Parental Status in Correlation to Undergraduate Students' Self-Reported Anxiety Ratings

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Abstract

The prevalence of anxiety in undergraduate students has increased in recent years and is widely acknowledged by faculty and students. A variety of factors have been found to be correlated to college students' anxiety, including academic difficulties, home/work setting, social pressure, and traumatic life events. Additionally, the prevalence of parental divorce has also increased. While previous research provides information on the effects that parental divorce has on children and adolescents, no research has been conducted on if these mental health difficulties persist into early adulthood. Furthermore, no distinctions have been made between parental divorce and parental separation. In the present study, the researcher examined parental divorce and separation rates in correlation to undergraduate students' self-reported anxiety ratings. Undergraduate students who are enrolled at Northern Kentucky University (n = 70) participated in an online self-reported posttest-only study, where they were asked a series of questions regarding their family history and then were asked to complete the Hamilton Anxiety Rating Scale (HAM-A). The results showed that students who reported witnessing at least one parental separation during childhood had significantly higher anxiety ratings than students who reported not witnessing a parental separation; and students who reported witnessing a parental separation, but not a divorce, had significantly higher anxiety ratings than students who reported witnessing neither. These results suggest that parental separation has a similar correlation to anxiety symptoms in the same way that parental divorce does.

Introduction

In recent decades, parental divorce is becoming recognized as a traumatic event that can cause pressure on children (Shafer et al., 2017). An estimated 50% of all children in the United States will witness the end of a parent's marriage (Owenby, 2018). Pressure and/or stress resulting from family separation may contribute to the development of mental health issues in children. Parental divorce is a common event that happens during one's childhood. In parallel, anxiety is a normal human emotion that many people face, some more than others. Recent studies show that generalized anxiety disorder affects 6.8 million adults, or 3.1% of the U.S. population, yet only 43.2% of those diagnosed are receiving adequate treatment (ADAA, 2022). Even worse, social anxiety disorder affects approximately 15 million adults, or 7.1% of the U.S. population (ADAA, 2022). Approximately 36% of people with social anxiety disorder report-experiencing symptoms for 10 or more years before seeking help (ADAA, 2022). Furthermore, studies show that 44% of college students experience moderate to severe anxiety (Lee, 2021). In particular, female, rural, low-income, and academically underperforming students are more vulnerable to suffering a form of anxiety (Lee, 2021).

Parental Divorce

Parental divorce can change children's lives in many ways, such as introducing sudden confusion and chaos during sensitive developmental stages. A child that comes from a divorced family is exposed to more stressors compared to those that come from a complete family (Amato & Cheadle, 2005). Beyond childhood, parental divorce can negatively affect individuals throughout the rest of their lives regardless of age (Ross & Miller, 2009). Negative effects of parental divorce that emerge in childhood can last into adulthood (Huurre et al., 2006). According to several studies, children and adolescents with divorced parents have a higher risk of experiencing emotional and behavioral problems and decreased academic performance, measured in children until the age of 18 (Tebeka et al., 2016). This suggests that the emotional and behavioral problems one faces in childhood could possibly last into early or late adulthood.

Anxiety

Anxiety is a subjective feeling of tension, apprehension, nervousness, and worry associated with arousal of the nervous system (Spielberger, 1983). Anxiety is among the normal emotions that humans face. Anxiety rates have significantly increased since 2016, specifically in post-secondary student populations (Marcotte & Lévesque, 2018). The emerging adulthood stage of life, proposed by Jeffery Arnett, is when most students pursue post-secondary education, is correlated with the age of peak onset for mental health problems, including anxiety (Reavley & Jorm, 2010). Students and educators readily acknowledge the prevalence of anxiety among university students. Students with anxiety are more likely to exhibit a passive attitude in their studies, such as lack of interest in learning and poor performance on assignments and exams (Ruffins, 2007). Anxiety is a mental health issue that many college students struggle with. There are many recognizing factors that can contribute to students' anxiety, such as academic pressure, home and/or work setting, and new social settings. Issues such as parental status that are developed in early childhood and adolescence can be contributing factors that persist into early adulthood, and are correlated with college students' anxiety.

Proposing a new angle

Previous research has suggested that the effects of parental divorce may be long-lasting into adulthood, but not much is known about what emotional disturbances this consists of. Furthermore, no research has discussed if these emotional disturbances differ between the children of divorced parents and the children of separated parents. This calls for speculation: Does witnessing one or more parental separations affect children the same way parental divorce does? Are such effects also long-lasting? Does one of the emotional disturbances include anxiety symptoms in college students?

