Depression in children and adolescents has become a topic of great concern in Scotland and the United Kingdom in recent years. According to Scottish Public Health Records in 2009, 17,500 people between the ages of 15 and 24 were treated for depression. By adulthood and midlife, thousands more were being treated. These statistics have brought about concern and a movement for more research and information on mental health in Scotland. There has also been an increase in questions about the roots and causes of depression in adolescents and young adults in Scotland. Many organizations in Scotland, such as the Depression Alliance of Scotland and Action on Depression, have been investigating depression in more depth, and there is a demand for academic research (“Depression Alliance of Scotland,” 2009).

Questions are being raised about what risk factors may be involved in the development of depression. Are the risk factors the same for Scottish young adults as they are for Scottish children and adolescents? Research examining depression in Scotland has focused on children and early adolescents (Sweeting et al., 2006). This research project seeks to examine the transition between adolescence and adulthood, examining issues associated with the development of depression in young adulthood. The current study focuses on common risk factors, including low self-esteem and aggression, and examines if these predict depression in Scottish young adults. These results demonstrate that adolescent risk factors may affect Scottish individuals into early adulthood. This research may help organizations in Scotland understand some of the predictors of depression in young adults.

**Risk Factor: Low Self-Esteem**

Much research has been conducted to examine some of the roots of depression in an attempt to prevent this problem before it begins (Mcknew, Cytryn, & Yahraes, 1983). Low self-esteem is an important risk factor that has been heavily researched in relation to depression (Orth & Robins, 2008). Low self-esteem, as well as low self-perceived competence, is shown to be strongly correlated with depressive symptoms and behaviors in children, adolescents, and young adults in the United Kingdom. Further research is needed to understand the root causes of low self-esteem in Scottish young adults.
Depression in Scottish Young Adults

Researchers asked Scottish children to recall social experiences during primary school in Glasgow, Scotland. Data collected from an Italian sample showed that academic inefficacy, social inefficacy, and depressive symptoms are correlated. Further evidence was found by Sweeting et al. (2006), who conducted a longitudinal study on depression in youth using a longitudinal design. Data showed that low self-esteem had a strong relationship with depression. With this longitudinal data, researchers were able to conclude that low self-esteem may predict levels of depression later in adulthood. This research supports the vulnerability model, which suggests that low self-esteem “serves as a risk factor for depression, especially in the face of major life stresses” (Orth & Robins, 2008, p. 695).

Low self-esteem is also associated with low self-efficacy (Bandura et al., 1999). Self-efficacy is defined as a person’s beliefs in his or her abilities or capabilities to accomplish a desired goal (Bandura et al., 1999). If a person does not believe that he or she is able to accomplish or achieve this task, he or she may have little incentive or perseverance to continue the task, resulting in low self-efficacy (Bandura et al., 1999). Research by Miller (1998) has shown that low self-esteem and low self-efficacy are correlated with the development of adolescent depression within a United States school setting. According to this research, disturbances in academia and social situations are prone to develop as a result of peer victimization, leading the individual to feel worthless and incompetent. When adolescents are socially isolated or feel academically inefficient, it may be very hard for these individuals to overcome obstacles following discouragement (Miller, 1998). This lack of friendship and social ties is closely linked with depression and depressive feelings (Miller, 1998).

Research by Kistner, Zieger, Castro, and Robertson (2001) also suggests that low self-esteem and low self-efficacy are correlated with self-devaluation and eventually depression in some individuals. This research within the United States found strong correlations between children and adolescents low in self-efficacy and later symptoms associated with depression, as well as a negative sense of worth. Feelings of helplessness were found to be linked to negative implications for psychological adjustment. Therefore, low self-esteem and low self-efficacy to fulfill standards in areas of academics, athletics, and friendships are strongly correlated with depression and depressive symptoms. Bandura and colleagues (1999) reported how low self-esteem and low self-efficacy can be seen as potential “pathways” to depression. Data collected from an Italian sample showed that academic inefficacy, social inefficacy, lack of prosocial behavior, low academic achievement and problem behaviors are all significantly correlated to depression and signs of depression. These results indicate that several personal inefficacies are correlated to clinical forms of depression as well as less severe forms of depression.

