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Family and Friendship Informal Support Networks and Social Anxiety Disorder among African Americans and Black Caribbeans

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Introduction

Anxiety disorders are the most pervasive class of mental health conditions, with 28.8% of individuals experiencing at least one anxiety disorder over the lifespan [1]. Social Anxiety Disorder (SAD), one of the most common anxiety disorders, is characterized by fear and/or avoidance of social or performance situations [2]. Individuals with this condition are concerned that they will say or do something that will result in humiliation or embarrassment; these fears can be so severe that socially anxious individuals avoid most social encounters or endure interpersonal situations with extreme discomfort [3]. SAD was once largely ignored by the psychiatric community [4], but has more recently garnered attention as an impairing but treatable condition [5].

While persons with SAD report problems on a wide variety of dimensions, from employment to educational impairment [6], problems in interpersonal relationships have been consistently reported in the literature as one of the hallmarks of SAD [7,8]. More specifically, individuals with social anxiety are more likely to be single or divorced, have fewer friends, and report less satisfying and less frequent dating and sexual relationships [9,10]. Furthermore, although anxiety disorders are more generally associated with relationship problems, people with SAD are even less likely to marry than individuals with other anxiety disorders, perhaps due in part to problems in interpersonal skills [11]. The literature also suggests that having SAD is particularly associated with social difficulties, as SAD predicts having friendship problems at rates over and above other mood and anxiety disorders [12].

Although it is clear that having SAD is related to poorer family and friendship relationships, additional research should examine whether different components of these interactions are particularly associated with SAD. In other words, while research indicates that poor

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relationships in general are associated with SAD, less work has been done on whether certain aspects of informal social support networks (e.g., closeness, amount of contact) relate to SAD. This distinction is important, as identifying specific relationship factors may provide potential intervention targets.

SAD and Black Americans

Although the literature demonstrates that SAD significantly impacts social functioning, this association has not been well-established for racial-ethnic minority groups. This is a crucial distinction given that mental health disorders affect diverse racial-ethnic groups differently, prompting a recent focus on addressing race-ethnic disparities in mental health care in the United States [13,14]. Research in the mental health realm indicates that U.S. Black populations tend to have lower prevalence rates of mood and anxiety disorders compared to non-Hispanic whites [15,16]. However, while mental health disorders are less prevalent in minority populations, the course of the disorder tends to be more severe and persistent, indicating the complexity of investigating mental health conditions among minority groups [15,17,16].

A small group of studies indicate that this pattern of lower prevalence but increased severity and persistence also occurs among African Americans and Black Caribbeans with SAD [15,17]. Studies based on data from the National Survey of American Life (NSAL), the most comprehensive study of Black psychopathology to-date, and the National Co-morbidity Study- Replication (NCS-R), a nationally representative study of psychiatric disorders, indicate 12-month prevalence rates of 4.6%, 4.7% and 7.1% among African Americans, Black Caribbeans and non-Hispanic whites, respectively [17,18]. Although national prevalence rates were lower than for non-Hispanic whites, anxious African Americans and Black Caribbeans reported higher levels of functional impairment, as defined by the World Health Organization Disability Assessment Scale (WHO-DAS-III). These impairments were clearly reflected in the relationship realm, as individuals reported lower social functioning and increased family burden [17]. These findings indicate that more work needs to be done to understand how social support relates to the etiology and pathology of SAD in these groups.

Social Support and Mental Health for Black Americans

The term, informal social support, refers to any form of assistance from members of an individual's social network, such as family, friends and neighbors [19]. Informal social support is distinct from the types of assistance and services that may be provided by public or private health and social welfare organizations and agencies. Prior research indicates that informal support networks are highly significant for Blacks in the U.S., as three out of four African Americans report receiving support from family on a frequent basis [20]. Although the association between informal support and SAD is not well understood for Blacks, social support is protective against a range of mental health issues for this group. Social support is linked to fewer depressive symptoms and decreased levels of psychological distress [21–24], and African Americans with low levels of social support report more suicidal ideation and attempts [25–27].

Although supportive relationships protect against mental illness, other research indicates that negative interactions (i.e., criticisms, arguments) can have a deleterious effect on psychological well-being [21,20]. Individuals experiencing higher levels of negative interaction are more likely to be diagnosed with depression and suffer from more depressive symptoms [28,22]. In sum, the current literature documents the association between impaired social relationships and SAD, as well as the protective role social support can play for mental health among African Americans and Black Caribbeans. An important next step toward understanding and improving SAD interventions for these groups is to more fully examine how interpersonal problems and strengths relate to SAD for these populations.

Ethnic Diversity within the Black Population

Our specific interest in examining social relationships and SAD within the Black population addresses the fact that social science research has largely overlooked the issue of ethnic heterogeneity within the Black racial category. This is despite demographic profiles noting significant growth in the size of immigrant populations from Caribbean countries who number approximately 3 million [29] and constitute roughly 4.5% of the U.S. Black population [30]. Caribbean Blacks are especially prominent in specific geographic areas and represent fully a quarter of the Black population in New York and Boston, a third in Miami and West Palm Beach/Boca Raton, Florida and approximately 44% in the Fort Lauderdale area [30]. These numbers demonstrate that the Black foreign-born population is a source of significant but largely unrecognized within-group ethnic variation in the Black population.

Race, and particularly Black race, is a prominent characteristic that defines social status, power and intergroup relations in the U.S. As a consequence of their racial status, Caribbean Blacks are rarely recognized as representing a distinct ethnic group within the broader Black population [30,31]. This is evident both in everyday interactions experienced by Caribbean Blacks, as well as their treatment in the social sciences. In terms of social realities and life circumstances, Caribbean Blacks encounter situations and interactions that are similar to their native born Black counterparts [32,31]. Furthermore, social science research has largely ignored the concept of Black ethnicity, as well as important differences associated with Caribbean ethnicity (e.g., national origin and cultural backgrounds, social-historical contexts, and life experiences) that may be consequential for understanding health and social phenomena. Until recently, very few studies have focused on within-race ethnic diversity (e.g., Caribbean Blacks and native born Blacks) or examined the social characteristics associated with these groups and their potential relation to health and social outcomes [33,34]. A fuller understanding of race and ethnicity should examine specific cultural and contextual features that characterize particular race and ethnic minority groups and that may, in turn, constitute risk and protective factors for their health and well-being [34].

