a strong negative relationship between belongingness and loneliness.

Emotional Intelligence

The third variable in the triadic relationship that I will be researching in this study is emotional intelligence. Emotional intelligence is a branch of psychology that has gained increased importance and respect over the last few decades (Killian, 2012). Emotional

intelligence has been defined as “the ability to monitor one’s own and others’ feelings and emotions, to discriminate among them, and to use this information to guide one’s thinking and actions” (Salovey & Mayer, 1990, p. 189). This concise definition captures the multi-faceted nature of emotional intelligence, for it involves understanding and reacting correctly to the emotions of others, and also to our own emotions.

Traditionally emotional intelligence (EI) has been measured by ability EI measures and trait EI measures, which each assess different aspects of EI (Davis, & Humphrey, 2012). Ability EI has to do with an assessment of actual emotional intelligence proficiency while trait EI has to do with an individual’s perception and self-evaluation of their own emotional intelligence (2012). Because of these differences, ability and trait EI are measured in different ways: Ability EI measures emotional intelligence as a distinct cognitive ability which is related to “reasoning and problem solving in the emotional domain” (Austin, 2012, p. 564) while trait EI measures emotional intelligence as part a part of one’s personality (Austin, 2012). Trait EI and ability EI are also measured using different subscales. Trait EI conceptualizes EI as containing well-being (happiness, human flourishing), emotionality (emotional perception and expression), sociability (response to and management of others emotions), and self-control (management of one’s own emotional impulses) (Davis & Humphrey, 2012). Ability EI conceptualizes EI as including four distinct branches of emotional ability: The abilities to “perceive emotions in oneself and others accurately, (b) use emotions to facilitate thinking, (c) understand emotions, emotional language, and the signals conveyed by emotions, and (d) manage emotions so as to attain specific goals” (Mayer, Salovey, & Caruso, 2008, p. 506). This current study focuses on trait emotional intelligence. I decided to use a trait EI measure for this study because it, unlike the ability EI measure, is a self-report scale and thus encouraged the participants to reflect on their emotional

intelligence in a similar way to how they were asked to reflect on their loneliness and belongingness.

EI and Loneliness

Emotional intelligence has been shown to be closely correlated with loneliness (Wols, et al., 2015; Zou, 2014; Zysberg, 2012). Wols et al. (2015) examined this relationship between loneliness and emotional intelligence by testing a sample of adolescents at the beginning and end of their academic year (the test times were separated by a period of ten months) with measures of ability EI (MSCEIT-YV) and loneliness. The researchers found a reciprocal relationship between these two variables—High EI predicted decreased loneliness over time and, conversely, high loneliness negatively affected EI overtime. Thus, the researchers found that EI and loneliness are mutually influential. However, the researchers were not certain if the impact of loneliness on emotional intelligence would be long term. The participants in this study were younger (11-13) than those in the current study and were attending a public high school in the UK. The school was chosen by the researchers because it was representative of the average school in the UK. The school from which participants were recruited in this current study, however, is not representative of the average Canadian university. Although I hypothesized that I would find similar results to that of Wols et al. (2015), there were many factors that were unique to the sample that I studied because Tyndale University College and Seminary is a small, private, Christian university which intentionally fosters community.

The relationship between loneliness and emotional intelligence is influenced by a number of factors. Another researcher who analyzed this relationship between emotional intelligence and loneliness is Zou (2014) who concluded that self-esteem and social support are integral in understanding the relationship between trait EI and loneliness. Both self-esteem and social

support mediated the relationship between EI and loneliness, but social support was more important than self-esteem in understanding the relationship between EI and loneliness. Going along with the same theme, Zysberg (2012) found that the number of friends one has and finding meaning in life are important variables to consider when understanding the association between EI and loneliness. As this research indicates, a strong relationship between loneliness and emotional intelligence exists, though it is a complex relationship. Not only do both variables tend to influence each other, but also their relationship is influenced by a number of other variables (Zhang, Zou, Wang, & Finy, 2015).

Belongingness and Emotional Intelligence

As of yet, the relationship between emotional intelligence and belongingness has not received much attention in research. The strong negative correlations that exist between belongingness and loneliness, and then loneliness and emotional intelligence, suggest that there would also be a negative correlation between belongingness and emotional intelligence (Jung, Song, & Vorderer, 2012). An interesting study conducted by Cheung and Gardner (2015) seems to challenge this logical progression, however. Cheung and Gardner (2015) explored the relationship between emotional intelligence and need to belong. Once someone's need to belong is fulfilled, they experience belonging. Cheung and Gardner were interested, however, in the possibility of manipulating this need. Participants in this study were faced with a task that tested ability emotional intelligence—such as describing how they would calm down a friend who was angry. Before completing the task, participants in the experimental group were first asked to reflect on a time where they experienced social exclusion while those in the control group reflected on a neutral stimulus. Those in the experimental group, whose need to belong had been activated, were more creative with their responses and reported more responses than those in the

control group. This suggests that experiencing unmet need to belong can lead to more emotionally intelligent behaviour, as the individual acts out of the desire for inclusion. Potentially, then, lower belongingness could be positively related to emotional intelligence.

Although this finding is interesting, the study's ecological validity appears to be questionable. The researchers temporarily lowered belongingness in a laboratory setting—and this fostered EI by increasing the participants' desire to belong and possibly social awareness as well. However, someone experiencing temporarily lowered belongingness in a laboratory setting is quite different than that same person experiencing consistent loneliness or low levels of belonging day-after-day. The effects of the second could be quite different than the first and may not result in increased EI but rather decreased EI, due to feelings of loneliness, rejection, and disconnect. Thus, although the study by Cheung and Gardner (2015) is interesting and raising questions about the possible positive side-effects of social exclusion, one should be careful not to generalize the study's findings. This present study has contributed to the topic of emotional intelligence and belongingness—a topic that has, as of yet, been neglected in research, but it did not address the possibility of manipulating need to belong to augment emotional intelligence. More research should be done to study the possibility of a positive relationship between increased need to belong and EI. Thus, loneliness, belongingness, and emotional intelligence are all closely interconnected, but have yet to be studied together longitudinally.

Hypotheses

In this study, the triadic relationship between loneliness, emotional intelligence, and belongingness was explored. The hypotheses that I tested were as follows.

1. High levels of loneliness at Time 1 would be predictive of lowered levels of emotional intelligence and belongingness at Time 2.

2. High levels of emotional intelligence at Time 1 would be predictive of higher levels of belongingness and lower levels of loneliness at Time 2.

3. High levels of belongingness at Time 1 would be predictive of higher levels of emotional intelligence and lower levels of loneliness at Time 2.

Method

Participants

There were 125 participants who took part in this study. The study was advertised in a number of classes in a private Christian university in Ontario, Canada. The majority of these classes were in the Social Sciences, but the researcher, hoping to increase the diversity in the sample, also advertised in English and Christian Ministry classes. The researcher also used social media and word of mouth to gather interest and participants. Some of the professors, in whose classes the researcher advertised, agreed to give an extra credit incentive (typically 1% toward to student's final mark, but in one case the professor gave extra points towards a midterm instead). Brownies were also used as an incentive and were offered to students at each test time after they completed participation.

At the first test time 77 students participated. This first group of students' ages ranged between 17-37, ($\text{Median}_{\text{age}} = 20$). Fifty-eight (75%) of these participants were female. There were participants from all years of study, but nearly half (44%) were in their first year, and 90% were in the first three years of study. Fifty-three (69%) of the participants were single and 24 (31%) indicated that they were in a dating relationship. These participants were predominately Caucasian (73.7%). However, a plethora of other ethnicities, were represented as well: Eleven identified as Black, seven as Filipino, four as Chinese, three as Arabic, three as Indigenous, three

as Latin American, two as South Asian. Eight of these identified as mixed—and so selected more than one ethnicity.

At the second test time, 38 (50%) of the original group of students returned and 48 new students also participated, with a total of 86 students for the second test time. These participants' ages ranged between 18-59 ($\text{Median}_{\text{age}} = 20$). Of the 86 participants 54 (63%) were female. Five percent of the participants were in their first semester of study, 38% were in their first year of study, and 85% were in the first three years of study. The majority of the participants were not in a relationship—either single or divorced (69.9%), while 30.1% were in a relationship—either dating, engaged, or married. Once again, the majority of the participants identified as Caucasian (72.6%). However, a number of other ethnic groups were represented as well: Nine participants identified as Black, three as Arabic, three as Filipino, two as Chinese, three as Latin American, three as South Asian, one as Indigenous. Participants also identified as Dutch, German, Indian, Ukrainian, and Caribbean. Six participants indicated a mixed ethnic heritage by selecting more than one ethnicity.

Apparatus

Background Questionnaire (See Appendix A)

This is a short, 10-item questionnaire which inquires about participants' age, gender, social life, relationship status, and involvement in the university Community. It was designed so that the participants' scores on the other measures could be compared based on group demographics (such as gender and relationship status).

Social and Emotional Loneliness Scale- Short (See Appendix B)

The short version of the Social and Emotional Loneliness Scale (SELSA-S) was used because it is less time consuming than the original, but still shown to be reliable and accurate (DiTommaso, Brannen, & Besqt, 2004). The SELSA-S is composed of 15 questions chosen from the original SELSA, five from each of its subscales (Social, Romantic, and Family) (2004). Participants rated their agreement or disagreement of each item on a 7-point Likert scale. DiTommaso, Branne, and Best (2004) have shown that family, social, and romantic loneliness are separate constructs, thus a person could have high romantic loneliness, but low social and family loneliness. In order to be able to track reasons why people might have higher or lower loneliness in these categories, the Background Questionnaire includes questions about how often the participant spends time with their family and friends and if they have a romantic partner. Research has found internal reliability for all three subscales with Cronbach's alpha as follows: Romantic= 0.87, Social= 0.90, and Family= 0.89 (DiTommaso et al., 2004). In the current study the reliability coefficients at Time 1 were found to be as follows: Romantic= 0.82, Family= 0.87, Social= 0.79. The reliability coefficients at Time 2 were as follows: Romantic= 0.85, Family= 0.91, Social= 0.83.

Trait Emotional Intelligence Questionnaire- Short Form (See Appendix C)

The short form of the Trait Emotional Intelligence Questionnaire (TEIQue-SF) consists of 30 questions which are answered on a 7-point Likert scale (completely disagree to completely agree). An example question from the emotionality sub-set is: *Expressing my emotions with words is not a problem for me*. An example question from the sociability subset is: *I can deal effectively with people*. An example from the well-being subset is: *I generally don't find life enjoyable*. And one from the self-control subset is: *I usually find it difficult to regulate my*

emotions. Its validity and reliability have been confirmed in numerous studies (Siegling, Vesely, Petrides, & Saklofske, 2015). Thus, it has been shown to be a useful measure for Trait emotional intelligence. In other research, a Cronbach's alpha value for internal reliability of total trait EI has been found to be 0.88 (O'Connor, Nguyen, & Anglim, 2017; Siegling et al., 2015). The subscale reliability values have been found to be: well-being= 0.86, self-control= 0.67, emotionality= 0.69, sociability= 0.73 (Siegling et al., 2015). In this current study Cronbach's alpha values were found to be as follows at Time 1: total trait EI= 0.84, well-being= 0.84, self-control= 0.64, emotionality= 0.66, sociability= 0.74. The values at Time 2 were as follows: total trait EI= 0.87, well-being= 0.84, self-control= 0.68, emotionality= 0.62, sociability= 0.67.

The General Belongingness Scale (See Appendix D)

The General Belongingness Scale (GBS) was developed by Malone, Pillow, and Osman (2012) and was created to be a brief, yet effective, measure of belongingness. The GBS consists of 12 items that are measured on a 7-point Likert scale (strongly disagree to strongly agree); some examples are: *I feel connected with others* and *I feel like an outsider*. The creators conducted a number of studies to test the scales' reliability and validity, these included testing the GBS against other established measures such as the Sense of Belonging Instrument-Psychological Experiences (SOBI-P), the Big Five Inventory, and the Need to Belong scale. The GBS was consistently found to be accurate and reliable. In other research the reliability has been quite high: Cronbach's alpha = 0.94 (Malone et al., 2012). In the current study the reliability value was high at both test times: Time 1= 0.89 and Time 2= 0.92.