The relationship between low self-esteem and depression has been consistently found in research studies in both the United States and other European countries (Orth & Robins, 2008; Bandura et al., 1999; Kistner et al., 2001).

As with all correlational research, the relationship between depression and low self-esteem may also be understood in the inverse, that is, that low self-esteem is a predictor of depression.

Risk Factor: Aggression

Aggression is also correlated with an adolescent’s depressive symptomatology (Bolvin et al., 1995; Sweeting et al., 2006). In adolescence, aggression is commonly seen in forms of bullying or peer victimization (Bolvin et al., 1995). Bolvin and colleagues (1995) reasoned that victimized or rejected individuals are often seen to be at a great risk for both externalizing and internalizing difficulties. Individuals may externalize difficulties with acts of aggression and delinquency or they may withdraw and show internalizing difficulties such as depressive symptoms or loneliness. Adolescents who are the victims of aggression or bullying also may experience feelings of rejection with social isolation (Bolvin et al., 1995). By the time Scottish children are in primary school, socially withdrawn children may experience problems with rejection or issues with self-perception, distress, and self-esteem (Bolvin et al., 1995). These problems can potentially lead to forms of depression in socially withdrawn children and adolescents (Bolvin et al., 1995). Research by Bolvin et al. (1995) indicated that such negative peer relationships may be correlated with the development of depression in Canadian children and adolescents. The results of their research showed that withdrawn and rejected individuals displayed a poorer self-concept, lower social satisfaction, expressed more feelings of loneliness, and also experienced a stronger depressed mood than those who had not been rejected. Therefore, a child’s lack of peer relationships and negative peer experiences are shown to be linked with depressive symptoms. Further evidence was found by Sweeting et al. (2006), who conducted a primary school-based survey in Glasgow, Scotland. Researchers asked Scottish children to recall social experiences.
problems they were experiencing at school. Results indicated that victimization by peers is strongly associated with the development of depression in these Scottish children. Thus, peer victimization and aggression are shown to be correlated with feelings of aggression, loneliness, low self-esteem, sadness, and depression.

Bradshaw and Hazan (2006) found that, in general, aggressive individuals have unfavorable views of themselves. As shown previously, children may become aggressive from bullying and peer victimization, and this is linked to feelings of sadness from the rejection (Bolvin et al., 1995). However, most aggressive individuals (victimized or not) typically have negative or unstable views of self as well as low self-esteem (Bolvin et al., 1995). Bradshaw and Hazan (2006) suggested that American children and adolescents may become aggressive due to not only their own low self-image but also from their peers’ negative views. Bullying and peer victimization may intensify feelings of aggression and rejection in some individuals. Results indicated that individuals who had lower self-image, reported higher levels of covert aggression (e.g., hostility and anger), whereas overt aggression (e.g., verbal and physical) was not found to be significantly correlated with low self-esteem.

Panak and Garber (1992) provided more evidence in support of the relationship between aggression and depression. Results indicated that there were significant correlations between increases in aggression and increases in depression over a one-year period in American middle school children. Panak and Garber (1992) hypothesized from this data that individuals with increased peer rejection and victimization were at the most risk for aggressive behaviors, and this increase in aggressive behavior may be correlated with a greater risk for developing depressive symptoms. Research by Morrow et al. (2006) suggests that, while aggressive individuals display higher levels of anger and hostility, they are also often quite sad or depressed. In their study of 57 children, the authors found that peer rejection mediated the relationship between aggression and depression. Therefore, aggression and low self-esteem are seen as major risk and predictive factors for child and adolescent depression.

Current Study
The present study is unique in three ways. First, there has been little research correlating the common risk factors of aggression and low self-esteem specifically with Scottish young adults, as most of the research has been conducted with younger Scottish children. Statistics from the Scottish government show that individuals are being diagnosed with depression at increasing rates when they are in late adolescence or young adulthood (“Scottish Public Health Records,” 2009–2010). The present study specifically examines depression with an age group that has not been as heavily researched in Scotland, as there is a lack of evidence or support for these risk factors in the next stage of development: young adulthood.