Research indicates that as compared to native Black Americans, Caribbean Blacks are more likely to be married, have higher levels of income and education, and to own their homes [35,36,31]. Findings from ethnographic research on Caribbean Blacks notes the importance of the family, neighborhood, community, and cultural institutions (e.g., religious organizations) as a source of material and emotional support, providing a sense of community and reinforcing ethnic identities, and in mediating the broader social

environment [37,38,31,39]. This is particularly important with regard to encounters with racial prejudice and discrimination in several life domains (e.g., employment, housing, education, and health care) [35,31]. Similar to their African American counterparts [20], this body of work indicates that family and friend relationships and social support are important for the well-being of Caribbean Blacks [35].

Two recent studies highlight similarities and differences in social relations and support between Caribbean Blacks and African Americans. Lincoln et al.'s (2012) study of correlates of emotional support and negative interaction (i.e., criticism, arguments) found no significant differences between African Americans and Caribbean Blacks for overall frequency of emotional support or negative interaction. Among Caribbean Blacks, however, frequency of contact with family members was unrelated to emotional support, whereas family contact was positively associated with emotional support among African Americans. In a similar vein, Caribbean Blacks reported less frequent interactions with family members than African Americans [19], possibly due to geographic dispersion of family members [40,32]. However, Caribbean Blacks were no different than African Americans with respect to overall levels of giving and receiving family support.

Focus of the Present Study

This study uses the National Survey of American Life (NSAL) to investigate how subjective closeness, frequency of negative interaction, and frequency of contact with family and friends relate to SAD. An additional aim is to clarify whether different types of relationships (i.e., family, friendships) have different influences on social anxiety symptoms for African Americans and Black Caribbeans. The National Survey of American Life (NSAL) is the largest survey of Black psychopathology to-date [18] and one of the few studies that explores heterogeneity within the U.S. Black population [18]. This innovation is significant because there are notable differences between Black Caribbeans and African Americans, including distinct languages, forms of music, and social customs [41,30,31].

Given diversity in the backgrounds and social experiences of Caribbean Blacks and African Americans, an important next step in mental health research should explore specific aspects of social relationships associated with SAD within these groups. Although prior research on social anxiety is limited, a few general hypotheses are offered regarding how social relationships are related to SAD and possible differences across ethnic groups. On the basis of prior research on social relationships and mental health and the importance of family and friend networks, we anticipate that measures of emotional closeness with family and friends and contact with family and friends will be inversely associated with 12 month and lifetime social anxiety. For Caribbean Blacks, the literature further indicates that due to the experience of migration, family members often reside not only in the home country of origin, but also in receiving countries such as the U.S., Canada, and the U.K. [40,32,42,43]. Consequently, for Caribbean Blacks, relationships and contact with both immediate and extended family [19] are significantly impacted by geographic dispersion (i.e., transnational families). Given differences in opportunities to interact and connect with family directly, family factors (closeness and contact) may be relatively less important than friend factors in relation to social anxiety. Accordingly, we expect that closeness and contact with friends

will be more important than family closeness and contact for predicting social anxiety among Caribbean Blacks. Finally, because a considerable body of research underscores the detrimental impacts of negative interaction on well-being and mental health, we anticipate that negative interaction with family will be positively associated with social anxiety (12 month and lifetime) for both African Americans and Caribbean Blacks.

We also test for several interactions between the family and friendship variables. The interactive effects involving family and friendship social support variables provide information above-and-beyond additive contributions. For instance, being close to both family and friends may be particularly protective of social anxiety disorder. This would be an example of what are termed, multiplier effects, whereby high levels of closeness from both groups are especially protective for SAD. Similarly, being close to friends may help buffer the impact of negative interaction from family on social anxiety. In this case, the interaction term tests for whether the impact of negative interaction from family on SAD varies by level of closeness to friends.

The present study is important because previous work investigating anxiety disorders for African Americans and Black Caribbeans using the NSAL shows that functional impairments and service utilization often differ for these groups [17,44]. Only 21.4% of African Americans and 5.1% of Black Caribbeans who met criteria for SAD in the past year had sought specialty mental health treatment for their disorder [45]. Furthermore, even when individuals do seek specialty mental health treatment, NSAL data indicate that the perceived helpfulness of mental health treatment and satisfaction with services could be improved [46]. Thus, the literature indicates that more work needs to be done to make treatments both more accessible and more effective for these groups. By investigating specific qualities of social relationships that predict SAD, this study represents an important step toward identifying potential treatment targets for Black populations in the U.S.

Methods

Sample

The National Survey of American Life: Coping with Stress in the 21st Century (NSAL) was collected by the Program for Research on Black Americans at the University of Michigan's Institute for Social Research. The field work for the study was completed by the Institute for Social Research's Survey Research Center, in cooperation with the Program for Research on Black Americans. The NSAL sample has a national multi-stage probability design which consists of 64 primary sampling units (PSUs). Fifty-six of these primary areas overlap substantially with existing Survey Research Center's National Sample primary areas. The remaining eight primary areas were chosen from the South in order for the sample to represent African Americans in the proportion in which they are distributed nationally.

The NSAL includes the first major probability sample of Black Caribbeans. For the purposes of this study, Black Caribbeans are defined as persons who trace their ethnic heritage to a Caribbean country, but who now reside in the United States, are racially classified as Black, and who are English-speaking (but may also speak another language). In both the African American and Black Caribbean samples, it was necessary for respondents

to self-identify their race as Black. Those self-identifying as Black were included in the Black Caribbean sample if they: 1) answered affirmatively when asked if they were of West Indian or Caribbean descent, b) said they were from a country included on a list of Caribbean area countries presented by the interviewers, or c) indicated that their parents or grandparents were born in a Caribbean area country.

The data collection was conducted from February 2001 to June 2003. The interviews were administered face-to-face and conducted within respondents' homes; respondents were compensated for their time. A total of 6,082 face-to-face interviews were conducted with persons aged 18 or older, including 3,570 African Americans, 891 non-Hispanic Whites, and 1,621 Blacks of Caribbean descent. The overall response rate was 72.3%. Response rates for individual subgroups were 70.7% for African Americans, 77.7% for Black Caribbeans, and 69.7% for non-Hispanic Whites. The response rate is excellent given that African Americans (especially lower income African Americans) are more likely to reside in major urban areas which are more difficult and expensive with respect to survey fieldwork and data collection. Final response rates for the NSAL two-phase sample designs were computed using the American Association of Public Opinion Research (AAPOR) guidelines (for Response Rate 3 samples) [47] (see [18] for a more detailed discussion of the NSAL sample). The NSAL data collection was approved by the University of Michigan Institutional Review Board.