This study aimed to investigate whether parental divorce or parental separation is correlated with college students' anxiety levels. Additionally, this study helped gain insight on if parental separation has a similar relationship to mental health issues as parental divorce does, and if this is observable in early adulthood. With parental divorce being associated with negative behavioral and emotional outcomes in young adults and anxiety increasing along with divorce rates, My goal was to determine whether parental divorce and separation are correlated to undergraduates' self-reported anxiety ratings. This study tested the hypothesis that parental divorce and separation are correlated to one's anxiety, measured with the Hamilton Anxiety Rating Scale.

Methods

The two conceptual variables in this observational, posttest-only study, were parental relationship status and anxiety. Both variables were measured through a self-reported survey. There were no independent variables in this study. Parental divorce was operationalized by having participants answer questions about their family history. Some of the questions include: If their parents are (or have been) divorced, if they have witnessed a separation between their parents before, age at which their parents got divorced and/or separated, etc. Parental separation

and divorce were distinguished by defining separation as witnessing a parent leave the household for periods of time, versus defining divorce as a legal separation by court of law. Anxiety was operationalized by having participants complete the Hamilton Anxiety Rating Scale (a five point Likert scale used to measure the severity of one's anxiety).

Participants

The participant population for this study was undergraduate students attending Northern Kentucky University, between the ages 18-26. Participants had between March 13th-April 17th to participate and were allowed to partake in this study at any given location. The age requirement was between 18-30 years old because the goal of this study was to observe how parental divorce/separated might have long-lasting effects from early childhood to young adulthood. Out of the 78 participants, 70 completed the survey all the way through and were used for the data analysis. The overall participant demographics for this study consisted of 17 males, 45 females, and 8 who identified as other; the mean age of participants was 20 (SD = 1.8); 53 were White, 4 Black, 2 Asian, 5 Latinx, 1 Pacific Islander/Hawaiian Native, and 5 other.

Materials

The survey questions used to measure parental divorce and separation rates were created with consideration for participants that may still live with their family or were being raised by both parents despite being divorced/separation, age at which participants' parents were divorced, and how many divorces or separations they have witnessed (if any). To ensure the reliability and validity of the questions, any participants' answers that were inconsistent were deleted prior to data analysis. To decide what answers were inaccurate, the researcher evaluated multiple levels of one specific question. If the answer for one level did not align with another level of the same question, then the data for that participant was invalid, and therefore deleted prior to the analysis.

The survey questions used to measure the severity of one's anxiety symptoms were based on the Hamilton Anxiety Rating Scale. This well-known scale has been used by many practitioners in the process of psychological evaluations, and contains 14 individual items, each containing a five-point Likert scale. It was used to measure the severity of participants' anxiety, rather than the diagnosis of anxiety. In this study, the scale was given in self-reported form. The Hamilton Anxiety Rating Scale has shown to be reliable throughout numerous evaluations done by various clinicians (Clark, 1994).

Procedures

This study took place as an online external study via SONA, which is an online system in which many institutional research studies are conducted. Once in SONA, if participants chose to take the survey they were redirected to a platform called Qualtrics to access it. Participants were not asked to partake in this study and were gathered from completely voluntary participation. All participants who chose to partake in this study were SONA account holders. If participants chose to participate in this study, they were initially provided with an informed consent online document. The informed consent document gave a brief description of what the study was going to be asking. If participants chose not to consent to participate, they were redirected to the end of the survey. If participants consented to the study, they were next presented with the demographics portion of the survey. The questions concerning demographics included age, gender identity, and race. Next, they were asked a series of questions regarding their family history. Finally, participants were asked to rank (0-5; 0 being non-existent and 5 being extremely severe) their various feelings related to the severity of their anxiety levels. All participants and their answers remained anonymous. After completing the questions, they were directed to the debriefing page that provided a more detailed description of the study goals and how the researcher measured the two conceptual variables. This study was exempt from Institutional Review Board (IRB) approval via exemption #1, conducted in an educational setting.

Table I. Descrpitive Statistics for HAM-A Scores in Undergraduate Students Based on Parental Status

Parental Status	N	Mean	Standard deviation
Witnessed Divorce	26	22	10
No Divorce	44	17	12
Witnessed Separation	29	23	11
No Separation	41	16	10

Total N = 70; some participants overlapped in parental status groups. Anxiety scores were totaled for analysis; each of the 14 items were scored 0 (not present) to 5 (very severe).