Procedure

This study involved collecting data at two different test times in an academic year—the first on the fourth week of the fall semester (Time 1) and the second on the fourth week of the

winter semester (Time 2). This time was chosen so that it was late enough in each semester so that participants' results would reflect that they were settled into their school environment to some extent, and it was also early enough so that the students would not yet be burdened by midterms or term papers. The test times were separated by a period of about 5 months. The study experienced a mortality rate of 50% from the first test to the second. Students were not asked to commit to participating in both study times, but simply encourages to do so, so this was not surprising. However, although some participants were lost after the first test time (39), more were gained (48). After the participants signed up for the research study, they were emailed a reminder of when they should to come in to participate. The researcher scheduled five separate times in which the participants could take part per semester, to accommodate for the students' different scheduling demands. Four separate classrooms were used over the two semesters. The main difference between the rooms is that one of them is used by the university for meetings, and so is much more comfortably furnished than the other classrooms. Before they completed the measures, the participants read and signed two consent forms (see Appendix E), and they kept one of the copies. All of the participants completed the TEIQue-SF, the GBS, the SELSA-SF, and also the short background questionnaire. The measures were given to the participants to fill out in a random order. Because there were a number of times when the participants could come in and complete the inventories, some of the participants were together in the room with more participants while others were in the room with fewer. The participants were not given a time constraint, but they were told that it might take them on average 15-30 min. The majority of participants finished in less than 20 minutes. After they completed the measures they were encouraged to ask the researcher if they had any questions about the research project. Students

who were eligible signed up for extra credit, and student who so wished took a homemade chocolate brownie on their way out—this was another method of incentive.

The second test time proceeded in the same fashion. The students were reminded about the study by email and then again by an announcement in class. An additional question was added to the demographic questionnaire for the second test time, so that the researcher could record how many of the participants at the second test time were first semester students. After the data was gathered, student numbers were used to connect the data from Time 1 with the data from Time 2. After the data was connected from Time 1 and Time 2—the student numbers were deleted so that the data could no longer be traced to an individual student.

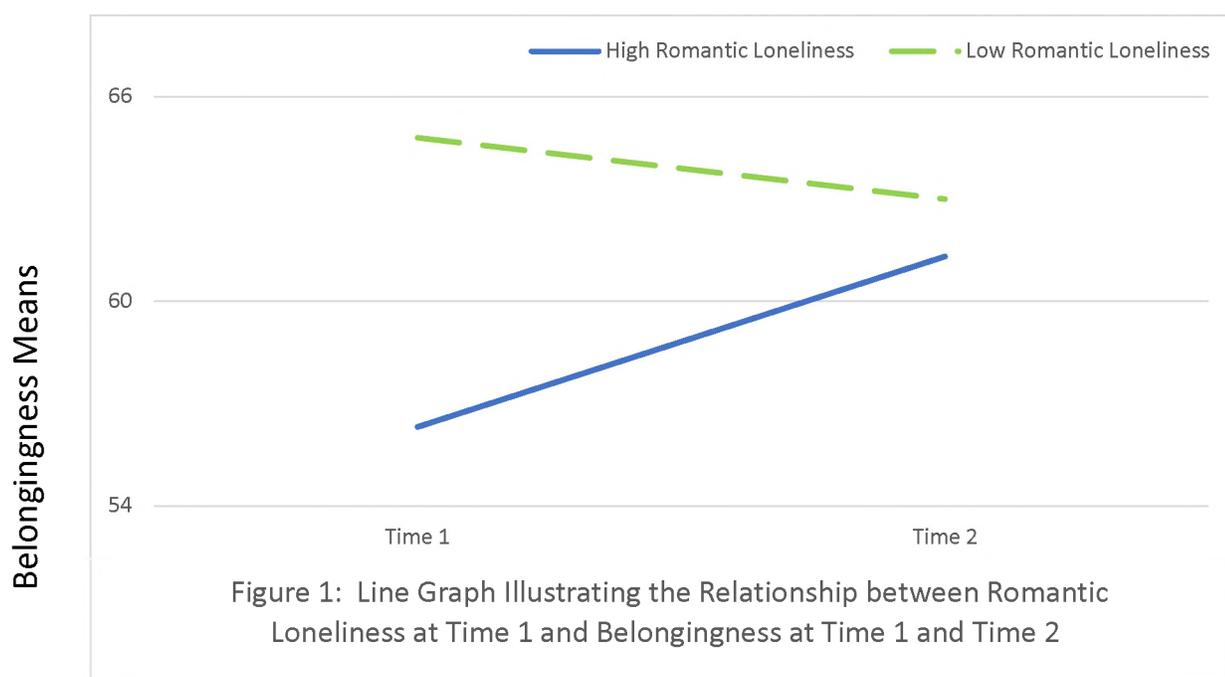
Results

In order to test my main hypotheses, I conducted two-way repeated measure ANOVAs which explored the relationship between my variables over time. For these calculations I only included the data of students who participated at both Time 1 and Time 2.

I divided each variable—total EI, belongingness, romantic loneliness, social loneliness, and family loneliness—into two categories: high and low. Then I examined the means of the two categories at Time 1 and Time 2. This allowed me to compare: 1) those who were high or low on loneliness at Time 1, to see how their scores on EI and belongingness changed over time, 2) those who were high or low on belongingness at Time 1, to see how their scores on EI and loneliness changed over time, 3) those who were high or low on EI at Time 1, to see how their scores on loneliness and belongingness changed over time.

Loneliness was examined first—the measure used is multi-dimensional and its three different facets are never combined, so each facet was broken down into its own high/low category. Thus, a two-way repeated measures ANOVA was carried out to explore the effects of

romantic loneliness at Time 1 on belongingness at Time 1 and Time 2. There was no main effect of time of measurement on belongingness, $F(1, 37) = 1.471, p > .05$. Belongingness scores were similar at Time 1 and Time 2. There was no main effect of romantic loneliness category on belongingness, $F(1, 37) = .853, p > .05$. Belongingness scores did not vary depending on romantic loneliness category, $F(1, 37) = 6.644, p < .05$. Those who had greater romantic loneliness at Time 1 increased more in belongingness than those who had less romantic loneliness at Time 1. See Figure 1 for an illustration of the relationship between romantic loneliness at Time 1 and belongingness at Time 1 and Time 2.



Two-way repeated measures ANOVAs were also carried out to measure the relationship between belongingness category and loneliness category with the four components of EI and nothing of significance was found. These analyses have not been included, because of the lack of any significant findings. Therefore, all of the analyses reported with EI refer to total EI.

A two-way repeated measures ANOVA was carried out to explore the effects of romantic loneliness at Time 1 on EI at Time 1 and Time 2. There was no main effect of time of measurement on EI, $F(1, 33) = 3.092, p > .05$. EI scores were not significantly different at Time 1 and Time 2. There was no main effect of romantic loneliness category on EI, $F(1, 33) = 1.196, p > .05$. EI scores were similar for those high and low in romantic loneliness, $F(1, 33) = 0.085, p > .05$. Those who had greater romantic loneliness at Time 1 did not increase or decrease in EI more than those who had less family loneliness at Time 1.

A two-way repeated measures ANOVA was carried out to explore the effects of family loneliness at Time 1 on belongingness at Time 1 and Time 2. There was no main effect of time of measurement on belongingness, $F(1, 37) = 1.101, p > .05$. Belongingness scores were similar at Time 1 and Time 2. There was a main effect of family loneliness category on belongingness, $F(1, 37) = 9.319, p < .05$. Those with high family loneliness had lower belongingness at Time 1 and Time 2 than those with low family loneliness. There was no interaction between family loneliness and belongingness at Time 1 vs. Time 2, $F(1, 37) = 0.098, p > .05$. Those who had greater family loneliness at Time 1 did not increase or decrease in belongingness more than those who had less family loneliness at Time 1. See Figure 2 for an illustration of the relationship between family loneliness at Time 1 and belongingness at Time 1 and Time 2.

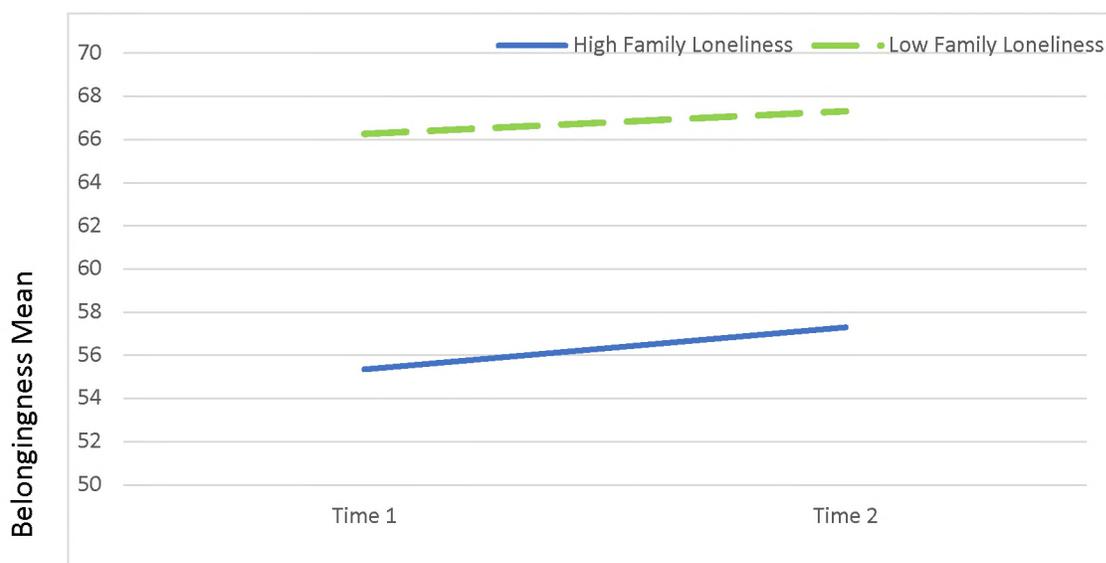


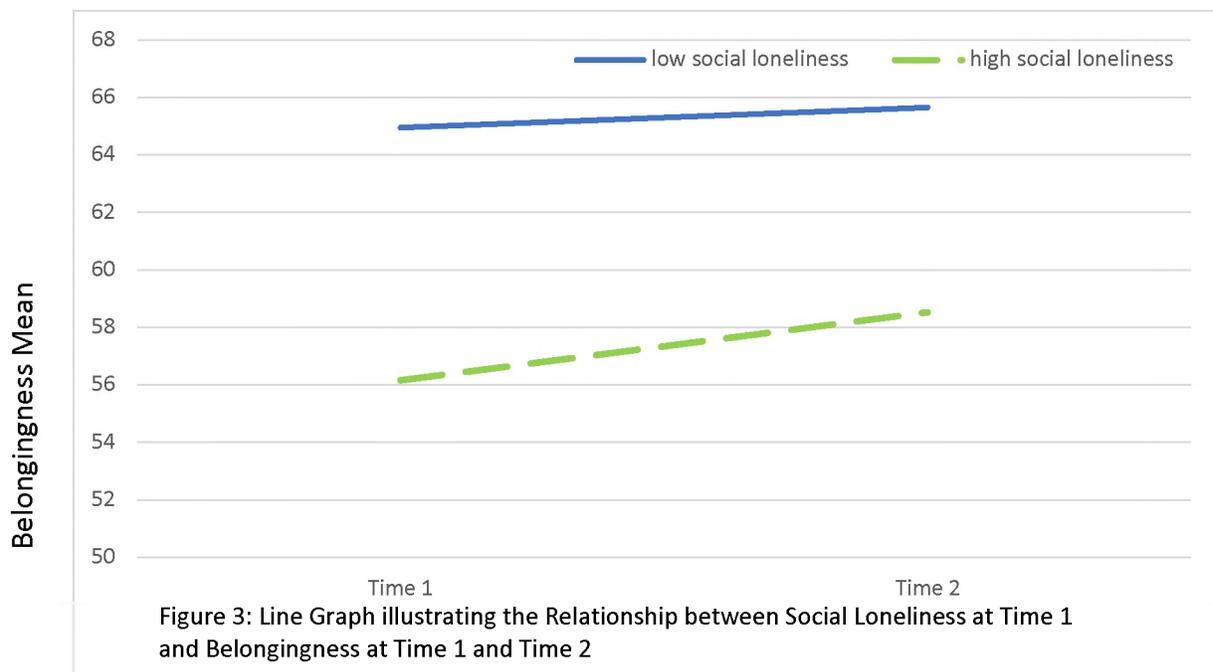
Figure 2: Line Graph of the Main Effect of Family Loneliness Category on Belongingness

A two-way repeated measures ANOVA was carried out to explore the effects of family loneliness at Time 1 on EI at Time 1 and Time 2. There was no main effect of time of measurement on EI, $F(1, 33) = 3.292, p > .05$. EI scores were not significantly different at Time 1 and Time 2. There was no main effect of family loneliness category on EI, $F(1, 33) = 1.558, p > .05$. EI scores did not vary based on family loneliness, $F(1, 33) = 0.122, p > .05$. Those who had greater family loneliness at Time 1 did not increase or decrease in EI more than those who had less family loneliness at Time 1.