Measures

Dependent Variables—There are two dependent variables in this analysis: 12-month social anxiety disorder and lifetime social anxiety disorder. The DSM-IV World Mental Health Composite International Diagnostic Interview (WMH-CIDI), a fully structured diagnostic interview, was used to assess both 12-month and lifetime Social Anxiety. The social anxiety section used for the NSAL included the same diagnostic questions used for the World Mental Health project initiated in 2000 (World Health Organization, 2004) and the instrument used in the National Comorbidity Survey-Replication (NCS-R) [48].

Independent Variables—There are 5 independent variables representing selected measures of involvement in extended family and friendship informal social support networks. These family and friendship social support measures are consistent with constructs used in family sociology. They draw from research and theory on the concept of family solidarity, in particular, associational solidarity (frequency of contact) and affectional solidarity (positive sentiments about family members) [49], and more recent research on negative interactions with family members [50]. Although the constructs are based on research on family solidarity, other research indicates that these measures are also relevant for non-kin support networks [51].

Three measures assess involvement in family support networks and two measures assess involvement in friendship support networks. Degree of subjective family closeness is measured by the question: "How close do you feel towards your family members? Would you say very close, fairly close, not too close or not close at all?" Values for response categories are very close=4, fairly close=3, not too close=2 and not close at all=1. This item was also asked of friends (i.e., Subjective Friendship Closeness). Frequency of contact with

family members is measured by the question: "How often do you see, write or talk on the telephone with family or relatives who do not live with you? Would you say nearly everyday, at least once a week, a few times a month, at least once a month, a few times a year, hardly ever or never?" Values for response categories are nearly everyday=7, at least once a week=6, a few times a month=5, at least once a month=4, a few times a year=3, hardly ever=2 and never=1. This question was also asked of friends (i.e., Friend Contact). Lastly, negative interaction with family members is measured by an index of 3 items. Respondents were asked "Other than your (spouse/partner) how often do your family members: 1) make too many demands on you? 2) criticize you and the things you do? and 3) try to take advantage of you?" The response categories for these questions were "very often" (4), "fairly often" (3) "not too often" (2) and "never" (1). Higher values on this index indicate higher levels of negative interaction with family members (Cronbach's alpha =0.74).

Analysis Strategy

Among African Americans there was missing data on 3.89% of respondents for 12 month social anxiety disorder and 6.81% of respondents for lifetime social anxiety disorder. Among Black Caribbeans, the respective percentages were 2.22% and 4.38%. This is missing data on any variable in the multivariable analysis. The use of listwise deletion in cases where missing data represents less than 10% of the sample is considered to be acceptable, having little impact on the validity of statistical inferences. Logistic regression analysis was used and odds ratio estimates and 95% confidence intervals are presented along with the design-corrected *F* statistic. We tested for interactions between the informal support network variables. In particular, we tested six interactions: (family closeness X family contact), (friendship closeness X friendship contact), (negative interaction X family closeness), (negative interaction X family contact), (negative interaction X friendship closeness), (negative interaction X friendship contact). Only interactions that were significant at the .05 level were included in the final regression analysis. To illustrate these interactions, we constructed predicted probabilities of both 12 month and lifetime SAD. Negative interaction (Figures 1, 3, and 5) with family and friendship contact (Figures 2 and 4) were dichotomized using median split in order to ease interpretation of the interaction effects. Values above and below the median represent high and low levels of negative interaction and friendship closeness, respectively. We used values of one to four to represent the range of possible scores for family closeness (Figure 1) and values of one and two for friend closeness. We chose mean values for all remaining covariates to illustrate the interaction for the average respondent in the analysis. All analyses were conducted using SAS which uses the Taylor expansion approximation technique for calculating the complex design-based estimates of variance. Standard error estimates are corrected for unequal probabilities of selection, nonresponse, post-stratification, and the sample's complex design (i.e., clustering and stratification); results from these analyses are generalizable to the African American adult and Black Caribbean adult populations.

Results

Demographic characteristics

The distribution of demographic characteristics of African American and Black Caribbean participants is presented in Table 1. Bivariate comparisons indicate that Black Caribbeans are on average younger and have higher mean levels of education and income compared to African Americans. African Americans, in contrast, are less likely to be married and report greater contact with family members. No significant differences in other family and friendship variables were found.

African Americans

Table 2 presents the logistic regressions of the family and friendship variables on social anxiety for African Americans. In Table 2, Model 1 examines the correlates of 12 month social anxiety and Model 2 examines the correlates of lifetime social anxiety. Negative interaction with family was positively associated and friendship closeness was inversely associated with 12-month social anxiety (Model 1). Additionally, there was a significant interaction between negative interaction and family closeness. The significant interaction, as seen in Figure 1, indicates that the association between family closeness and social anxiety is much stronger among African Americans who experience high levels of negative interaction with family members. Respondents with high levels of negative interaction and low levels of family closeness are at greatest risk for social anxiety disorder. Conversely, respondents with high family closeness and low negative interactions are least likely to have social anxiety. In the analysis of lifetime social anxiety (Table 2; Model 2) negative interaction with family members is the only family or friendship variable that achieved significance. Individuals with lifetime social anxiety report more frequent negative interactions with family members than their counterparts.

Black Caribbeans

The logistic regression models of the family and friendship variables on 12 month and lifetime social anxiety for Black Caribbeans are presented in Table 3. Models 1 and 2 examine the correlates of 12 month social anxiety and Models 3 and 4 examines the correlates of lifetime social anxiety. With regards to 12 month social anxiety, negative interaction with family members and friendship contact were positively associated with 12 month social anxiety, whereas family contact was negatively associated. These same findings are also evident with regards to lifetime social anxiety (Table 3: Models 3 and 4).

There were two significant interactions between the family and friendship variables for both 12 month and lifetime social anxiety among Black Caribbeans. These interactions were the same for both 12 month and lifetime social anxiety. The significant interactions between negative interaction with family and friendship closeness indicates that the odds of having social anxiety were higher among Black Caribbeans who had high negative interaction with family as well as low levels of friendship closeness (Figures 3 and 5). Moreover, Black Caribbeans who have the highest level of friendship closeness and low negative interaction with family members have the lowest odds of experiencing social anxiety. The interactions between friendship contact and friendship closeness indicated that Black Caribbeans with

social anxiety were more likely to have high levels of friendship contact coupled with low levels of friendship closeness (Figures 2 and 4). These interactions were the same for both 12 month and lifetime social anxiety.