In addition, this research study was conducted in Scotland, a country that is currently investing a great deal of time, effort, and money into investigating the rise in depression diagnoses. Aggression and low self-esteem have been correlated with depression in other countries numerous times. However, with the recent increases in diagnoses, one cannot help but wonder if there is something unique about Scotland. Will these common risk factors also be seen as predictors for Scottish young adults? Finally, this study is distinctive as it seeks to examine the role of low self-esteem and aggression together in understanding depression in Scottish young adults.

Therefore, this current study seeks to contribute research to this topic of concern in Scotland, to specifically examine an age group that has faced a large increase in depression cases in recent years, and to see how these common risk factors predict depression. In this particular study, two major and common risk factors—low self-esteem and aggression—were measured to examine if they are predictors of depression in young adults. Research has shown that low self-esteem is correlated with the development of depression (Bandura et al., 1999; Kistner et al., 2001; Orth & Robins, 2008). Aggression has been shown to be correlated to depression (Bolvin et al., 1995; Morrow et al., 2006; Panak & Garber, 1992). Also, aggression and low self-esteem are shown to be correlated (Bradshaw & Hazan, 2006). Therefore, the question remains: Are these common risk factors related to the development of depression in Scottish young adults? It was also hypothesized that covert aggression and low self-esteem are significant predictors of depressive symptoms or behaviors within this sample.

Method

Participants
The group of Scottish young adults was composed of 63 college students (17 men, 46 women) in a 100-level introductory psychology class.
enrolled at a large university in Glasgow, Scotland. Ages ranged from 17 to 25 years ($M = 20.36, SD = 2.01$). All students identified themselves as being of Scottish descent. Students gave written consent for participation, and they participated in this study for a research credit for their introductory psychology class.

**Measures**

Participants completed a demographic questionnaire where they were asked to identify their age, gender, and national origin. In addition, measures of depression, self-esteem, and aggression were administered.

**Depression.** To measure symptoms and behaviors of depression, participants completed the Beck Depression Inventory-II (BDI-II; Beck, Beck, & Jolly, 2003). The BDI-II is a 21-item self-report scale that assesses depressive symptoms present within the past two weeks. The questionnaire measures depressive symptoms using current diagnostic criteria. Scores range from 0–63, and higher scores indicate more symptoms of depression. Studies have found good internal consistency with this measure, and it is commonly used to assess depression in adolescents and adults (Uhrlass & Gibb, 2007). Good reliability and convergent and discriminant validity has been found using the BDI-II, and research has found the BDI-II to more accurately categorize participants than other measures of depression (Titov, Dear, McMillan, Anderson, Zou, & Sunderland, 2011). Cronbach’s alpha for the current sample was 0.89.

**Self-Esteem.** The Rosenberg Self-Esteem Scale (Rosenberg, 1965) was used to evaluate self-esteem. This is the most commonly used measure for global self-esteem with well-validated results (Orth & Robins, 2008). Participants rated 10 statements (e.g., “I take a positive attitude towards myself”) on how well these statements describe themselves. Answers on the questionnaires range from 1 (strongly agree) to 4 (strongly disagree) and has a total score range of 10 to 40. Researchers have called this measure the most commonly used measure of self-esteem, and it is used successfully for most age groups (Robins, Hendin, & Trzesniewski, 2001). Cronbach’s alpha for the current sample was 0.85.

**Aggression.** The Aggression Questionnaire (Buss & Perry, 1992) was used to assess the four forms of aggression: anger, hostility, verbal aggression, and physical aggression. Participants examined 29 statements (e.g., “Some of my friends think I am a hothead” or “Given enough provocation, I may hit another person”) and rated from 1 (extremely uncharacteristic of me) to 5 (extremely characteristic of me) and has a total score range of 29 to 145. Good validity and reliability have been consistently found, making the Aggression Questionnaire widely and commonly used to measure aggression (Gerevich, Bacsikai, & Czobor, 2007). Cronbach’s alpha for the current sample was 0.91.