A two-way repeated measures ANOVA was carried out to explore the effects of social loneliness at Time 1 on EI at Time 1 and Time 2. There was no main effect of time of measurement on EI, $F(1, 33) = 3.496, p > .05$. EI scores were not significantly different at Time 1 and Time 2. There was no main effect of social loneliness category on EI, $F(1, 33) = 0.838, p > .05$. EI scores did not vary based on social loneliness, $F(1, 33) = 1.704, p > .05$. Those who

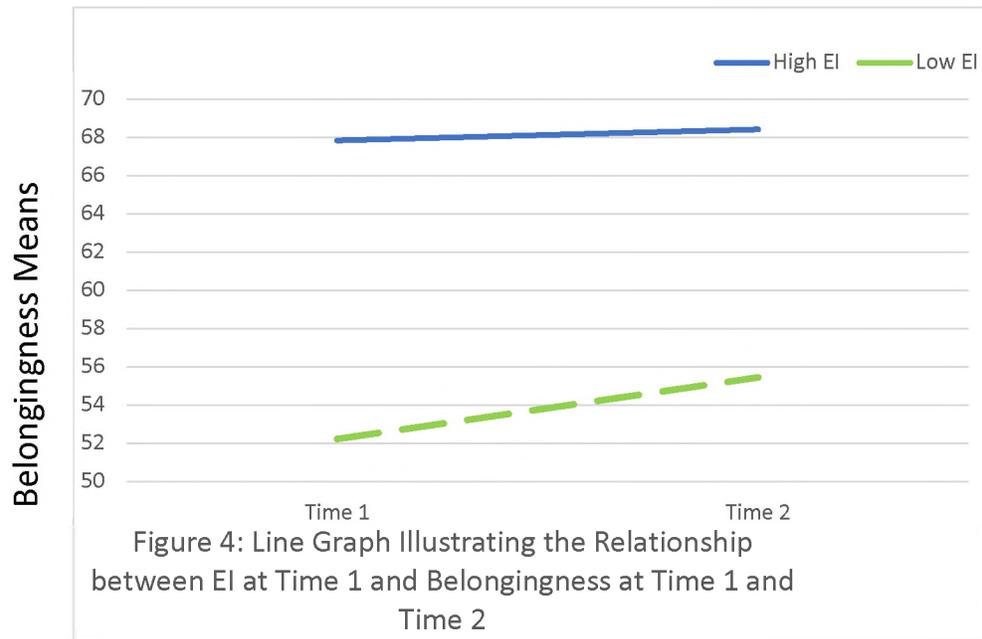
had greater social loneliness at Time 1 did not increase or decrease in EI more than those who had less social loneliness at Time 1.

A two-way repeated measures ANOVA was carried out to explore the effects of social loneliness at Time 1 on belongingness at Time 1 and Time 2. There was no main effect of time of measurement on belongingness, $F(1, 37) = 1.157, p > .05$. Belongingness scores were not significantly different at Time 1 and Time 2. There was a main effect of social loneliness category on belongingness, $F(1, 37) = 4.872, p < .05$. Those with high social loneliness consistently had lower belongingness than those with low social loneliness. There was no interaction between social loneliness and belongingness at Time 1 vs. Time 2, $F(1, 37) = 1.052, p > .05$. Those who had greater social loneliness at Time 1 did not increase or decrease in belongingness more than those who had less social loneliness at Time 1. See Figure 3 for an illustration of the relationship between social loneliness at Time 1 and belongingness at Time 1 and Time 2.

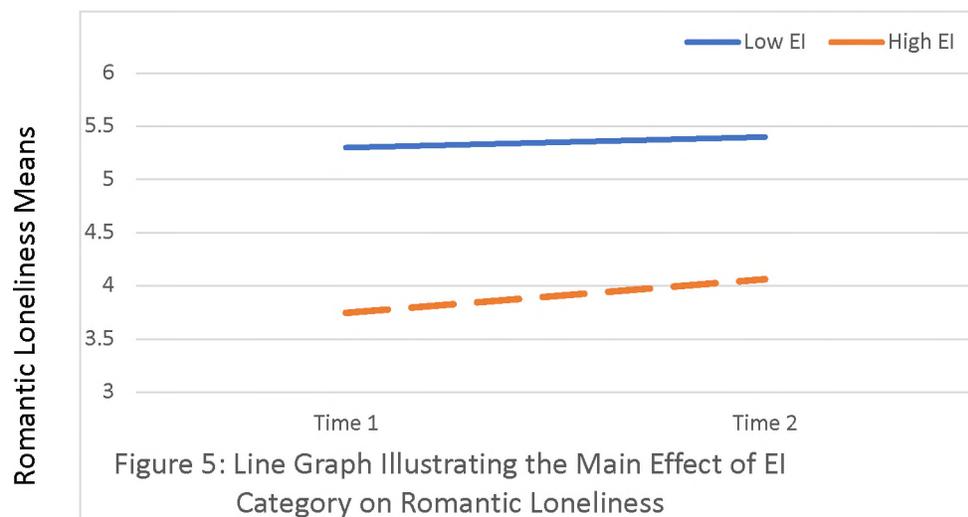


Hypothesis 1 argued that high levels of loneliness at Time 1 would be predictive of lowered levels of EI and belongingness at Time 2. This current study did not support this hypothesis. The only variables which interacted over time significantly were romantic loneliness category and belongingness. However, instead of students with greater romantic loneliness decreasing in belongingness over time, they actually increased in belongingness. The two other findings that were significant—a main effect of family loneliness category on belongingness and a main effect of social loneliness category on belongingness—suggested that rather than interacting over time, the variables relationship remains constant.

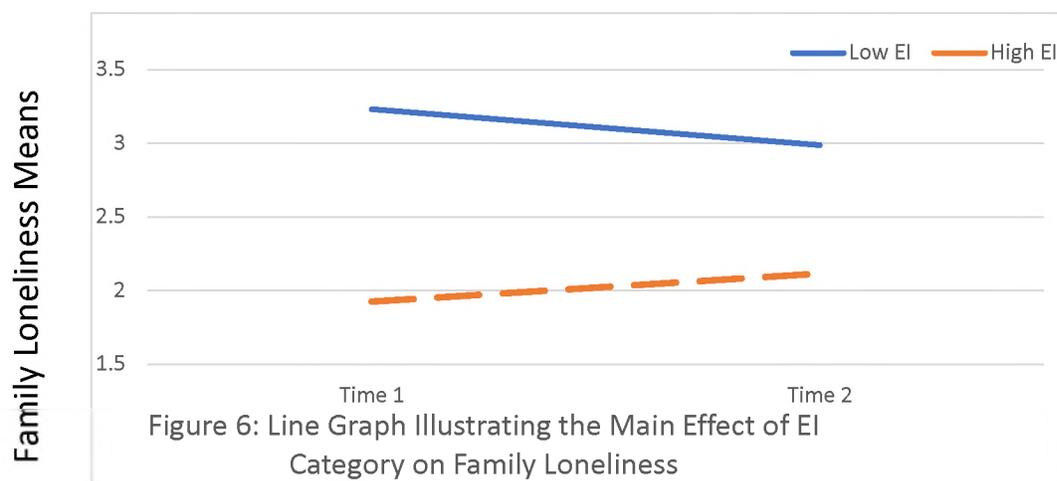
When EI was divided into low EI and high EI categories and then the relationship between these categories and belongingness and loneliness were examined—a theme began to emerge. For the majority of variables, with the exception of social loneliness, a main effect of EI category was found. A two-way repeated measures ANOVA was carried out to explore the effects of EI at Time 1 on belongingness at Time 1 and Time 2. There was no main effect of time of measurement on belongingness, $F(1, 35) = 1.667, p > .05$. Belongingness scores were not significantly different at Time 1 and Time 2. There was a main effect of EI category on belongingness, $F(1, 35) = 19.925, p < .05$. Those with high EI had higher belongingness at Time 1 and Time 2 than those with low EI. There was no interaction between EI and belongingness at Time 1 vs. Time 2, $F(1, 35) = 0.806, p > .05$. Those who had greater EI at Time 1 did not increase or decrease in belongingness more than those who had less EI at Time 1. See Figure 4 for an illustration of the relationship between EI at Time 1 and belongingness at Time 1 and Time 2.



A two-way repeated measures ANOVA was carried out to explore the effects of EI at Time 1 on romantic loneliness at Time 1 and Time 2. There was no main effect of time of measurement on romantic loneliness, $F(1, 35) = 2.154, p > .05$. Romantic loneliness scores were not significantly different at Time 1 and Time 2. There was a main effect of EI category on romantic loneliness, $F(1, 35) = 6.042, p < .05$. Those with higher EI had lower romantic loneliness at both Time 1 and Time 2. There was no interaction between EI and romantic loneliness at Time 1 vs. Time 2, $F(1, 35) = 0.580, p > .05$. Those who had greater EI at Time 1 did not increase or decrease in romantic loneliness more than those who had less EI at Time 1. See Figure 5 for an illustration of the main effect of EI category on romantic loneliness.



A two-way repeated measures ANOVA was carried out to explore the effects of EI at Time 1 on family loneliness at Time 1 and Time 2. There was no main effect of time of measurement on family loneliness, $F(1, 35) = 0.031, p > .05$. Family loneliness scores were not significantly different at Time 1 and Time 2. There was a main effect of EI category on family loneliness, $F(1, 35) = 6.866, p < .05$. Those with higher EI had lower family loneliness at both Time 1 and Time 2. There was no interaction between EI and family loneliness at Time 1 vs. Time 2, $F(1, 35) = 1.927, p > .05$. Those who had greater EI at Time 1 did not increase or decrease in family loneliness more than those who had less EI at Time 1. See Figure 6 for an illustration of the main effect of EI category on family loneliness.



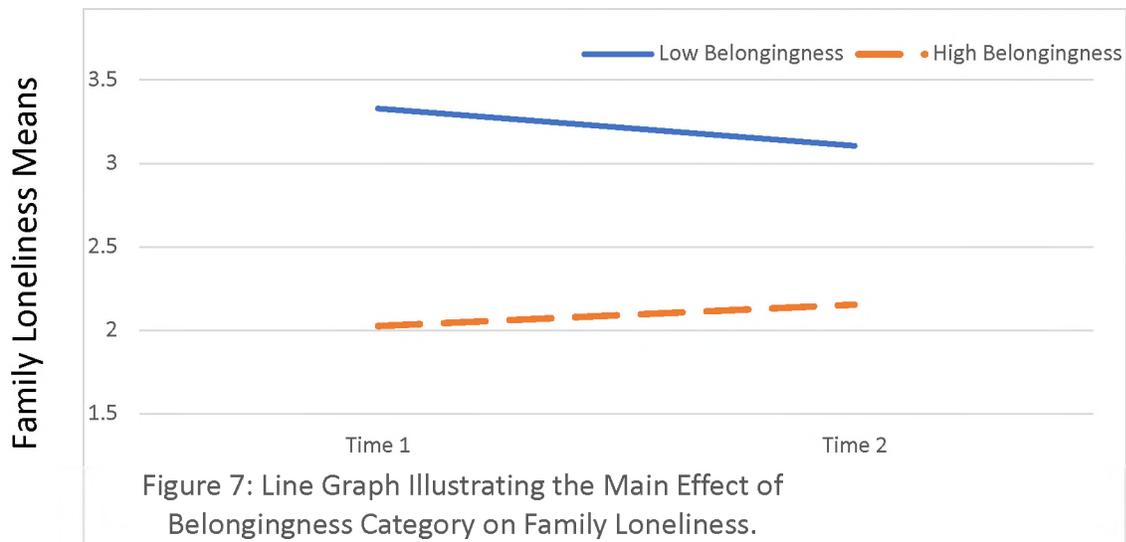
A two-way repeated measures ANOVA was carried out to explore the effects of EI at Time 1 on social loneliness at Time 1 and Time 2. There was no main effect of time of measurement on social loneliness, $F(1, 35) = 0.125, p > .05$. Social loneliness scores were not significantly different at Time 1 and Time 2. There was no main effect of EI category on social loneliness, $F(1, 35) = 2.011, p > .05$. There was no interaction between EI and social loneliness at Time 1 vs. Time 2, $F(1, 35) = 0.023, p > .05$. Those who had greater EI at Time 1 did not increase or decrease in social loneliness more than those who had less EI at Time 1.

Hypothesis 2 argued that high levels of emotional intelligence at Time 1 would be predictive of higher levels of belongingness and lower levels of loneliness at Time 2. The research did not support this hypothesis. There was a main category effect between EI on belongingness, romantic loneliness, and family loneliness. Thus, the relationship of the variables remained constant over time and the predicted interaction did not occur.