Due to the inclusion of several family and friendship support variables in our regressions, we checked for multicollinearity. We computed the Variance Inflation Factor which is a widely used measure of the degree of multicollinearity between the independent variables. In our analysis none of the Variance Inflation Factors reached the threshold of 10 or the more stringent threshold of 4 which many researchers (see [52]) regard as a sign of severe or serious multicollinearity (the largest VIF in our analysis was 1.4).

Discussion

This study investigated the associations between social support from family and friends, negative familial interactions, and SAD among a nationally representative sample of African Americans and Black Caribbeans. Overall, the results indicate that emotional closeness and contact with family or friends can be protective factors for SAD and that negative interaction with family is a risk factor for SAD for these populations. Our findings also indicate that family and friendship networks are uniquely associated with SAD: consequently, research that combines these two informal support networks obscures their important differences. Furthermore, both structural (i.e., frequency of contact) and qualitative (i.e., subjective closeness) aspects of social support networks are associated with SAD. Negative interaction with family was associated with increased odds of meeting criteria for SAD for both African Americans and Black Caribbeans. However, these subgroups diverged in terms of which relationship factors were protective. These findings will be discussed in terms of the unique characteristics and experiences of these groups.

More frequent negative interaction with family members was associated with lifetime and 12-month SAD for both African Americans and Black Caribbeans. Negative interaction was the most consistent support network correlate of SAD and was associated with SAD in the expected manner. This is consistent with previous research identifying negative interaction as a risk factor for having a psychiatric disorder in the general population [53,54]. Further, more frequent negative interactions with family has also been linked to increased odds for having higher levels of psychiatric distress and depression in U.S. Black populations [23,21,55], increased odds of having a suicidal ideation and a suicidal attempt [25], as well as increased odds of having a mood or anxiety disorder among older African Americans [56].

However, due to the cross sectional nature of the data, the causal relationships between negative interactions with family and psychiatric disorders are not clear. In other words, negative interactions with family could be a cause or consequence of SAD. Lincoln et al. (2010) suggest that depression or anxiety symptoms in African Americans may cause individuals to withdraw from social contact, which could potentially elicit criticism or disapproval from family members. This explanation may be appropriate for SAD as well, in that SAD is associated with problems in social skills and the ability to function effectively in social relationships [57–59]. Consequently, social anxiety may inhibit one's ability to

interact effectively with family and friends. However, evidence for whether socially anxious individuals have more social skills deficits compared to non-socially anxious individuals is mixed [60], and more work is needed to determine whether SAD elicits criticism and conflict with family members. Furthermore, social anxiety symptoms such as avoidance of interpersonal situations may also be frustrating for family and friends which, in turn, can negatively affect these relationships. For instance, relationship conflicts may emerge if an individual with SAD refuses to attend an important family event due to their anxiety symptoms. Together these findings suggest that given the interpersonal nature of SAD, understanding how it influences family functioning is particularly important and an area needing additional research.

Alternatively, negative interactions with family may be a risk factor rather than a consequence of SAD. For example, results of a 30 year prospective study indicate that poor sibling relationships were associated with depression later in life [61]. Furthermore, research shows that family of origin hostility predicts later relationship problems [62]. Given that relationship problems are a core component of SAD, these findings suggest that problematic family interactions lead to SAD symptoms. Additionally, socially anxious children are more likely to report that their parents are over-protective and critical [63], further suggesting that familial relationship problems may be a risk factor. As this evidence indicates, future work is needed examining the temporal relationship between negative interaction with families and the development of SAD.

While the pattern of findings for African Americans and Black Caribbeans were similar with regards to negative interactions with family, they diverged in terms of how family and friend closeness and contact were related to SAD. Lower levels of friendship *closeness* was associated with SAD for African Americans, whereas lower levels of family and friendship *contact* was linked to SAD for Black Caribbeans. The finding that African Americans with SAD were more likely to report decreased friendship closeness is consistent with literature indicating that SAD is the largest predictor of friendship quality [64] and that support networks are important for African American mental health [65,28,25].

These data also reveal that frequency of both family and friendship contact are uniquely related to SAD, but only for Black Caribbeans. Previous research indicates that although Black Caribbean support networks are more geographically dispersed, amount of contact and closeness are still high [19] and, further, better network relationships are related to higher levels of well-being [66]. Caribbean immigrants often have kinship networks that include family members in the United States, Canada, Europe and the Caribbean [67,38]. The greater geographic dispersion of Black Caribbean support networks may be one reason that frequency of family contact is more protective for this group. Interaction with family in person, through phone, email or video conferencing may become more important when family members have limited opportunity for in person interactions. This is also consistent with research indicating that social media and telephone conversations are particularly important for long distance relationships [68].

In addition, research on Black Caribbeans indicates that there may be specific cultural reasons why family contact is a protective factor for Black Caribbeans. Research has found

that family connectedness and support networks are a prominent cultural feature in Caribbean Black families [37,39]. Black Caribbean families utilize immediate family, grandparents as well as other relatives and non-kin in creating support networks that provide emotional support as well as instrumental assistance in migratory transitions. For Black Caribbean families who have immigrant origins, social support is often maintained through kin networks that extend across international boundaries. Thus having frequent contact with family members may be protective of social anxiety disorder whereas, on the contrary isolating from family networks is consistent with the symptoms of social anxiety.

Several interactions between the support network variables were found among African Americans and Black Caribbeans. For African Americans, subjective family closeness emerged as a protective factor for social anxiety for respondents who have frequent negative interactions with family. Although African Americans with both high and low levels of negative interaction benefited from increased family closeness, individuals with high levels of negative interaction experienced this benefit to a greater extent than individuals with low levels of negative interaction. This interaction indicates that higher emotional closeness and lower conflict may together have an increased protective effect for social anxiety. The interaction further suggests that family closeness more strongly buffers against some of the adverse effect of negative interaction on social anxiety than it directly protects against social anxiety. This relationship can be understood in the context of previous work demonstrating the particular importance of kin networks in the mental health of African Americans [65,19,20]. The present study adds to this literature by confirming that negative interactions have powerful harmful effects for African Americans, providing insight regarding how negative relationships may relate to SAD. Overall, this work suggests that familial conflict is very detrimental to mental health even in the presence of high levels of perceived closeness, but also that familial closeness can buffer against the detrimental effects of negative interaction on mental health. These findings suggest that future interventions should consider focusing on not only decreasing negative interactions with family for African Americans with SAD but also strengthening family ties.