**Procedure**

Questionnaires were given during scheduled data collection times. Participants completed the questionnaires alone, either in a classroom, at study tables in the library, or in study sections of the Psychology Department office. Each participant had space and privacy so that they were not influenced by other participants around them. Participants provided written consent prior to participation. Ethical procedures from this Scottish university stated that parental consent was not required unless participants were under the age of 16 (“University Handbook,” 2011). Participants then filled out an anonymous eight-page questionnaire packet, with questionnaires given in the same order. After completion, students received a written document providing general information about the research study and getting help with depression. These resources were provided so that any individuals who felt depressed could seek further information or help if needed.

The BDI-II is used to measure symptoms over the past two weeks; therefore, it should be noted that participants were given the questionnaires well into the term, but not during any exam periods. This was to make sure that negative/depressive feelings of exams were not contributing to their evaluation of mood. Questionnaires were given during weeks eight and nine of a 13-week semester.

**Results**

Analysis of the BDI-II indicated that of the 63 participants, 16% were classified with mild depression, 10% with moderate depression, and 5% of the participants were classified with severe depression. Sixty-nine percent showed minimal signs of depression. Women had a slightly higher average BDI-II score ($M = 12.13, SD = 9.16$) than men ($M = 11.82, SD = 7.19$), $t(62) = 0.14, n.s.$ Although this was not a statistically significant difference, it may be of clinical interest to note that 17 women showed mild to severe symptoms of depression, while only three men showed these symptoms. In contrast, men had a statistically significantly higher average aggression
score ($M = 83.29, SD = 15.71$) than women ($M = 67.04, SD = 15.61$), $t(62) = 3.64, p < .01$. Lastly, men had significantly higher self-esteem scores ($M = 30.76, SD = 3.29$) than women ($M = 28.43, SD = 5.54$), $t(62) = 2.45, p < .05$.

Pearson correlations were computed to see if high levels of aggression and low self-esteem were related to depression in Scottish adolescents (Table 1). Lower self-esteem scores were significantly correlated with depressive symptoms and behaviors ($r = -.63, p < .01$). Four different types of aggressive behaviors were measured in this study: angry, hostile, physical and verbal. Angry aggressive behaviors were significantly correlated with depression ($r = .31, p < .05$), as were hostility aggressive behaviors ($r = .57, p < .01$). However, physical and verbal aggressive behaviors were not correlated with BDI scores. Consistent with the hypothesis, low self-esteem and high levels of covert aggressive behaviors were significantly correlated with depressive symptoms and behaviors in Scottish adolescents. Total combined aggression scores were also significantly correlated with depressive symptoms and behaviors ($r = .38, p < .01$). The risk factors were also correlated, as lower self-esteem scores were significantly correlated with hostility aggression ($r = -.66, p < .01$).

Next, low self-esteem and covert aggression were entered into a regression model to predict depression (Table 2). Low self-esteem scores and hostility and anger aggressive scores explained a significant proportion of variance in depression scores, $R^2 = 0.417, F(3,62) = 13.84, p < .01$. The analysis indicated that low self-esteem scores and high hostility and anger aggressive scores significantly predicted depressive behaviors ($\beta = .58, p < .01; \beta = .57, p < .01, \beta = .31, p < .01$; respectively). All variables entered into the model contributed significantly (see Table 2). Findings supported the hypothesis that, taken together, covert aggression and low self-esteem are significant predictors in the development of depression in Scottish young adults.

**Discussion**

This study investigated the effects of aggression and low self-esteem as predictors of depression in Scottish young adults. The results of this study provide supporting evidence for the hypothesis that low self-esteem and high levels of aggression are associated with depressive symptoms or behaviors in Scottish adolescents. These findings are consonant with the published literature and extend the generalizability of findings to a sample of Scottish youths. The findings also extended generalizability to older adolescents and young adults from similar findings with children and early adolescent samples (Bandura et al., 1999; Orth & Robins, 2008).

The results of the current study show a negative correlation between low self-esteem and depression. The results also indicate that low self-esteem is a significant predictor of depressive symptoms and behaviors. This means that as a person’s self-esteem gets lower, he or she is more likely to experience feelings or symptoms of depression. Both of these results provide support for previous literature indicating that a lack of self-esteem is a significant predictor of the development of depression (Bandura et al., 1999; Orth & Robins, 2008).