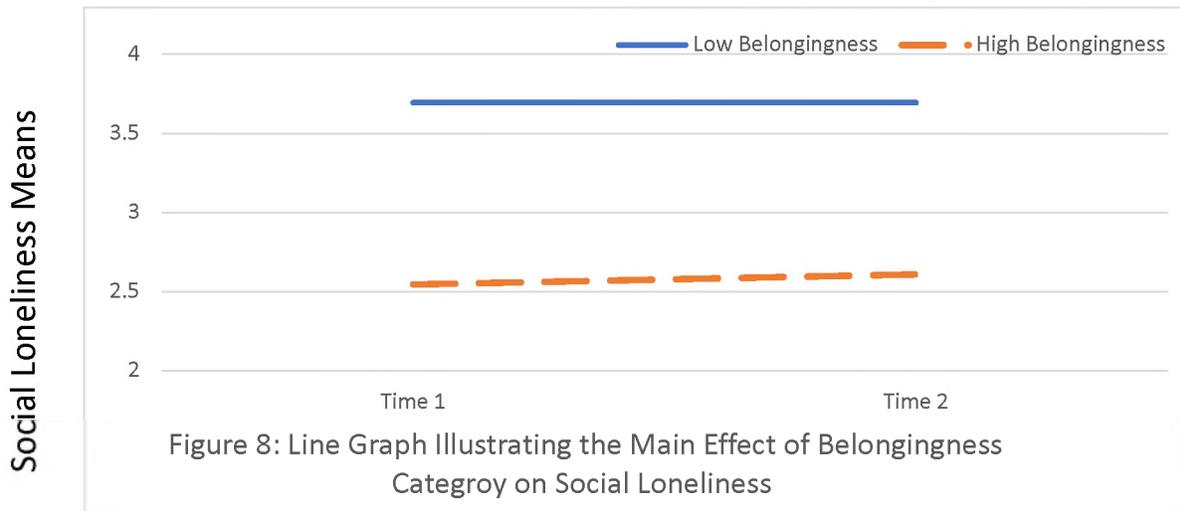
The theme of main effects of category continued into the analyses of belongingness, displaying that those who were high in belongingness consistently scored higher on EI measures and lower on loneliness measures than those who were low in belongingness.

A two-way repeated measures ANOVA was carried out to explore the effects of belongingness at Time 1 on family loneliness at Time 1 and Time 2. There was no main effect of time of measurement on social loneliness, $F(1, 37) = 0.102, p > .05$. Family loneliness scores were not significantly different at Time 1 and Time 2. There was a main effect of belongingness category on family loneliness, $F(1, 37) = 7.750, p < .05$. Those with higher belongingness had significantly lower family loneliness at both Time 1 and 2. There was no interaction between belongingness and family loneliness at Time 1 vs. Time 2, $F(1, 37) = 1.350, p > .05$. Those who had greater belongingness at Time 1 did not increase or decrease in family loneliness more than

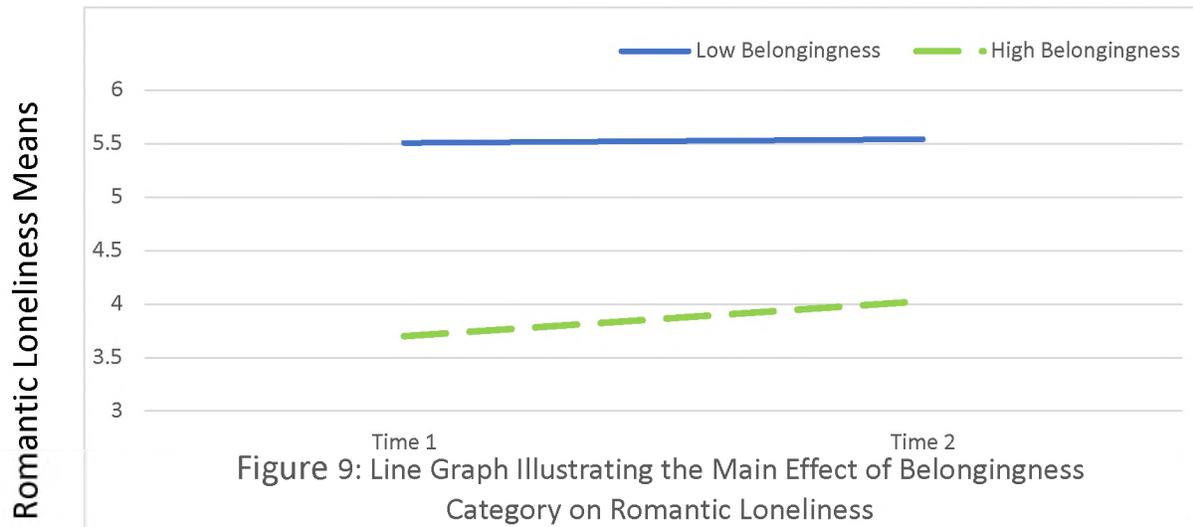
those who had less belongingness at Time 1. See Figure 7 for an illustration of the main effect of belongingness category on family loneliness.



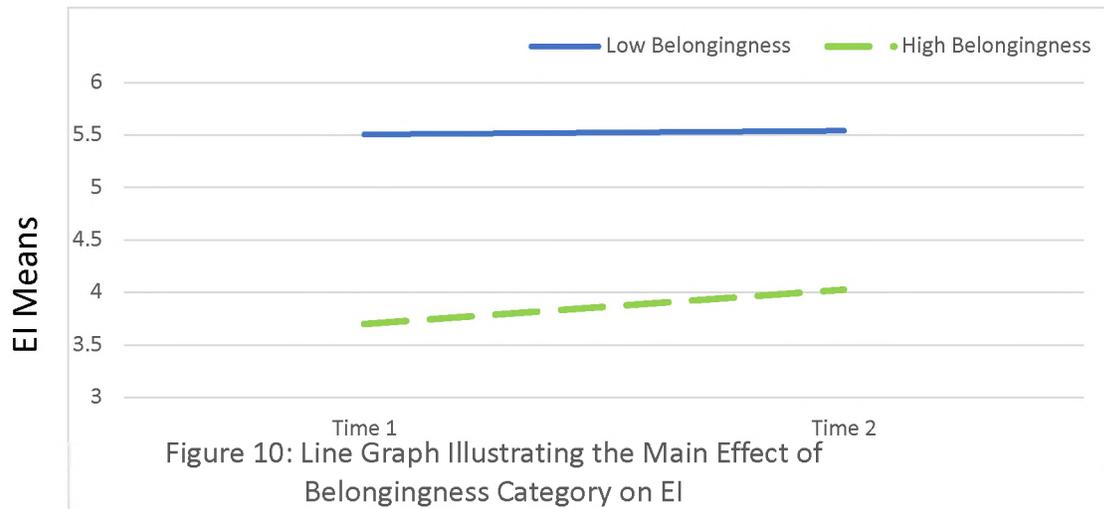
A two-way repeated measures ANOVA was carried out to explore the effects of belongingness at Time 1 on social loneliness at Time 1 and Time 2. There was no main effect of time of measurement on social loneliness, $F(1, 37) = 0.039, p > .05$. Social loneliness scores were not significantly different at Time 1 and Time 2. There was a main effect of belongingness category on social loneliness, $F(1, 37) = 9.541, p < .05$. Those with higher belongingness had significantly lower social loneliness at both Time 1 and two. There was no interaction between belongingness and social loneliness at Time 1 vs. Time 2, $F(1, 37) = 0.039, p > .05$. Those who had greater belongingness at Time 1 did not increase or decrease in social loneliness more than those who had less belongingness at Time 1. See Figure 8 for an illustration of the main effect of belongingness category on social loneliness.



A two-way repeated measures ANOVA was carried out to explore the effects of belongingness at Time 1 on romantic loneliness at Time 1 and Time 2. There was no main effect of time of measurement on romantic loneliness, $F(1, 37) = 1.795, p > .05$. Romantic loneliness scores were not significantly different at Time 1 and Time 2. There was a main effect of belongingness category on romantic loneliness, $F(1, 37) = 9.252, p < .05$. Those with higher belongingness had significantly lower romantic loneliness at both Time 1 and two. There was no interaction between belongingness and romantic loneliness at Time 1 vs. Time 2, $F(1, 37) = 1.164, p > .05$. Those who had greater belongingness at Time 1 did not increase or decrease in romantic loneliness more than those who had less belongingness at Time 1. See Figure 9 for an illustration of the main effect of belongingness category on romantic loneliness.



A two-way repeated measures ANOVA was carried out to explore the effects of belongingness at Time 1 on EI at Time 1 and Time 2. There was no main effect of time of measurement on EI, $F(1, 33) = 3.208, p > .05$. EI scores were not significantly different at Time 1 and Time 2. There was a main effect of belongingness category on EI, $F(1, 33) = 5.142, p < .05$. Those with higher belongingness had significantly higher EI at both Time 1 and two. There was no interaction between belongingness and EI at Time 1 vs. Time 2, $F(1, 33) = 1.430, p > .05$. Those who had greater belongingness at Time 1 did not increase or decrease in EI more than those who had less belongingness at Time 1. See Figure 10 for an illustration of the main effect of belongingness category on EI.



Hypothesis 3 predicted that high levels of belongingness at Time 1 would be predictive of higher levels of EI at Time 2 and lowered levels of loneliness. This hypothesis was not supported by my research. There was a main effect of belongingness category on family loneliness, social loneliness, family loneliness, and EI. These findings suggest that rather than interacting over time, the variables' relationships remained constant.

Additional Hypothesis Tests

The second set of analyses that were performed involved computing the correlations between the variables and Time 1 and then the correlations between the variables at Time 2. Fisher's r to z comparisons were carried out to determine whether the correlations between variables changed from Time 1 to Time 2. These analyses were carried out because a central part of the research question was the assumption that the three variables: loneliness, belongingness, and emotional intelligence, would all be related and that those relationships might change over time. Thus, correlations were carried out to determine whether relationships existed between the variables at both Time 1 and Time 2.

		Time 1	Time 2	Z score
Belonging	El total	.504*(74)	.627*(80)	-1.1
	El well being	.580*(74)	.719*(84)	-1.5
	El self control	.274(75)	.402*(83)	-0.89
	El emotionality	.200(75)	.162(83)	0.24
	El sociability	.209(75)	.340*(83)	-0.87
	Loneliness: social	-.435*(76)	-.572*(85)	1.15
	Loneliness: family	-.446*(74)	-.501*(84)	0.44
	Loneliness: romantic	-.429*(76)	-.175(85)	-1.75
	p < 0.01			

Table 1: Relationship between Belonging and both Loneliness and EI at Time 1 and Time 2

Loneliness: Romantic	El total	-.190(75)	-.255(81)	0.42
	El well being	-.255(75)	-.175(85)	-0.52
	El self control	-.008 (76)	-.239(84)	1.46
	El emotionality	.124 (76)	-.059(84)	1.14
	El sociability	-.166(76)	-.162(84)	-0.03
	Belonging	-.429*(76)	-.175(85)	-1.75
Loneliness: Family	El total	-.250(73)	-.407*(80)	1.07
	El well being	-.313* (73)	-.370*(84)	0.4
	El self control	-.260 (74)	-.291*(83)	0.21
	El emotionality	.049 (74)	-.165(83)	1.32
	El sociability	-.155 (74)	-.278(83)	0.79
	Belonging	-.446* (76)	-.501*(85)	0.44
Loneliness: Social	El total	-.198(75)	-.430*(81)	1.59
	El well being	-.322* (75)	-.470*(85)	1.09
	El self control	-.066 (76)	-.195(84)	0.81
	El emotionality	-.090 (76)	-.189(84)	0.63
	El sociability	.061 (76)	-.234(84)	1.86
	Belonging	-.435* (76)	-.572*(85)	1.15
p < 0.01				

Table 2: Relationships between Loneliness Sub-Categories and both Belongingness and EI at Time 1 and Time 2

EI Total	Loneliness: romantic	-.190(75)	-.255(81)	0.42
	Loneliness: family	-.250 (73)	-.407*(80)	1.07
	Loneliness: social	-.198(75)	-.430*(81)	1.59
	Belongingness	.504*(74)	.627*(80)	-1.1
EI: well being	Loneliness: Romantic	-.255(75)	-.175(85)	-0.52
	Loneliness: Family	-.313*(73)	-.370*(84)	0.4
	Loneliness: Social	-.322*(75)	-.470*(85)	1.09
	Belongingness	.580*(74)	.719*(84)	-1.5
EI: self control	Loneliness: Romantic	-.008(76)	-.239(84)	1.46
	Loneliness: Family	-.260(74)	-.291*(83)	0.21
	Loneliness: Social	-.066(76)	-.195(84)	0.81
	Belongingness	.274(75)	.402*(83)	-0.89
EI: emotionality	Loneliness: Romantic	.124(76)	-.059(84)	1.14
	Loneliness: Family	.049(74)	-.165(83)	1.32
	Loneliness: Social	-.090 (76)	-.189(84)	0.63
	Belongingness	.200(75)	.162(83)	0.24
EI: sociability	Loneliness: Romantic	-.166(76)	-.162 (84)	-0.03
	Loneliness: Family	-.155(74)	-.278(83)	0.79
	Loneliness: Social	.061(76)	-.234(84)	1.86
	Belongingness	.209(75)	.340*(83)	-0.87
p < 0.01				

Table 3: Relationships between total EI and EI Sub-Categories and both Belongingness and EI at Time 1 and Time 2

As the table demonstrates, quite a number of the correlations were significant at $p < 0.01$. A few were significant at both test times: belongingness and total EI, belongingness and EI well-being, belongingness and family loneliness, belongingness and social loneliness, family loneliness and EI well-being, and social loneliness and EI well-being. While none of the z values were significant, a few were close (e.g. belongingness and romantic loneliness), and in several cases a correlation was significant at one time, and not significant at the other time, which indicates some degree of change over time. At Time 1 the negative correlation between belongingness and romantic loneliness was much stronger than at Time 2 (-.429 vs. -.175). Although the difference between these correlations is not quite significant—it is still interesting to note, because it concurs with the two-way repeated measures ANOVA results. This relationship between belongingness and romantic loneliness will be discussed later.