For Black Caribbeans, two interactions emerged. One interaction was between negative interactions with family members, friendship closeness and having SAD. This interaction indicated that Black Caribbeans with both 12 month and lifetime social anxiety were more likely to have negative interactions with family and low levels of friendship closeness (Figures 3 and 5). Moreover, the negative correlation between friend closeness and social anxiety was stronger for Black Caribbeans who experienced high levels of negative interaction relative to those who experienced low levels of negative interaction. This interaction seems to indicate that friend closeness buffers against some of the deleterious effects of negative interaction on social anxiety. Thus, it appears that increased family conflict and poor friendship relations represent a cumulative burden for Caribbean Blacks with regards to social anxiety symptoms. These findings can be understood in the context of literature showing that SAD is uniquely related to social problems compared to other anxiey disorders [69]. Social anxiety also has a particularly early onset, with problems in social relationships persisting througout the life-course [3]. Furthemore, previous research indicates that individuals with SAD report dissatisfaction in a variety of relationships (e.g., romantic and friendship) [70,71]. Thus, the finding that SAD is more likely to occur in

Black Caribbeans who have both poor family and frienship relationships fits well with what is known about impairment in SAD.

These findings can also be understood in the context of work showing that family and friendship networks are important for Black Caribbeans' subjective well-being [66]. While some have speculated that family relationships may be less tied to mental health for Black Caribbeans due to the fact that familial networks are more spread out geographically, research shows that family ties are actually extremely important for Caribbean Blacks in the U.S., and that these close ties endure even across long distances [66,19]. Given the importance of close relationships for Black Caribbean mental health, the finding that poor family and frienship relationships are associated with an increased risk for SAD is not surprising. These findings indicate that it may be especially important for SAD treatments to target Black Caribbeans who report problems in a variety of relationship domains.

The second interaction for Black Caribbeans was between friendship contact and friendship closeness, indicating that high levels of friendship contact coupled with low levels of friendship closeness was associated with social anxiety for Black Caribbeans (Figures 2 and 4). As mentioned above, research on SAD has established a link between poor peer relationship and SAD symptoms [70]. When compared to other psychiatric disorders, SAD was the largest predictor of problems with friendship quality in the NSAL [12]. The pattern of high friendship contact and low friendship closeness may be tapping into a conflict dimension and suggests that a measure specifically assessing negative friendship interaction might be useful in future studies. Unfortunately, measures of negative interaction with friends were not included in the NSAL.

Limitations

This study has limitations and certain conclusions should be circumscribed. First, as these data are cross-sectional, it is not possible to determine whether negative interactions with family are a cause or a consequence of SAD. Future longitudinal studies are needed to clarify this relationship. Also, we felt that it was preferable to conduct the analysis separately for African Americans and Black Caribbeans due to the lack of research on SAD among both of these populations and for conceptual reasons related to potential differences in how correlates are associated with SAD. It is important to note, however, that we did not formally test for effect modification by ethnicity. Another potential limitation is related to statistical power, which may be a particular concern when examining outcomes with a low prevalence and in smaller subgroups (e.g., models examining 12-month SAD among Black Caribbeans). Additionally, this study only surveyed one respondent, making it difficult to investigate whether the quality of their relationships is actually poor as assessed by relevant others or whether they merely perceive it as such. It would be instructive to know how the socially anxious person is perceived within their family or peer network to determine whether treatments should target social skills or should instead focus more on encouraging people with SAD to place themselves in anxiety-provoking social situations (i.e., exposure therapies). Given research showing that incorporating social skills training (SST) into CBT for SAD may improve treatment outcomes [58], this is a particularly important area that needs to be clarified in future studies.

Conclusion

The findings from this study indicate that considering racial/ethnic subpopulations is important for understanding minority mental health, and that attending to these differences in treatment may improve outcomes. Many studies indicate that existing mental health treatments are not meeting the needs of minority populations [45], and that specifically tailoring treatments to the group served can improve treatment adherence and outcomes [72,73]. However, there are several practical problems to achieving this goal. Given the vast amount of diversity in the U.S., the number of possibilities for targeting treatments to every different racial and cultural group would be very high, and, thus, financially unreasonable [74]. Furthermore, if separate treatments existed for a large number of minority groups, the training burden on therapists (particularly those who treat a diverse population) would also be high, as developing competency with a variety of cultural groups is labor intensive [75]. Additionally, for therapists who serve a diverse clientele, it would be difficult to remain competent in targeted treatments, as these practitioners may not have an adequate flow of clients requiring a specific treatment.

These cautions notwithstanding, several key constructs that have been linked to mental health— experiences with discrimination, felt interdependence in interpersonal and social relations, and spirituality—have been found to distinguish racial-ethnic minorities from those in the majority population [74]. Researchers stress that common, universal factors, may provide a starting point for investigators to develop more culturally competent therapies with the potential for use in multiple minority groups [76]. This study provides further support that interdependence in interpersonal and social relations is an important factor in determining minority mental health and could provide a crucial treatment target. Future randomized controlled trials are needed to determine whether therapies that specifically improve familial and friendship relationships are more effective for these groups.

Future research should also examine the impact of attachment history and behaviors on SAD [33,34]. Attachment may be particularly critical for Black Caribbeans who have high rates of both extended family care for minor children as well as family geographic mobility and dispersion [31]. For instance, child fostering, which provides temporary care of children by other family members in the absence of the parents, has historically been a household economic strategy throughout the Caribbean [31,39]. Waters (2001) notes that child fostering may eventually result in strained relationships between adult children and their parents [31]. However, it is important to note that Black Caribbeans have a lower prevalence of Social Anxiety Disorder than non-Hispanic whites [17].

This first study of how family and friendship social support relate to SAD for African Americans and Black Caribbeans highlights the importance of family and friendship relationships for minority mental health. This work demonstrates that different aspects of social support networks are uniquely related to SAD for Black subgroups, depending on a group's culture and social experience. This study also demonstrates the necessity for exploring within-group heterogeneity to more fully understand ethnic differences in the correlates of disorder and appropriately identify treatment targets.