The current research also provides evidence for the link between aggression and depression in young adulthood. Previous research by Bradshaw and Hazan (2006) and Morrow and colleagues (2006) found that covert aggression (i.e., hostility and anger) was significantly correlated with depression, while overt aggression (i.e., verbal and physical) was not. The current research also found similar results with covert aggression. Additional analysis showed that covert aggression was shown to predict depressive behaviors and symptoms.

Low self-esteem was a significant predictor of

### TABLE 1

<table>
<thead>
<tr>
<th>Variable</th>
<th>1</th>
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<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
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</thead>
<tbody>
<tr>
<td>1. Depressive Symptoms</td>
<td>-</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>2. Self-Esteem</td>
<td>- .634**</td>
<td>-</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>3. Aggression</td>
<td>- .384**</td>
<td>- .269**</td>
<td>-</td>
<td></td>
<td></td>
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<tr>
<td>4. Hostile Aggression</td>
<td>- .573**</td>
<td>- .664**</td>
<td>.571**</td>
<td>-</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. Anger Aggression</td>
<td>.314*</td>
<td>- .177</td>
<td>.886**</td>
<td>.367**</td>
<td>-</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. Physical Aggression</td>
<td>.153</td>
<td>.046</td>
<td>.857**</td>
<td>.184</td>
<td>.720**</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>7. Verbal Aggression</td>
<td>.138</td>
<td>-.063</td>
<td>.768**</td>
<td>.217</td>
<td>.649**</td>
<td>.653**</td>
<td>-</td>
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*p < .05, **p < .01
hostile aggression in this study. Links between these two variables were highlighted in previous research (Bradshaw & Hazan, 2006). Therefore, the current research suggests that low self-esteem and covert aggression are not only correlated with depressive symptoms and behaviors, but that they are also predictors of depression. The present research provides further support for the idea that covert aggression and low self-esteem are predictors of depression in young Scottish adults as well.

The current study focused on two commonly studied risk factors for depression, but examined a less-researched age group in Scotland. Research had found links between aggression, low self-esteem, and depression previously in adolescents and young adults in other countries, and this research was able to extend generalizability to Scottish young adults. This is an important research study for Scotland as they are seeking answers for the increases seen in depression of young adults.

**Limitations**

Due to time constraints, an important limitation was that sampling was limited to students at a large urban university in an introductory psychology class. This is not a representative sample of all Scottish young adults as there is great variability in settings (urban, rural) and educational attainment in Scottish young adults. Therefore, the focus of this research was limited to young adults who were academically oriented in an urban area of Scotland, making it unreasonable to generalize the results of this study to all Scottish young adults.

Additionally, the questionnaires used did not allow for clinical conclusions of depression. Rates found in this study were somewhat comparable to Scotland national statistics. An estimated 5.8% of men and 9.5% of women in Scotland will experience a depressive episode within a year (“Scottish Public Health Records,” 2009). Within this sample of 63, 26% of the women and 4% of the men indicated on the BDI-II that they will likely experience a depressive episode. The results from this study illustrate that depression is more likely experienced or reported by women, which is comparable to national statistics. Using self-report measures for these risk factors and for depression were also limitations in this research. It may be suggested that future research use more reliable means of measures to reduce the biases found in self-report methodology. However, despite these limitations, the present research was able to contribute and strengthen evidence for previous literature, significantly linking these risk factors to depression while also providing evidence for these factors in young Scottish adults.

**Future Directions**

In order to establish a causal link between self-esteem, aggression, and depression, longitudinal research is needed. It would be particularly powerful to investigate these correlations in one’s childhood, early adolescence, late adolescence, and adulthood. Are these common risk factors significant throughout the individual’s lifetime? Or are these correlations something that only emerge in adolescence and young adulthood? Longitudinal analyses would be useful because they would show consistencies in the data. Scotland mental health needs to continue research in all areas of development, as depression rates continue to increase. This research found evidence suggesting that low self-esteem and covert aggressive behaviors are significant predictors of depression in Scottish youth. These links have been found in children as well, but Scotland needs to continue finding evidence throughout a person’s entire lifespan to see how these factors influence the development of depression within the country. Obtaining more research-based evidence for contributing factors of depression may be valuable and useful for various interventions and treatments for Scottish youth.

**References**


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