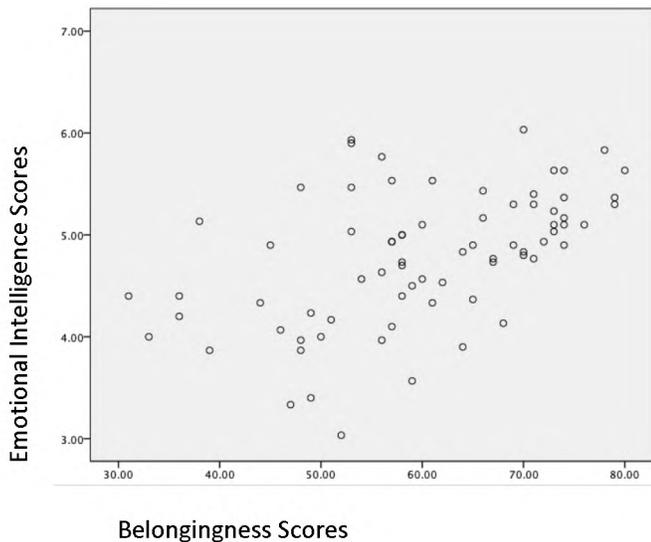


Figure 11: Correlation of EI and Belongingness at Time 1

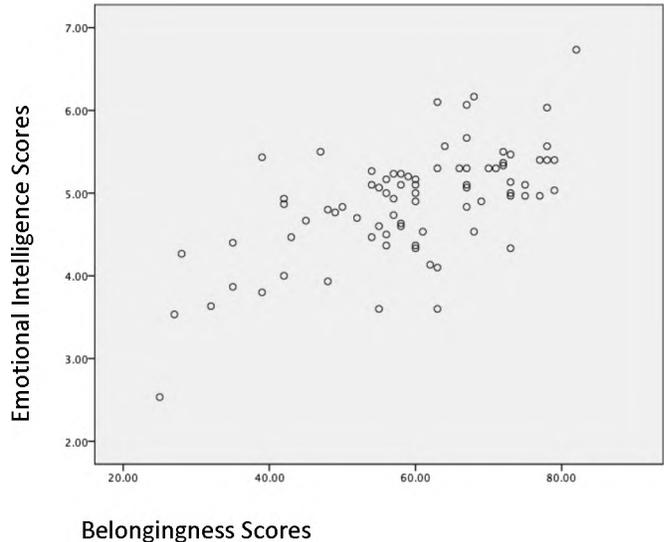


Figure 12: Correlation of EI and Belongingness at Time 2

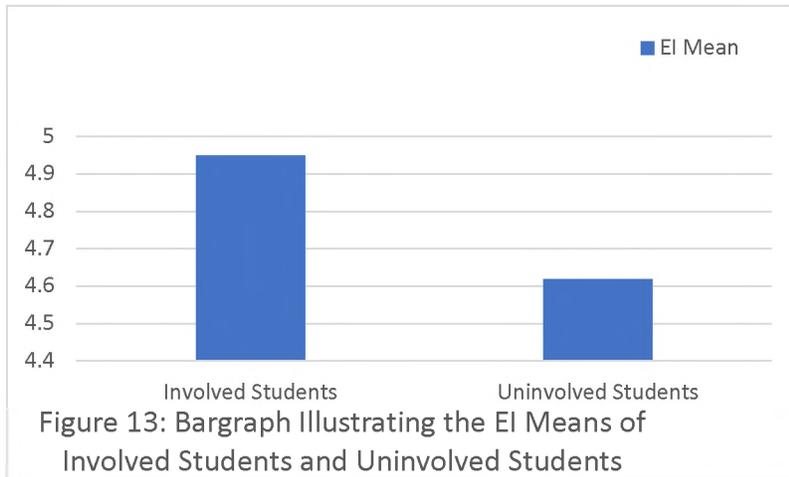
The above scatterplot graphs (Figure 11 and 12) show the positive correlation between emotional intelligence and belongingness at both Time 1 and Time 2. This strong relationship is an important finding because although the relationship between emotional intelligence and loneliness and the relationship between belongingness and loneliness are well supported in

literature—the relationship between emotional intelligence and belongingness has not received the same attention.

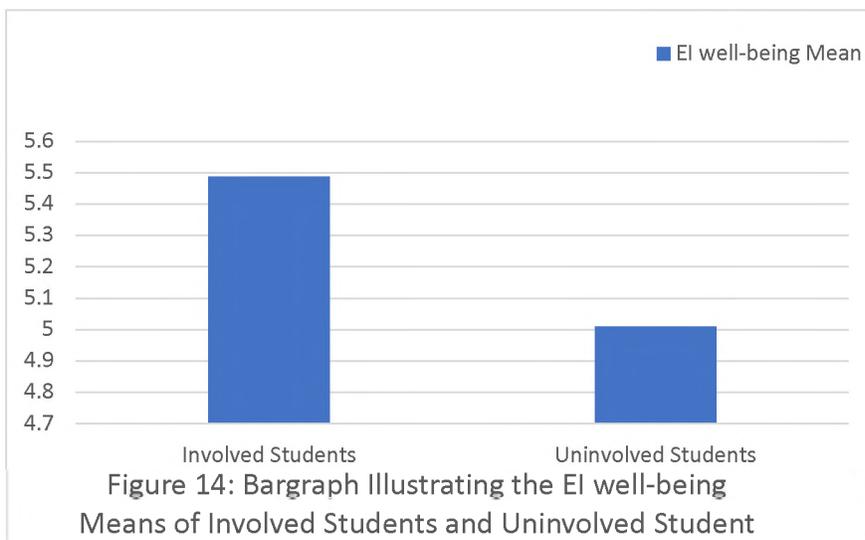
The focus of the study next shifted to examining the effects that demographic categories had on belongingness, loneliness, and emotional intelligence. Students' involvement at Tyndale University College & Seminary, including their participation in intramural sports, choir, and clubs was measured by questions on the demographic questionnaire. Students were coded into two categories: Involved or Uninvolved. Those in the involved category were involved in at least one extra-curricular activity at their university. How often students communicated with their family and friends from back home was coded into the categories: Communicates daily and Communicates less than daily. Relationship status (In a relationship or Not in a relationship) along with Gender (Male or Female) were also examined. The relationship between these demographic categories and the focus variables (loneliness, belongingness, and EI) was examined.

Differences at Time 1

An independent t-test revealed that the total EI scores for involved students ($M= 4.9492$) was significantly greater than uninvolved students ($M=4.6190$) at Time 1, $t(73)=-2.242$, $p< 0.05$. Students who were involved at Tyndale had significantly higher total EI than students who were not involved at Time 1. See Figure 13 for an illustration of the EI means of involved students and uninvolved students.

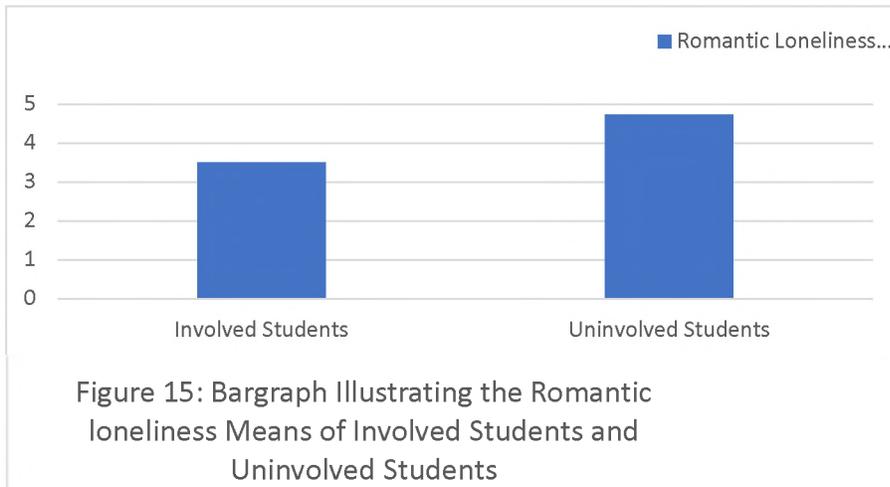


An independent t-test revealed that the EI well-being scores for involved students ($M=5.4875$) was significantly greater than uninvolved students ($M=5.0095$) at Time 1, $t(73)=-2.134$, $p<0.05$. Students who were involved at Tyndale had significantly higher EI well-being than students who were not involved at Time 1. See Figure 14 for an illustration of the EI well-being means of involved students and uninvolved students.

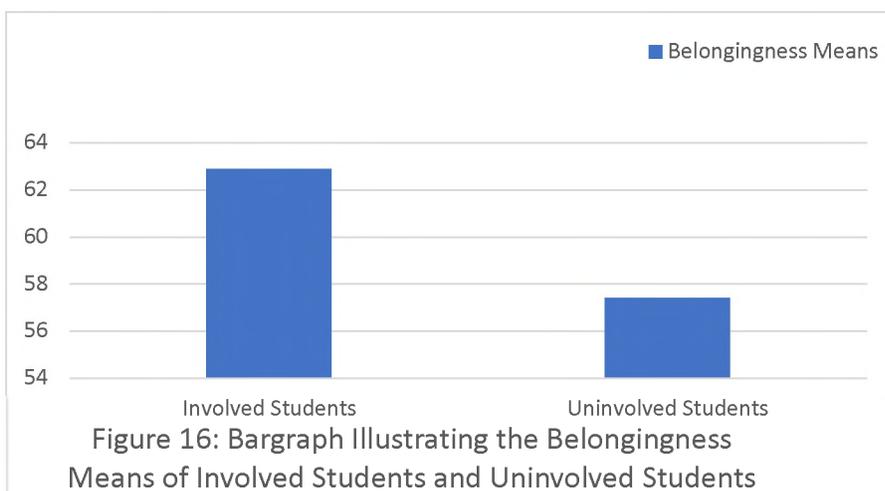


An independent t-test revealed that the romantic loneliness scores for involved students ($M=3.5095$) was significantly lower than uninvolved students ($M=4.7314$) at Time 1, $t(74.916)=2.909$, $p<0.05$. Students who were involved at Tyndale had significantly lower romantic

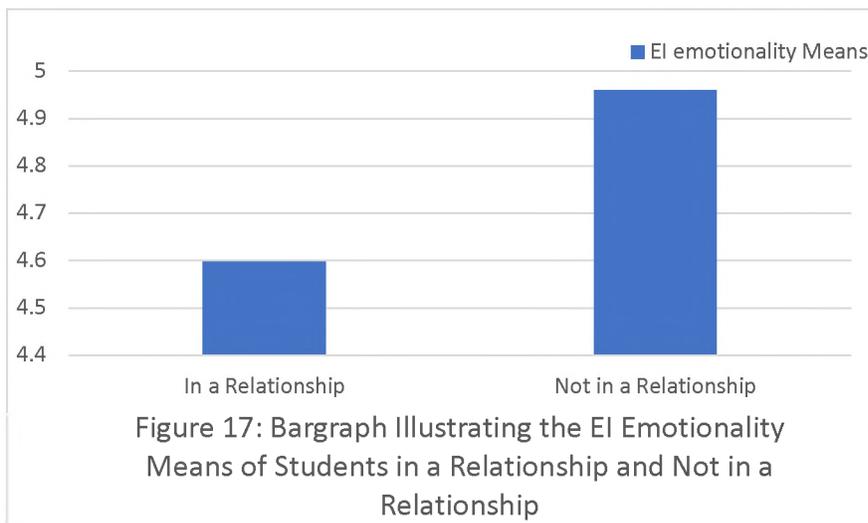
loneliness than students who were not involved at Time 1. See Figure 15 for an illustration of the romantic loneliness means of involved students and uninvolved students.