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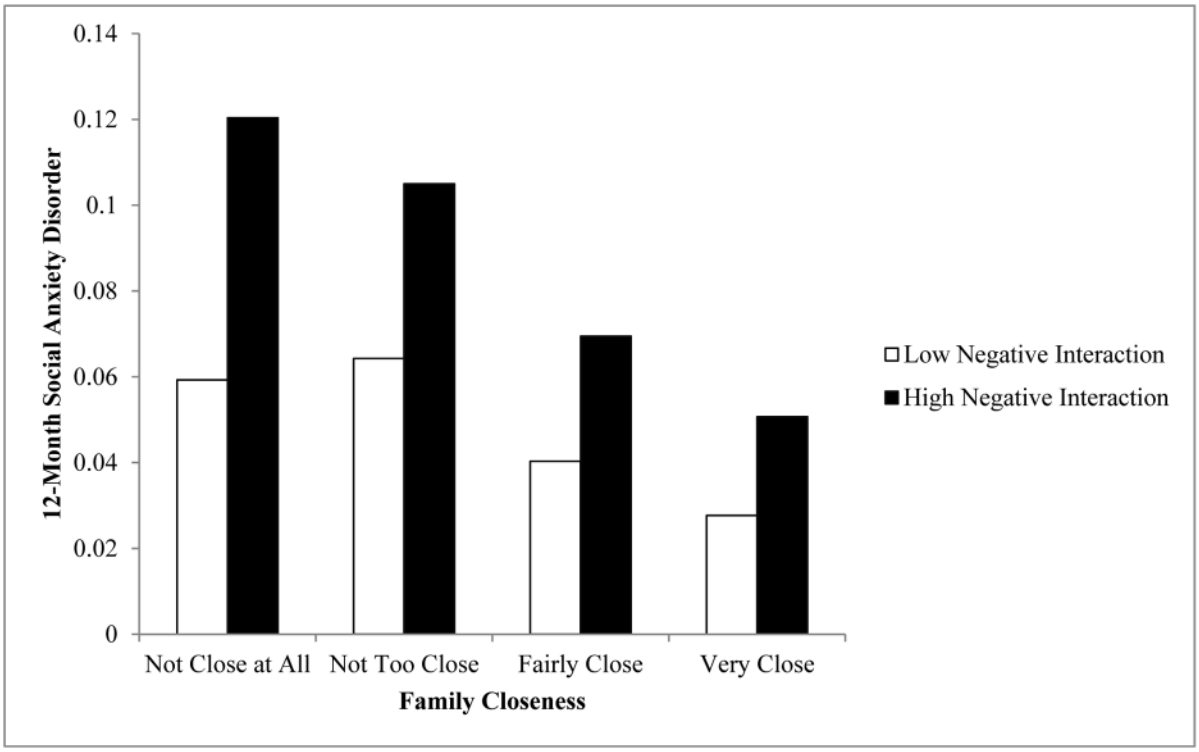

Figure 1.
Predicted value of 12-month social anxiety disorder by negative interaction and family closeness among African American participants

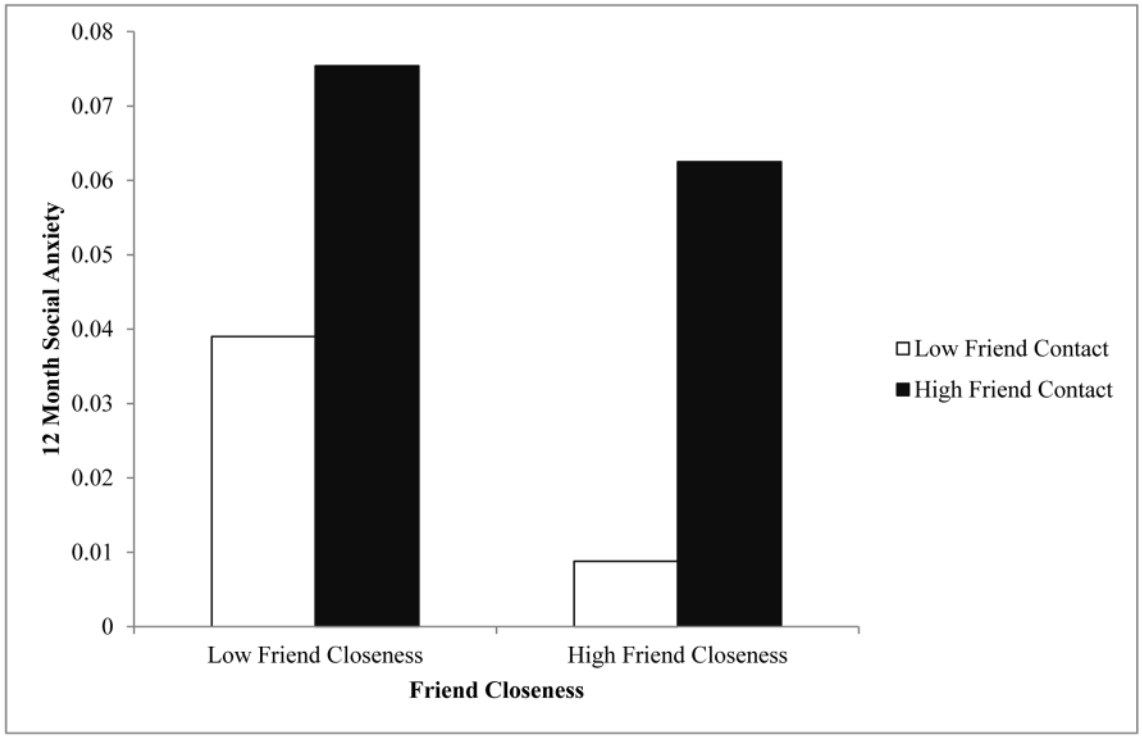

Figure 2.
Predicted value of 12-month social anxiety disorder by friend contact and friend closeness among Black Caribbean participants