Analytic Strategy

For the primary research hypothesis, the association between parental divorce/separation rates and anxiety ratings in undergraduate students, the researcher measured the association by using two separate independent sample t-tests. These tests were run independently from one another. For the first test, parental divorce was the categorical variable, with two levels, and anxiety levels were quantitative. For the second test, parental separation was the categorical variable, with two levels, and anxiety levels were quantitative. The threshold for statistical significance was $p < 0.05$. The data depicted from both tests are displayed as the mean and standard deviation; parental divorce (yes or no) compared to anxiety rates and parental separation (yes or no) compared to anxiety rates. For the exploratory hypothesis, examining the difference in HAM-A scores of all four groups (participants who reported witnessing a parental divorce and separation; participants who reported witnessing a divorce, but no separation; participants who reported witnessing a separation, but no divorce; and participants who reported witnessing neither), the researcher measured this comparison by running a two-way ANOVA test. The threshold for statistical significance and the data depicted from this test are the same as mentioned above. Microsoft Excel® and Graph Pad Prism® were used to analyze all data.

Results

To decide what answers were accurate and which were inaccurate, the researcher evaluated multiple levels of one specific question. If the answers for one level did not align with another level of the same question, then the data for the participant was invalid. For example, one participant answered that they had never witnessed parental separation in their household, but then answered that they were four years old when they witnessed the separation. This participant's answers were considered inaccurate and were deleted. A total of eight participants' (10.2%) answers were removed prior to analyzing the data. Three were due to leaving too many answers blank. The other five participant's answers were removed from the data due to filling in inappropriate answers that did not align with what the questions were asking. The data was cleaned up prior to analysis using Excel®. Total HAM-A scores were evaluated based on the grouping variables of parental divorce and parental separation. See Table 1 for the descriptive statistics for HAM-A scores based on each four categories of parental status that were analyzed.

First, we analyzed the anxiety ratings of students who reported having witnessed a divorce within their household, compared to the anxiety ratings of students who reported not having witnessed a divorce within their household (independent of witnessing a separation). These data were analyzed by looking at descriptive statistics and an independent samples t-test. The

data were normally distributed according to the Kolmogorov-Smirnov test (a normality test used for sample sizes larger than 50). The results showed no significant difference between anxiety ratings of students who have witnessed a divorce ($M = 22$, $SD = 10$) compared to students who have not witnessed a divorce ($M = 17$, $SD = 12$. $t(68) = 1.64$, $p = 0.1065$; see Fig. 1).
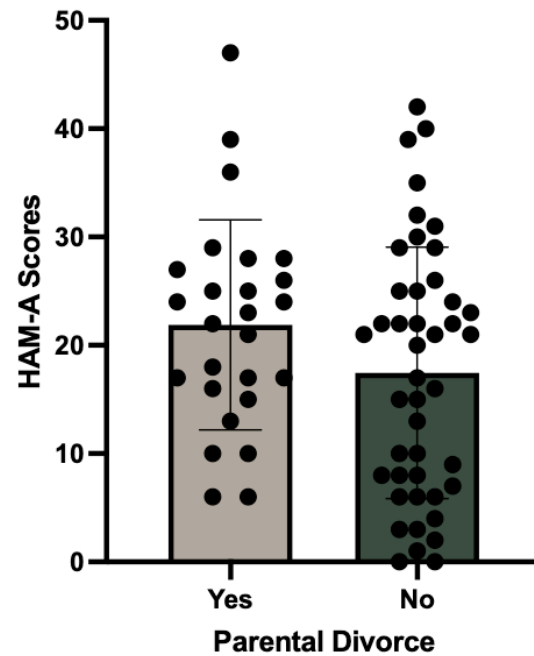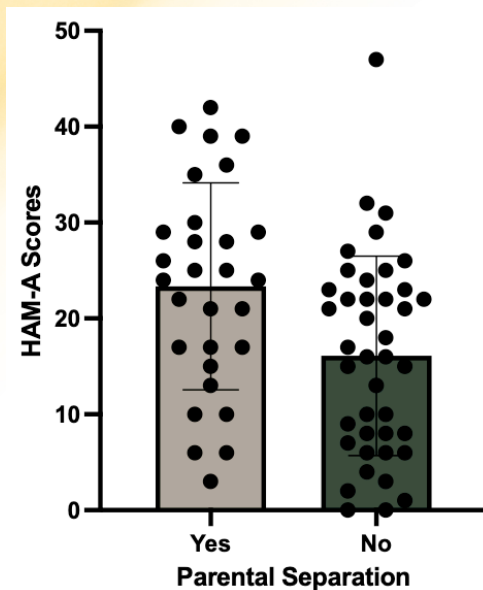