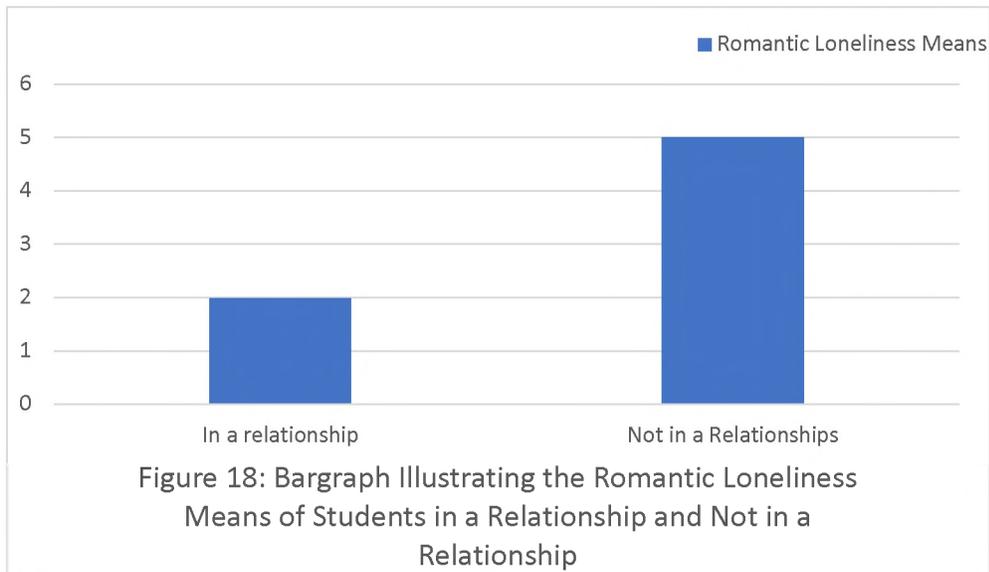
An independent t-test revealed that the belongingness scores for involved students ($M=62.8780$) was significantly higher than uninvolved students ($M=57.4000$) at Time 1, $t(74)=-2.036$, $p<0.05$. Students who were involved at Tyndale had significantly higher belongingness than students who were not involved at Time 1. See Figure 16 for an illustration of the belongingness means of involved students and uninvolved students.



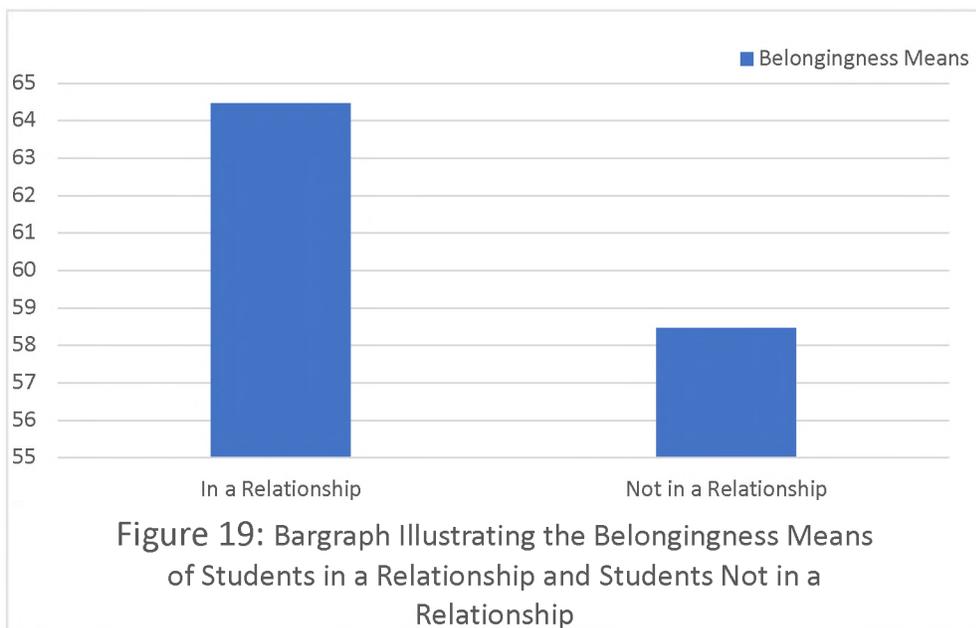
An independent t-test revealed that the EI emotionality scores for students in a relationship ($M= 4.5978$) was significantly lower than students who were not in a relationship ($M=4.9599$) at Time 1, $t(74)= 2.366$, $p< 0.05$. Students who were not in a relationship had significantly higher EI emotionality than students who were in a relationship at Time 1. See Figure 17 for an illustration of the EI emotionality means of students in a relationship and students not in a relationship



An independent t-test revealed that the romantic loneliness scores for students in a relationship ($M= 1.9917$) was significantly lower than students who were not in a relationship ($M=5.0038$) at Time 1, $t(75)= 9.012$, $p< 0.05$. Students who were in a relationship had significantly lower romantic loneliness than students who were not in a relationship at Time 1. See Figure 18 for an illustration of the romantic loneliness means of students in a relationship and students not in a relationship.

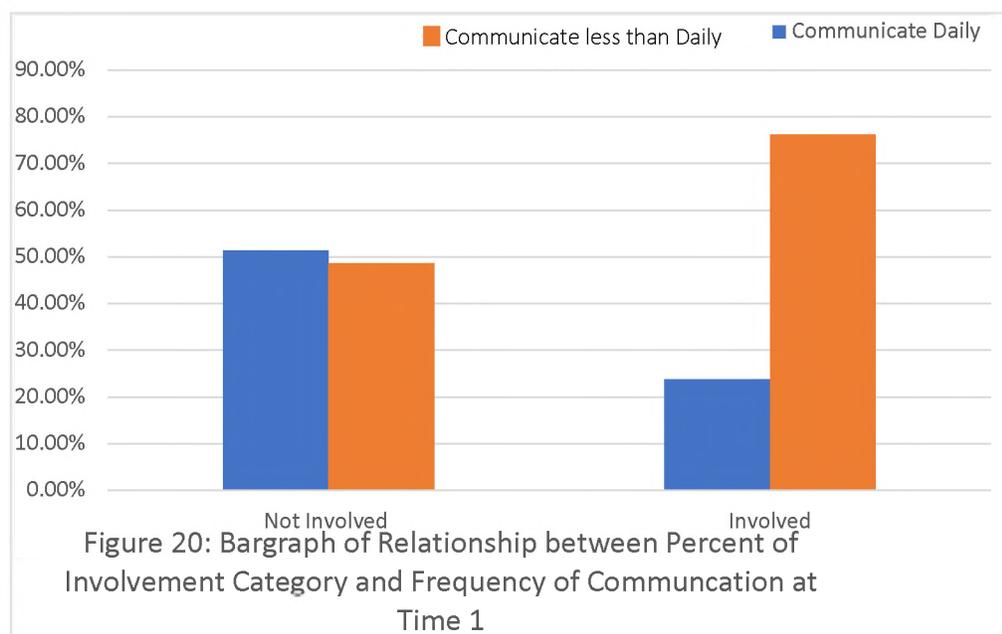


An independent t-test revealed that the belongingness scores for students in a relationship ($M= 64.4583$) was significantly higher than students who were not in a relationship ($M=58.4615$) at Time 1, $t(74)= -2.081$, $p< 0.05$. Students who were in a relationship had significantly higher belongingness than students who were not in a relationship at Time 1. See Figure 19 for an illustration of the belongingness means of students in a relationship and not in a relationship.



There were no significant differences found among variables' means based on gender or frequency of family communication at Time 1.

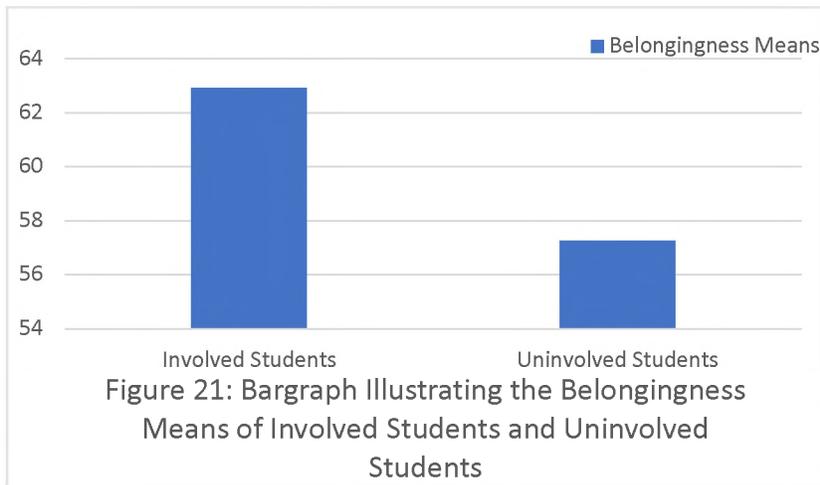
A chi-square cross-tabs test was carried out to examine the relationship at Time 1 between students' frequency of communication with their family and friends from back home (Daily or Less than daily) and student involvement (Involved or Uninvolved). A significant relationship was found, $\chi^2(1, n=119)= 8.670, p < 0.05$. There is a significant relationship between whether students were in communication with their family and friends daily or less than daily and whether or not they were involved at their university. See Figure 20 for the percentages of students who were involved and whether or not they communicated with their family daily.



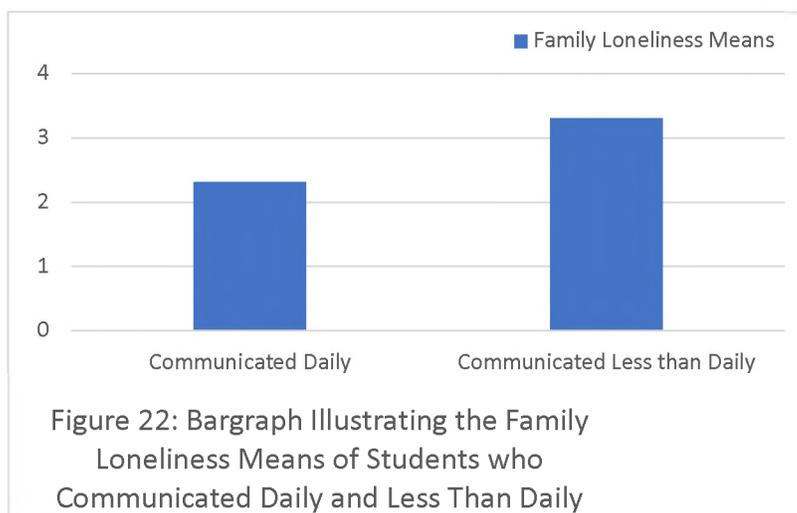
Differences at Time 2

An independent t-test revealed that the belongingness scores for involved students ($M=62.9268$) was significantly higher than uninvolved students ($M=57.2500$) at Time 2, $t(83)=2.007, p < 0.05$. At Time 2, students who were involved at Tyndale had significantly higher

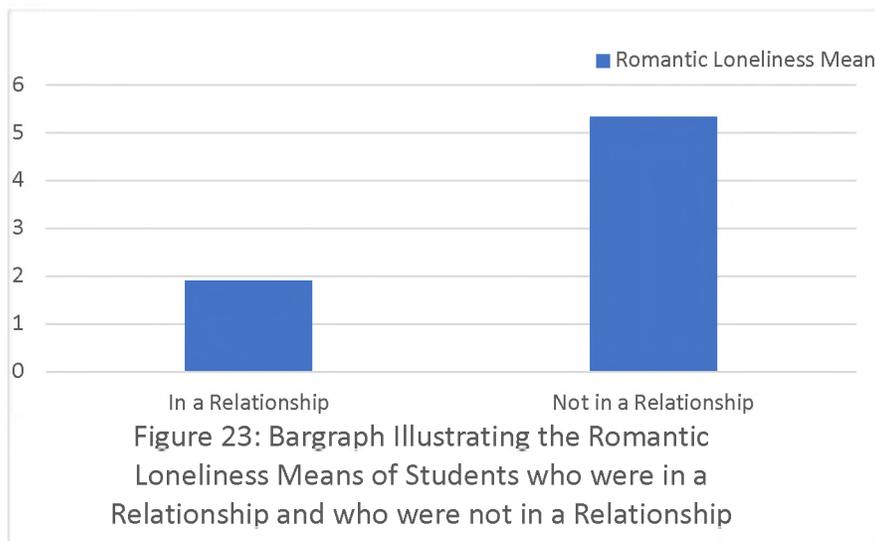
belongingness than students who were not involved. See Figure 21 for an illustration of the belongingness means of involved students and uninvolved students.