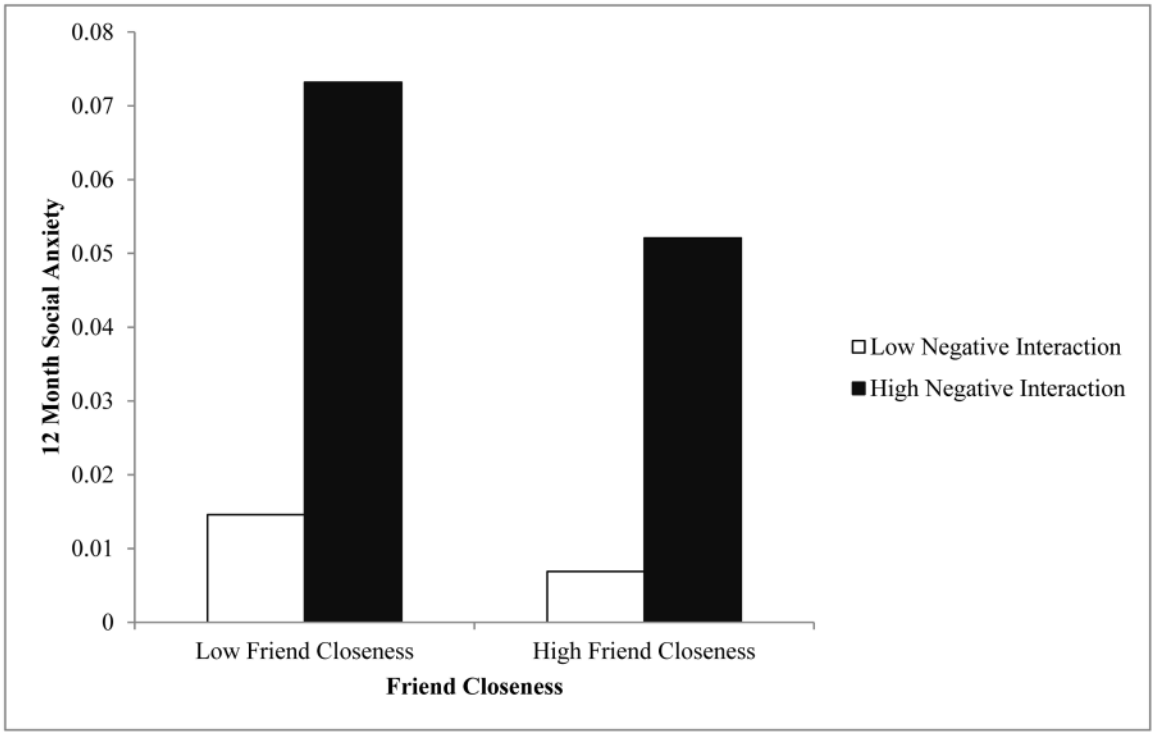

Figure 3.
Predicted value of 12-month social anxiety disorder by negative interaction and friend closeness among Black Caribbean participants

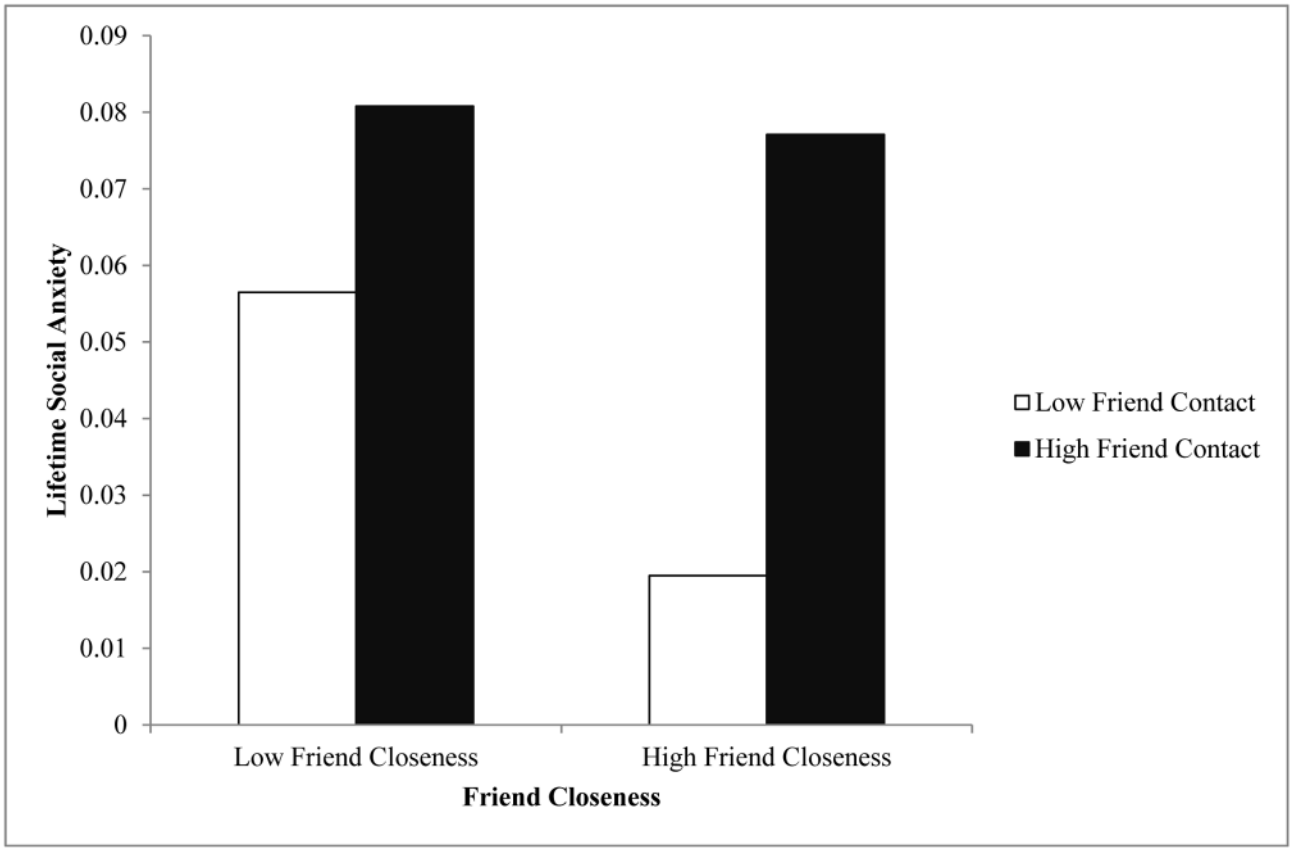

Figure 4.
Predicted value of lifetime social anxiety disorder by friend contact and friend closeness among Black Caribbean participants

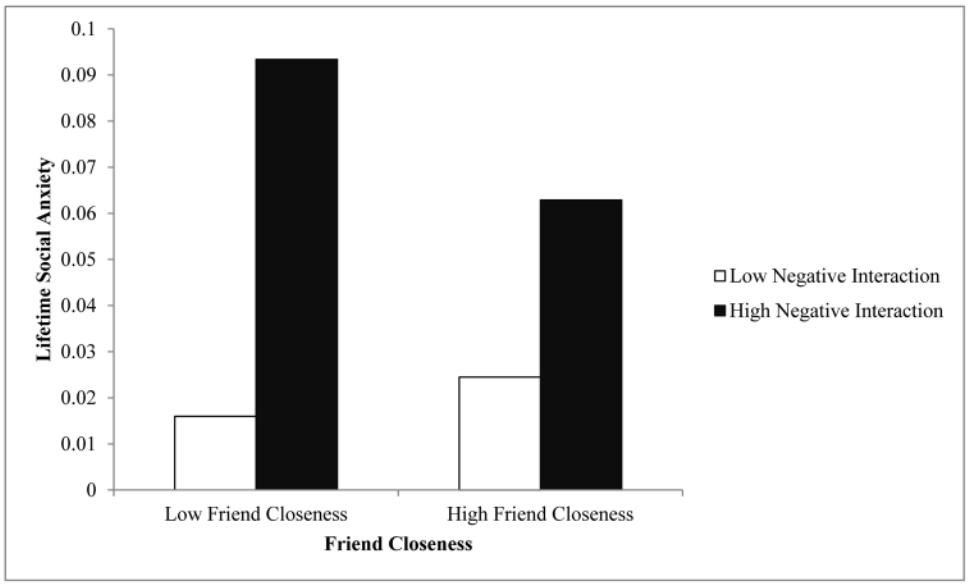

Figure 5.
Predicted value of lifetime social anxiety disorder by negative interaction and friend closeness among Black Caribbean participants

Table 1

Distribution of characteristics of African American and Caribbean participants in the National Survey of American Life (NSAL, 2001–2003).