Figure 1. Students' anxiety ratings in comparison to parental divorce. Students who have witnessed a divorce ($M = 22$, $SD = 10$), compared to students who have not witnessed a divorce ($M = 17$, $SD = 12$). $t(68) = 1.64$, $p = 0.1065$.

Next, we analyzed the anxiety ratings of students who reported having witnessed a parental separation within their household, compared to students who reported not having witnessed a parental separation in their household (independent of witnessing a divorce). We analyzed this data the same way as the data above, using descriptive statistics and an independent samples t-test. These data were normally distributed according to the Kolmogorov-Smirnov test. The results showed a significant difference between the anxiety rates of students who have witnessed a parental separation ($M = 23$, $SD = 11$), compared to students who have not witnessed a parental separation ($M = 16$, $SD = 10$, $t(68) = 2.83$, $p = 0.0061$; see Fig. 2).

Lastly, the researcher tested an exploratory hypothesis to determine if anxiety ratings varied based on main effect for parental divorce, parental separation, or an interaction between the two (see Table 2 for descriptive statistics of the four groups). To analyze these data, a two-way ANOVA test was run. There was no significant main effect for parental divorce ($F_{(1, 17)} = 0.3366$, $p = 0.5694$) and no significant main effect for
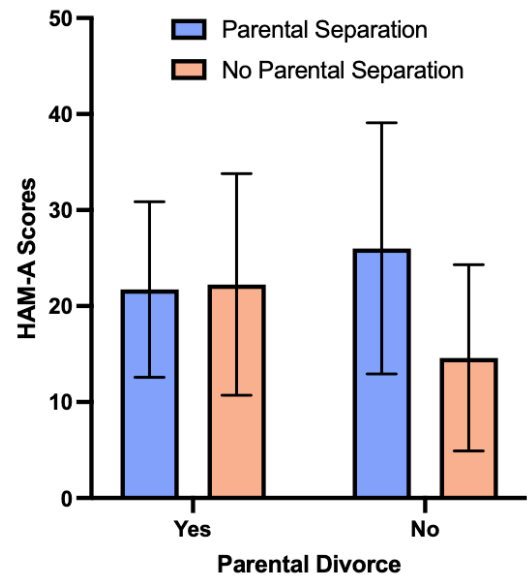
Figure 2. Students' anxiety ratings in comparison to parental separations. Students who have witnessed a parental separation ($M = 23$, $SD = 11$), compared to students who have not witnessed a parental separation ($M = 16$, $SD = 10$). $t(68) = 2.83$, $p = 0.0061$.

Figure 3. Students' anxiety ratings in comparison to both parental divorce and separation. Students who had reported witnessing a parental separation, but not a parental divorce ($M = 26$, $SD = 13$) had significantly higher anxiety ratings than students who had reported not witnessing a parental separation, nor parental divorce ($M = 15$, $SD = 10$), $p < 0.05$.

parental separation ($F_{(1, 49)} = 3.672$, $p = 0.0612$). However, there was a significant interaction between the two ($F_{(1, 17)} = 4.451$, $p = 0.05$). With results showing a significant interaction, a post hoc Sidak test was run for further analysis. The Sidak test found that students who had reported witnessing a parental separation, but not a parental divorce ($M = 26$, $SD = 13$) had significantly higher anxiety ratings than students who had reported not witnessing a parental separation, nor parental divorce ($M = 15$, $SD = 10$, $p < 0.05$, see Fig. 3). This effect was not significant for students who had witnessed a parental divorce.

Discussion

In the present study, it was predicted that there would be a correlation between students' self-reported anxiety levels and parental divorce/separation rates. The results showed that there was a significant difference between the anxiety ratings of students who had witnessed a parental separation, compared to the students who had not. Students who had reported witnessing a parental separation had significantly higher anxiety ratings than students who reported not witnessing a separation. Furthermore, the results showed that there was a significant interaction between parental divorce and parental separation. Students who had witnessed a separation, but not a divorce, had significantly higher anxiety levels than students who had witnessed neither. These results support the hypothesis that parental separation is correlated with students'

anxiety ratings and the exploratory hypothesis that parental separation and divorce have an interaction effect in how they relate to students' anxiety ratings.