An independent t-test revealed that the family loneliness scores for students who communicated with their family and friends from home daily ($M= 2.3176$) was significantly lower than students who communicated less often with family and friends ($M=3.3077$) at Time 2, $t(83)= -2.593, p< 0.05$. At Time 2, students who communicated daily with their family and friends had significantly lower family loneliness than students who communicated less often. See Figure 22 for an illustration of the family loneliness means of students who communicated with their family and those who did not.



An independent t-test revealed that the romantic loneliness scores for students in a relationship ($M= 1.9120$) was significantly lower than students who were not in a relationship ($M=5.3345$) at Time 2, $t(56.033)= -12.844$, $p< 0.05$. At Time 2, students who were in a relationship had significantly lower romantic loneliness at Time 2 than students who were not in a relationship at Time 2. See Figure 23 for an illustration of the romantic loneliness means of students in a relationship and those not in a relationship.



No significant findings were found when Gender at Time 2 was used as the category variable to compare means.

A chi-square cross-tabs test was carried out to examine the relationship at Time 2 between students' frequency of communication with their family and friends from back home (Daily or Less than daily) and student involvement (Involved or Uninvolved). No significant relationship was found, $\chi^2(1, n=86)=0.501$, $p> 0.05$. There is not significant relationship between whether students were in communication with their family and friends daily or less than daily and whether or not they were involved at their university at Time 2.

Discussion

In this study, the triadic relationship between loneliness, emotional intelligence, and belongingness was explored. It was hypothesized that each of the three variables would influence the other variables over time. Thus, loneliness was hypothesized to negatively impact levels of emotional intelligence and belongingness over time. No support for this prediction was found. In general, those who had greater loneliness (whether that was romantic, social, or family loneliness) at Time 1 did not increase or decrease in belongingness or EI at Time 2 more than those who had lower loneliness. There was one exception to this stable pattern, but it ran counter to expectations. Those who had greater romantic loneliness at Time 1 increased more in belongingness than those who had less romantic loneliness at Time 1. This was supported by the finding that the negative relationship between romantic loneliness and belongingness was substantially stronger at Time 1 than Time 2. This finding contradicts what was expected. This increase of belongingness over time could be related to students, regardless of their romantic loneliness, feeling more included and accepted at their university by second semester. If so, this speaks to the warmth of the student body community at Tyndale University College & Seminary. This institution intentionally tries to create an atmosphere of acceptance for its students. And so, if by the second semester students are experiencing higher levels of belonging, this reflects well on the school. Perhaps, also, single students feel more at home in Tyndale's environment, where it would appear that many of the students are single, than they would in an environment that accentuated their singleness. Their singleness could also give them a greater opportunity to embrace the plethora of other relationships opportunities available in an academic context (classmates, roommates, and professors), and so find belongingness.

The other findings of significance in relation to loneliness, were that whether a participant had higher or lower family loneliness or social loneliness was related belongingness. Those who had greater family loneliness or social loneliness had consistently lower belongingness whenever they were measured. This was corroborated by finding that there was a strong negative relationship between family loneliness and belonging at both Time 1 and Time 2 as well as between social loneliness and belongingness at both Time 1 and Time 2. Interestingly, the connection between romantic loneliness and belongingness was not as strong, which supports the idea that participants may be getting something from the community which mediates any connection between romantic loneliness and belongingness. These results suggest that strong social and family connections are more important to finding belonging than a romantic relationship. Thus, to summarize the findings regarding the predicted connections between loneliness and emotional intelligence and belongingness, it appears that this study's findings do not support the hypothesized impact of loneliness on emotional intelligence and belongingness over time. However, they do support the existence of a strong negative relationship between loneliness and belonging.

The second hypothesis predicted that emotional intelligence would predict increasing levels of belongingness over time and decreasing levels of loneliness over time. This study did not support that prediction. However, a strong relationship between EI and almost all of the other variables was found. Whether a student had higher or lower EI was consistently connected to their levels of belongingness, romantic loneliness, and family loneliness. Although it was not connected to social loneliness, there was a strong negative relationship found between EI and social loneliness at the second test time. Perhaps the connection between EI and social loneliness was so much weaker in the first semester because at the beginning of the year, social

loneliness was measured before students had a chance to get to know each other well, so EI was not able to help them build relationships. If this is true, then the second measurement reflected a more stable connection between EI and social loneliness because EI's effects on fostering relationships was more pronounced by second semester. Generally, these findings confirmed that students with high EI also possessed high levels of belongingness and low levels of loneliness. This connection between EI and loneliness is consistent with the literature (Zou, 2014; Shukla & Joshi, R., 2017; Wols et al., 2015). The research on the relationship between EI and belongingness has yet to be explored to the same extent. Thus, this study's finding that a strong positive relationship exists between EI and belongingness is an important contribution to the literature. It suggests that university students who are able to understand their own and others' emotions and respond appropriately achieve higher belonging—possibly because they experience higher peer acceptance. Or, perhaps students with a greater sense of belonging feel more comfortable and accepted and so display greater emotional intelligence than students who do not feel like they belong.

The third hypothesis predicted that high levels of belongingness at Time 1 would be predictive of higher levels of emotional intelligence and lower levels of loneliness at Time 2. No support was found for this hypothesis. Whether students had high or low belongingness was connected with levels of EI and loneliness at Time 1 and Time 2. Those who had high belongingness at Time 1 also had consistently high levels of EI at Time 1 and Time 2 and consistently low levels of loneliness at Time 1 and Time 2. The strong connection between belongingness and loneliness and EI was corroborated by the correlation analyses. Those with a greater sense of belonging tend to be more emotionally intelligent and less lonely.

The study yielded no support for my main hypothesis that there would be changes over time as one variable influenced the other. Instead of the interaction I predicted, the variables remained consistent over time. They were strongly related to each other; however, they did not affect each other so as to cause an increase or decrease in another variable over time. One reason to account for this could be sample size. In this research study there were only 38 students who participated at both study times. Although this is a large enough group to compare, perhaps it was not large enough to display significant results. In the study conducted by Wols et al. (2015), wherein the researchers identified a two-way interaction between EI and loneliness, they tested 196 participants at Time 1 and Time 2. Another difference between my study and the one carried out by Wols et al. (2015) is that they chose to measure ability EI rather than trait EI. I chose to use trait EI as it is a self-report scale and so quite similar to the loneliness and belongingness scales I used. The idea of having all three variables measured in a similar way and in a similar space of time was attractive to me. And more practically, the TEIQ-SF is considerably shorter than the MSCEIT, and it was free to use. Perhaps if ability EI had been measured instead of trait EI, my results would have more closely reflected those of Wols et al. (2015).

In addition to examining the interaction between the main variables, analyses were also carried out to explore the relationship between demographic factors and loneliness, belongingness, and EI. These demographic variables can provide a deeper understanding of the characteristics of this population, possibly clarifying reasons behind the relationships found in testing my hypotheses. School involvement, communication with family and friends, relationship status, and gender were all considered factors that could be related to students' experiences in terms of belongingness, EI, and loneliness.

School involvement, which took many of forms—participating in intramurals, choir, a club, etc.—was related to EI, loneliness, and belongingness. I would expect involvement to be negatively related to loneliness and positively related to belongingness, because students who are involved at school are able to have more meaningful interactions with people, build a social support system, and identify with a group. The reason for the connection between EI and involvement is less apparent, but perhaps students with higher EI find it easier to become involved, and then stay involved because they feel more accepted. At Time 1, students who were involved at Tyndale had significantly higher EI and belongingness than students who were not involved at Time. They also measured higher on the well-being sub-measure of EI. These findings suggest that being involved at school—and perhaps more specifically at a university that intentionally fosters community—has numerous benefits. However, the direction of the relationship should not be assumed. Perhaps students who have higher EI and belongingness are more likely to feel accepted and comfortable in a community and so are more likely to get involved. At Time 2, students who were involved at Tyndale still had significantly higher belongingness than students who were not involved, but, however, they did not have significantly higher EI. This could be that having higher EI gave certain students an edge in first semester—they were more likely to get involved because social interactions were easier for them and they were more accepted by their peers. However, by second semester, students with lower EI also began to get involved, possibly because by second semester they felt more comfortable and accepted.

At Time 1, involved students also had significantly lower romantic loneliness. This finding is interesting, but after examining the demographics—perhaps not very significant. Fifty percent of single students were involved and the other 50% were uninvolved. However, two

thirds of the students who were in a relationship were involved. Thus, it is likely that the reason involved students experienced less romantic loneliness is because a higher percentage of them were in a relationship.

Relationship status was another influential factor. At Time 1 and 2 students who were in a relationship were significantly less romantically lonely and had a significantly higher sense of belonging than those who were not in a relationship. It seems obvious that those who are in a relationship would feel less romantically lonely, and this does tend to be the case (Adamczyk, 2018). However, it is possible for someone to be in a relationship that is unfulfilling, and it is also possible for someone to be single and yet not experience romantic loneliness because they feel fulfilled. Something unexpected was found in relation to relationship status. Students who were single scored higher in the EI sub-category emotionality than students in a relationship. The emotionality sub-scale measures the ability to express emotion and communicate affection for another. The researcher anticipated that if there was a difference between the two groups, those who were in a relationship would score higher in EI. This finding suggests that whether or not someone is in a relationship does not necessarily speak to how emotionally mature or expressive they are.

The frequency with which students communicated with their family and friends from back home was found to be a significant factor at Time 2. Those who communicated daily with their family and friends experienced lower family loneliness than those who communicated less often. This result was expected. It was interesting, however, that this was only a significant finding in the second semester. Possibly, in the first semester more students missed their family and friends—regardless of how often they were in communication with them. Then, by second

semester, they had adjusted to the separation and so the difference between those who communicated often with their family and friends began to show.

No differences were found in loneliness, belongingness, or EI based on gender.

A relationship was found between involvement at Tyndale and the frequency with which students communicated with friends and family. Specifically, those who were not involved at Tyndale were more likely to indicate that they communicated with friends and family on a daily basis. However, among students who were involved at Tyndale, the majority communicated less than daily with their family. This suggests that students who are more involved at Tyndale have less of a need, or perhaps less time, to communicate with their family and friends from home—perhaps because of the new community they are a part of at school. Or it could be that students who choose to communicate less with family and friends from back home have a greater unmet need to belong and thus intentionally engage in community more, in hopes of satisfying that need.

Limitations

The main limitation in this study was the sample size. Although there was a total of 125 participants, only 38 of those participants took part in both test times. With more effort to encourage students who had participated at Time 1 to return at Time 2, perhaps more significant findings would have been found. Retention methods, such as, emailing reminders as the second test time approached, and not just once the week of, could have been implemented. Another limitation in regard to the participants was age; my research specifically focused on university aged students. Perhaps if there had been a greater diversity of age (if more mature students had been included) the results would have reflected the finding that EI tends to increase with age (Veni, Gomes, & Aurora, 2018). However, it could be speculated that mature students could

experience lower belonging and higher loneliness in a university setting where most of their fellow students are considerably younger than them.

Another limitation was the fact that some participants found the romantic loneliness measure confusing. Specifically, a number of single participants expressed that they were confused as to how to respond if they were single to statements such as: I have a romantic partner to whose happiness to contribute. Some answered (1) Strongly Disagree, because they did not have a partner, while others answered (4) Neutral, because they did not believe the question was applicable to their situation. As has been discussed, the relationship between romantic loneliness and belongingness was an important finding of this study—but it is possible that participants' confusion over how to respond to the romantic loneliness inventory impacted the results. In the future, more instructions should be given to participants so that there is less confusion.

Another factor that should be considered is that the second test time fell the week before Valentines Day (a holiday in many countries which celebrates romantic love). Although it is unlikely that this had a meaningful effect on responses, romantic loneliness scores at Time 2 were slightly higher than they were at Time 1 (the difference was not significant). It is possible that because of the approaching holiday that emphasizes romantic love, single students could have been experiencing increased levels of romantic loneliness.