	African American n = 3570	Caribbean n = 1621	Total N = 5191
Lifetime Social Anxiety, n (%)			
No	3173 (92.42)	1495 (94.00)	4668 (92.53)
Yes	258 (7.58)	90 (6.00)	348 (7.47)
12-Month Social Anxiety, n (%)			
No	3268 (95.45)	1523 (95.32)	4791 (95.44)
Yes	163 (4.55)	62 (4.68)	225 (4.56)
Negative Interaction, Mean (SE)	1.84 (0.02)	1.92 (0.06)	1.85 (0.02)
Family Closeness, Mean (SE)	3.64 (0.02)	3.68 (0.03)	3.64 (0.01)
Family Contact, Mean (SE) **	6.07 (0.03)	5.87 (0.07)	6.06 (0.03)
Friend Closeness, Mean (SE)	3.29 (0.02)	3.31 (0.06)	3.29 (0.02)
Friend Contact, Mean (SE)	5.69 (0.04)	5.84 (0.12)	5.70 (0.03)
Age, Mean (SE) *	42.33 (0.52)	40.27 (0.84)	42.18 (0.49)
Gender, n (%)			
Men	1271 (44.03)	643 (50.87)	1914 (44.50)
Women	2299 (55.97)	978 (49.13)	3277 (55.50)
Marital Status *			
Married	1222 (41.65)	693 (50.15)	1915 (42.25)
Unmarried	2340 (58.35)	928 (49.85)	3268 (57.75)
Education in Years, Mean (SE) **	12.43 (0.09)	12.89 (0.15)	12.46 (0.08)
Income, Mean (SE) **	7.37 (0.30)	9.41 (0.68)	7.51 (0.28)

* $p < 0.05$

** $p < 0.01$

*** $p < 0.001$

Note: Column total may not sum to total sample size due to missing data.

Table 2

Multivariable weighted logistic regressions predicting 12-month and lifetime Social Anxiety among African American respondents in the National Survey of American Life (NSAL, 2001–2003).

	Model 1 12 Month OR (95% CI)	**Model 2 Lifetime OR (95% CI)**
Negative Interaction	1.52 (1.32, 1.74)***	1.37 (1.22, 1.52)***
Family Closeness	0.83 (0.68, 1.02)	0.88 (0.75, 1.03)
Family Contact	1.06 (0.91, 1.23)	0.98 (0.84, 1.14)
Friend Closeness	0.85 (0.73, 0.98)*	0.93 (0.82, 1.05)
Friend Contact	0.92 (0.79, 1.08)	0.91 (0.81, 1.03)
Age	1.01 (0.87, 1.18)	0.97 (0.86, 1.09)
Gender: Women vs. Men	0.84 (0.70, 1.00)*	0.93 (0.81, 1.07)
Marital Status: Unmarried vs. Married	0.79 (0.63, 1.00)*	0.86 (0.75, 0.98)*
Education in Years	0.89 (0.76, 1.04)	0.93 (0.82, 1.06)
Income	1.06 (0.89, 1.28)	1.04 (0.88, 1.24)
Negative Interaction * Family Closeness	1.09 (1.01, 1.17)*	--

* $p < 0.05$

** $p < 0.01$

*** $p < 0.001$

Table 3

Multivariable weighted logistic regressions predicting 12-month and lifetime Social Anxiety among Caribbean participants in the National Survey of American Life (NSAL, 2001–2003).

	Model 1 12 Month OR (95% CI)	**Model 2 12 Month OR (95% CI)**	**Model 3 Lifetime OR (95% CI)**	**Model 4 Lifetime OR (95% CI)**
Negative Interaction	1.23 (1.12, 1.35)***	1.24 (1.13, 1.36)***	1.20 (1.09, 1.32)***	1.21 (1.10, 1.33)***
Family Closeness	1.03 (0.96, 1.10)	1.02 (0.95, 1.10)	1.02 (0.95, 1.10)	1.02 (0.95, 1.09)
Family Contact	0.92 (0.85, 0.99)*	0.92 (0.84, 1.01)	0.92 (0.86, 0.99)*	0.92 (0.85, 1.00)*
Friend Closeness	0.89 (0.75, 1.05)	0.85 (0.71, 1.00)	0.90 (0.77, 1.04)	0.85 (0.74, 0.97)*
Friend Contact	1.38 (1.01, 1.89)*	1.24 (1.01, 1.53)*	1.30 (1.03, 1.64)*	1.17 (0.99, 1.37)
Age	0.99 (0.87, 1.12)	0.99 (0.86, 1.15)	1.02(0.91, 1.13)	1.02(0.90, 1.15)
Gender: Women vs. Men	1.06 (0.88, 1.26)	1.06 (0.89, 1.25)	1.09 (0.94, 1.26)	1.09 (0.94, 1.25)
Marital Status: Unmarried vs. Married	0.99 (0.82, 1.20)	0.97 (0.80, 1.19)	0.94 (0.79, 1.11)	0.92 (0.77, 1.10)
Education in Years	0.93 (0.79, 1.09)	0.95 (0.82, 1.10)	1.00 (0.88, 1.14)	1.01 (0.90, 1.15)
Income	1.00 (0.84, 1.19)	1.01 (0.87, 1.18)	0.98 (0.83, 1.16)	1.00 (0.86, 1.15)
Friend Closeness *				
Friend Interaction	1.05 (1.00, 1.09)*	--	1.05 (1.01, 1.08)**	--
Negative Interaction *				
Friend Closeness	--	1.03 (1.01, 1.06)*	--	1.03 (1.01, 1.06)*

* $p < 0.05$

** $p < 0.01$

*** $p < 0.001$