This study aligns with previous research on parental divorce and individuals' mental health outcomes throughout the years, and goes a step further by accounting for how parental separation relates to participants' anxiety ratings. It specifically focused on students ranging from 18-26 years of age to look at how parental status relates to anxiety throughout early adulthood. Previous studies revealed that parental divorce is associated with negative behavioral outcomes in individuals that can last throughout the rest of their lives regardless of age (Ross & Miller, 2009). Even the negative outcomes felt in childhood that likely relate to parental divorce can last into adulthood (Huurre et al., 2006). Although little to no research has been conducted on if there are any mental health outcomes that are related to parental separation, many individuals witness their parents and/or guardians separate one or more times within their childhood years. This study's results proposed an idea that parental separation may be more difficult on the children, and the mental health outcomes that one faces in childhood could be long-lasting into early adulthood.

A limitation to this study was the lack of resources resulting in participants having to perform a self-reported anxiety rating,

Table2. Descrpitive Statistics for HAM-A Scores in Undergraduate Students Based on Parental Status

Parental Status	N	Mean	Standard Deviation
Witnessed Divorce and Separation	18	22	9
Witnessed Divorce but no Separation	8	22	12
Witnessed Separation but no Divorce	11	26	13
Witnessed Neither	33	15	10

Total *N* = 70; no participants overlapped in parental status groups. Anxiety scores were totaled for analysis; each of the 14 items were scored 0 (not present) to 5 (very severe).

leading to a possibility of bias in their answers, which could have possibly affected some of the results. Another limitation is that 44 of the participants who volunteered to partake in this study did not witness a parental divorce, compared to the 26 participants who did witness a parental divorce. This largely uneven number of students could have possibly altered the results due to a large skew in means. For future studies, an increase in the measurement precision of the divorce group is recommended by gathering the same number of participants for both groups of parental status, and then examining their anxiety levels.

The large sample size strengthened statistical validity and allowed us to make a valuable comparison between groups. The statistical tests that were used were appropriate for these comparisons, and we were able to detect differences between groups. For future studies, statistical validity could possibly be improved by recruiting an equal number of participants for each parental status group.

As for external validity, these results may generalize to a larger student or early adult population. However, this could be limited by the geographical location of participants, since all participants are from around the same general area. Despite participants being raised in a variety of locations, all participants are (or have been) students at Northern Kentucky University which could possibly have an effect on their anxiety levels.

Construct validity was enhanced by using the Hamilton Anxiety Rating Scale, but could be improved by having a professional evaluate the participants in person, instead of having the participants evaluate themselves. It would be interesting to do an in-person observational study of anxiety based on parental status and evaluate how those results align with the online self-report data obtained in the present study. Going a step further, one could study individuals who have been diagnosed with one or more anxiety disorders, and then evaluate their anxiety

levels in relation to their parents' marital status throughout the years.

Internal validity in this posttest-only, observational study can be questioned with reasonable concern because there was no process in which confounds were eliminated. Despite the results suggesting that parental status is correlated to students' anxiety levels, there are many possible confounds that could alter one's anxiety ratings. All the participants are active college students who are in the midst of their spring semester of classes. Stress from classes, home/work life, or even complicated versus easy divorces/separations could be possible confounds in this study. For future research, reporting participants' stress levels in relation to their anxiety ratings could improve internal validity. Finally, other aspects of parenting styles within parental relationships that ultimately fail could explain the results beyond witnessing the separation.

This study was meant to determine if there was a correlation between parental status and anxiety ratings in young adults, but for a more detailed inspection, one should consider replicating the study under closed observation. This could possibly account for factors other than parental status that may relate to individuals' anxiety levels. With a more structured observational study, one can eliminate, or even study, a number of confounds that might possibly have an effect on the anxiety levels of participants. For example, a case study on a specific individual, or a longitudinal study on a group of people who suffer from one or more anxiety disorders, could allow for a more detailed insight into the factor that parental status plays in relation to anxiety. This could help us evaluate whether the separation is the primary factor, or if there are other parental or personal attributes that are playing a larger role.

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