Future Research

I propose that more research should be carried out on the relationship between loneliness, belongingness, and EI. I believe it would be especially beneficial to focus on the relationship between belongingness and EI, since, as of yet, there is a lack of research on the topic. It would be worthwhile to investigate the possibility of a causal relationship between the two. What

exactly is the nature of their relationship? Do those with a greater sense of belonging act more emotionally intelligently? Or do those with higher EI achieve a higher level of belonging? Or, might there be a mutual cause and effect relationship where belongingness fosters EI, and EI, in turn, also fosters belongingness. Depending on the results from these studies, students who have a high unmet need to belong could participate in EI training, which in turn to lead to them gaining a new sense of acceptance and belonging. Or, perhaps students who have lower EI can be counseled to increase their EI by engaging activities and groups that might increase their sense of belonging.

Another consideration for future research would be investigating the relationship between belongingness and ability EI. In the study by Wols et al. (2015) they used an ability EI measure and found that EI and loneliness were mutually influential over time. This study did not find the same results when trait EI was used. An ability EI inventory measures people's ability to understand and respond appropriately to their own and others' emotions, while a trait inventory is a self-report measure of how emotionally intelligent people believe they are. Because it is measured through self-report, trait EI measures may not as easily show growth because it may be harder for someone to accurately perceive changes in their own emotional intelligence. It could be that someone's ability to navigate their own and others' emotions can change more quickly over time than their perception of their ability can change. This study did find a strong relationship between trait EI and belongingness, and so it would be interesting to investigate the relationship between ability EI and belongingness over time and see if the two influence each other.

One last topic for further research would be that of the difference between commuters and residential students. This study did measure how often participants were in contact with and

how often they saw their family and friends from back home. However, the demographic questionnaire did not include a question about whether the students lived on campus or not. Although it is likely that participants who responded that they saw their family every day were likely commuters, that does not mean that all commuters see their family every day. Many live off campus with a group of other students. A study that directly measures the differences of belongingness, loneliness, and EI among commuters and residential students would be especially relevant for university student development services.

In conclusion, emotional intelligence, belongingness, and loneliness are all strongly related variables, and, according to the findings of this study, their relation tends to be consistent over time. These variables can be impacted in the university environment by factors such as involvement at school, communication with family and friends, and relationship status. Further research into the interrelationships between these variables may help shed light on the possibility of reciprocal relationships existing between EI, belongingness, and loneliness and how other extraneous factors mediate these relationships.

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Appendix A

Background Information Questionnaire

1. What is your age? _____
2. Which ethnicity do you predominately associate with?
 - (a) Arabic
 - (b) Black
 - (c) Caucasian
 - (d) Chinese
 - (e) Filipino
 - (f) Indigenous
 - (g) Latin American
 - (h) South Asian
 - (i) Other. Please specify, _____.
3. What is your gender?
 - (a) Female
 - (b) Male
 - (c) Other. Please specify, _____.
4. Which year of studying at Tyndale are you in?
 - (a) year 1
 - (b) year 2
 - (c) year 3
 - (d) year 4
 - (e) year 5 or more
5. Are you involved in student leadership at Tyndale?
 - (a) Yes
 - (b) NoIf so, what is your position this year? _____
6. Are you involved or will you be involved in any extra-curricular activities at Tyndale?
 - (a) competitive sports team
 - (b) intermural sports
 - (c) choir
 - (d) dance group
 - (e) worship team
 - (f) drama group
 - (g) Dungeons and Dragons group

(h) I am and will not be involved in any extra-curricular activities this year

(i) I am involved in another area. Please specific, _____

7. How many times will you see you family over this school year?

(a) Daily or almost daily

(b) Weekly

(c) Bi-weekly

(d) Once a month

(e) Just on holidays (reading break, thanksgiving, family day...)

(f) Just over the Christmas break

(g) Not at all

(h) Other. Please specify, _____

8. How often will you be in contact with your family or friends from back home?

(a) Daily or almost daily

(b) Weekly

(c) Bi-weekly

(d) Once a month

(e) Not at all

(f) Other. Please specify, _____

9. What is your relationship status?

(a) Single

(b) Dating

(c) Married

(d) Divorced

(e) Other. Please specify, _____

Appendix B

Social and Emotional Loneliness Scale for Adults (SELSA-S)

Instructions: Please answer each statement below by putting a circle around the number that best reflect your degree of agreement or disagreement with that statement. Do not think too long about the exact meaning of the statements. Work quickly and try to answer as accurately as possible. There are no right or wrong answers. There are seven possible response to each statement ranging from ‘Strongly Disagree’ (number 1) to ‘Strongly Agree’ (number 7).

1 2 3 4 5 6 7
Strongly Disagree **Strongly Agree**

1. I feel alone when I am with my family.	1	2	3	4	5	6	7
2. I feel part of a group of friends.	1	2	3	4	5	6	7
3. I have a romantic partner with whom I share my most intimate thoughts and feelings.	1	2	3	4	5	6	7
4. There is no one in my family I can depend on for support and encouragement, but I wish there was.	1	2	3	4	5	6	7
5. My friends understand my motives and reasoning.	1	2	3	4	5	6	7
6. I have a romantic partner with whom I share my most intimate thoughts and feelings.	1	2	3	4	5	6	7
7. I don't have any friends who share my views, but I wish I did.	1	2	3	4	5	6	7
8. I feel close to my family.	1	2	3	4	5	6	7
9. I am able to depend on my friends for help.	1	2	3	4	5	6	7
10. I wish I had a more satisfying romantic relationship.	1	2	3	4	5	6	7
11. I feel part of my family.	1	2	3	4	5	6	7
12. My family really cares about me.	1	2	3	4	5	6	7
13. I do not have any friends who understand me, but I wish I did.	1	2	3	4	5	6	7
14. I have a romantic partner to whose happiness to contribute.	1	2	3	4	5	6	7
15. I have an unmet need for a close romantic relationship.	1	2	3	4	5	6	7

Appendix C

TEIQue-SF

Instructions: Please answer each statement below by putting a circle around the number that best reflects your degree of agreement or disagreement with that statement. Do not think too long about the exact meaning of the statements. Work quickly and try to answer as accurately as possible. There are no right or wrong answers. There are seven possible responses to each statement ranging from ‘Completely Disagree’ (number 1) to ‘Completely Agree’ (number 7).

1 2 3 4 5 6 7
Completely Disagree **Completely Agree**

1. Expressing my emotions with words is not a problem for me.	1	2	3	4	5	6	7
2. I often find it difficult to see things from another person’s viewpoint.	1	2	3	4	5	6	7
3. On the whole, I’m a highly motivated person.	1	2	3	4	5	6	7
4. I usually find it difficult to regulate my emotions.	1	2	3	4	5	6	7
5. I generally don’t find life enjoyable.	1	2	3	4	5	6	7
6. I can deal effectively with people.	1	2	3	4	5	6	7
7. I tend to change my mind frequently.	1	2	3	4	5	6	7
8. Many times, I can’t figure out what emotion I’m feeling.	1	2	3	4	5	6	7
9. I feel that I have a number of good qualities.	1	2	3	4	5	6	7
10. I often find it difficult to stand up for my rights.	1	2	3	4	5	6	7
11. I’m usually able to influence the way other people feel.	1	2	3	4	5	6	7
12. On the whole, I have a gloomy perspective on most things.	1	2	3	4	5	6	7
13. Those close to me often complain that I don’t treat them right.	1	2	3	4	5	6	7
14. I often find it difficult to adjust my life according to the circumstances.	1	2	3	4	5	6	7
15. On the whole, I’m able to deal with stress.	1	2	3	4	5	6	7
16. I often find it difficult to show my affection to those close to me.	1	2	3	4	5	6	7
17. I’m normally able to “get into someone’s shoes” and experience their emotions.	1	2	3	4	5	6	7
18. I normally find it difficult to keep myself motivated.	1	2	3	4	5	6	7
19. I’m usually able to find ways to control my emotions when I want to.	1	2	3	4	5	6	7
20. On the whole, I’m pleased with my life.	1	2	3	4	5	6	7
21. I would describe myself as a good negotiator.	1	2	3	4	5	6	7
22. I tend to get involved in things I later wish I could get out of.	1	2	3	4	5	6	7

23. I often pause and think about my feelings.	1	2	3	4	5	6	7
24. I believe I'm full of personal strengths.	1	2	3	4	5	6	7
25. I tend to "back down" even if I know I'm right.	1	2	3	4	5	6	7
26. I don't seem to have any power at all over other people's feelings.	1	2	3	4	5	6	7
27. I generally believe that things will work out fine in my life.	1	2	3	4	5	6	7
28. I find it difficult to bond well even with those close to me.	1	2	3	4	5	6	7
29. Generally, I'm able to adapt to new environments.	1	2	3	4	5	6	7
30. Others admire me for being relaxed.	1	2	3	4	5	6	7

Trait Emotional Intelligence Questionnaire – Short Form (TEIQue-SF). This 30-item form includes two items from each of the 15 facets of the TEIQue. Items were selected primarily on the basis of their correlations with the corresponding total facet scores, which ensured broad coverage of the sampling domain of the construct. The –SF can be used in research designs with limited experimental time or wherein trait EI is a peripheral variable. Although it is possible to derive from it scores on the four trait EI factors, in addition to the global score, these tend to have somewhat lower internal consistencies than in the full form of the inventory. The –SF does not yield scores on the 15 trait EI facets.

Scoring information for the TEIQue-SF is available at:

<http://www.psychometriclab.com/Home/Default/14> Please note that we cannot provide any advice on how to run the syntax in SPSS or other statistical software.

Please make sure you read the FAQ section at

<http://www.psychometriclab.com/Home/Default/18>. In particular, note that we do not provide free information regarding norms or free feedback reports. Norms and reports are available for a fee (email admin@teique.com for quotes).

Reference for the TEIQue-SF: Petrides, K. V. (2009). Psychometric properties of the Trait Emotional Intelligence Questionnaire. In C. Stough, D. H. Saklofske, and J. D. Parker, *Advances in the assessment of emotional intelligence*. New York: Springer. DOI: 10.1007/978-0-387-88370-0_5

For more information about the trait emotional intelligence research program go to:

www.psychometriclab.com

Please note that any and all commercial use of this instrument, or any adapted, modified, or derivative works thereof, is strictly prohibited.

Appendix D

General Belongingness Scale (GBS)

Instructions: Please answer each statement below by putting a circle around the number that best reflect your degree of agreement or disagreement with that statement. Do not think too long about the exact meaning of the statements. Work quickly and try to answer as accurately as possible. There are no right or wrong answers. There are seven possible response to each statement ranging from ‘Strongly Disagree’ (number 1) to ‘Strongly Agree’ (number 7).

1 2 3 4 5 6 7
Strongly Disagree **Strongly Agree**

1. When I am with other people, I feel included	1	2	3	4	5	6	7
2. I have close bonds with family and friends	1	2	3	4	5	6	7
3. I feel like an outsider	1	2	3	4	5	6	7
4. I feel as if people do not care about me	1	2	3	4	5	6	7
5. I feel accepted by others	1	2	3	4	5	6	7
6. Because I do not belong, I feel distant during the holiday season	1	2	3	4	5	6	7
7. I feel isolated from the rest of the world	1	2	3	4	5	6	7
8. I have a sense of belonging	1	2	3	4	5	6	7
9. When I am with other people, I feel like a stranger	1	2	3	4	5	6	7
10. I have a place at the table with others	1	2	3	4	5	6	7
11. I feel connected with others	1	2	3	4	5	6	7
12. Friends and family do not involve me in their plans	1	2	3	4	5	6	7

Appendix E

Project Title: The Triadic Relationship of Loneliness, Belongingness, and Emotional Intelligence

Name of Investigator: Mary Kate Looby (student)

How to contact investigator: marykate.looby@gmail.com

Faculty Supervisor: Dr. Nancy Ross (Psychology department)

How to contact the faculty supervisor: nross@tyndale.ca

I voluntarily agree to participate in this study. I understand that I can terminate my participation at any point without penalty and that termination will in no way jeopardize my standing at Tyndale University College and Seminary. The investigation has been described to me by the experimenter, who has answered all my questions. I understand that I will be asked to complete an emotional intelligence measure, a belongingness measure, a loneliness measure, and a background questionnaire and that this process should take around 30 minutes. I understand that there are risks associated with this study, such as fatigue and mild psychological distress, but, however, that the study has been approved by the REB at Tyndale. I understand that I will be contacted next semester about taking part in the second part of the research study. I also understand that the data from this study may be used for future research.

My participation is subject to the following conditions:

That adequate safeguards will be provided to maintain the privacy and confidentiality of my responses.

That my name and my family's name will not be used to ultimately identify said material; instead, code numbers will be used.

That my individual scores will not be reported; that data will be reported as aggregate or group

scores.

Please contact the Research Ethics Board if you have questions about research participants'

rights by email: reb@tyndale.ca

(participants' signature) (investigator's signature) (date)