

SELF CONCEPT SCREENING:
A PREDICTOR TO DEPRESSION

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A Predictor for Depression

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Abstract

Low self-concept is commonly identified as a symptom of depression. Research has found a high level of comorbidity between low self-concept and depression. However, this research considers which precedes the other. Research demonstrates that low self-concept acts as a filter in judging a situation, precipitating feelings of depression (Burwell & Shirk, 2006; Cole & Jordan, 1995; Cole, Martin, Peeke, Seroczynski & Hoffman, 1998; Hoffman, Cole, Martin, Tram & Seroczynski, 2000; Keyes, 2006; Schwartz et al., 2006). Thus, this research demonstrates that low self-concept can be utilized as an early indicator of depressive symptoms. This research analyzes a model that examines low self-concept as a predictor of later depressive symptoms in school-aged children.

Self-Concept Screening: A Predictor of Depression

Chapter 1: Introduction

Depression

Depression affects many children and adolescents. Research shows that about 9% of youth have reported severe depression by the age of 14 (Abela & Hankin, 2008).

Hammen and Rudolph (2003) report lifetime prevalence rates of major depression to be about 14% for youth ages 15-18. In addition 11% youth report minor depression.

Research indicates that many patients who experience depression do not have just a single episode. The risk of depression recurring in an adult population is 40% within 2 years and 80% within 5-7 years of the first episode (Hammen & Rudolph, 2003).

Similarly, this research indicates that children and adolescents face comparable recurring rates of depression and risk for a lifelong duration of depression. Other research indicates that a second episode of depression is likely to occur in 50-60% of patients (Solnek & Seiter, 2002). Therefore, early identification is pertinent in order to prevent the ill effects and recurring episodes of depression such as risk for anxiety, behavior problems, eating disorders and/or substance abuse (Solnek & Seiter, 2002). While depression is a disabling illness, it is also treatable. Awareness of depressive symptoms in children and adolescents can lead to early prevention efforts and treatment.

The risks of a single or an additional episode of depression indicate the importance of identifying youth who have symptoms of depression early. Some symptoms are similar between the children/adolescents and adult populations. Birmaher, Williamson, Dahl, Axelson, Kaufman, Dorn, et al. (2004) report that there are similar symptoms, duration and rates of recovery and recurrence between adults and children

diagnosed with depression. *The Diagnostic and Statistical Manual of Mental Disorders*, fourth edition revised (DSM-IV-TR) criteria is currently used to diagnosis depression in children and adolescents (American Psychiatric Association, 2000). For both groups, symptoms include either a depressed mood or loss of interest or pleasure for a period of two weeks or longer in addition to five or more of the following symptoms: significant weight loss or gain, insomnia or hypersomnia, slowness or psychomotor agitation, fatigue, feelings of worthlessness or extreme guilt, unable to think or concentrate, and/or thoughts of death (American Psychiatric Association, 2000).

Nonetheless, while there is a similar criterion for youth and adult depression, there is research that also indicates differing symptoms between the two populations (Hammen & Rudolph, 2003). Currently the only change to the criteria of the DSM-IV-TR between youth and adults is that irritability can be replaced for depressed mood (American Psychiatric Association, 2000). Several researchers indicate that children and adolescent symptoms of depression differ from those symptoms in the adult population, including: frequent and vague physical complaints (like headaches, stomachaches, etc.), socially withdrawn, body image dissatisfaction and elevated thoughts of suicide (Hammen & Rudolph, 2003; Rudolph, Hammen, & Daley, 2006; Rudolph & Lambert, 2007).

Depression can be often overlooked in youth because it is seen as a behavioral problem rather than depression (Shugart & Lopez, 2002). Shugart and Lopez (2002) report that when children are sad, irritable and/or frustrated, they will display outbursts and temper tantrums. Behavioral problems may be common in depressed children and adolescents, as it is an indicative symptom. However, there are many more symptoms

that children and adolescents display. Another important indicator for child and adolescent depression is a lack of desire to participate in enjoyable activities (Murphy, 2004), citing this as the most common symptom indicating depression. The difficulty with identifying many of these symptoms is that they are vague and immeasurable. Due to this difficulty in identifying depressive symptoms in youth, it is important to consider other ways to identify that a child or adolescent may be developing a mental illness.

Self-Concept

Studies indicate that depressive symptoms and self-concept are strongly correlated (Cole, Martin, Powers & Truglio 1996; Cole, Peeke, Dolezal, Murray & Canzoniero 1999; Tram & Cole 2000). This correlation may provide an opportunity to identify a child or adolescent's risk of depression.

Self-concept commonly refers to a person's view of themselves. This study uses Engler's (1999) model, defining self-concept as a function of how one perceives themselves in addition to the feedback one has from others in society. One filters information from others in order to better understand how one relates to the environment. One's understanding of his/her relation to the environment eventually develops into self-concept. Engler (1999) indicates that this understanding of self may not be a true reflection of the environment, as it is more an interpretation of others' values within that environment. What is judged good versus bad will be a product of the person's environment and then adjusted to one's value of those judgments, him/herself and their actions.

A person's understanding of his/her relation to the environment combined with the current situation develops into self-concept. The role one perceives they have within

that association helps to develop an understanding for the concept of self. Much of the understanding of the self has been elicited by outside sources, mainly by the family's perspective on society and culture during youth (Thompson & Goodvin, 2005). This information is then processed into a person's concept of the self and is used to understand one's degree of confidence, sociability, and empathy. The messages of good/bad, correct/wrong develop into a person's understanding of self and how that develops into an individual's understanding of his/her role and ability. If one is told numerous times that she is shy, her degree of sociability is going to be influenced by that outside message. This is similar for a child who is constantly told that he is a bad child. This message becomes how he relates to the world, and he will then internalize that he is bad.

Self-concept notions that are created by comparison to peers is another way that a child develops an understanding of his/her relation to others. A student's positive understanding of self allows the student to be more resilient to negative affect or to symptoms of depression (Cole et al., 1999). Negative affect is defined as, "a general distress factor, representing the temperaments and moods common to depression and anxiety, if not other disorders" in research of Clark & Watson (1991) (as cited in Cole et al., 1999, p. 851). This understanding of how one is compared to others leads individuals to rate their skills, feeling they are either competent or not in a particular area. This in turn has a role in the development of self-concept. One's self-concept affects his/her evaluation of the particular situation which in turn impacts how he/she interprets his/her self: competent/worthy/successful or the opposite.

Bong and Skaalvik (2003) describe how one's self-concept evolves through the comparison of peers. A person's self-concept will include views of him/herself as a

whole depending on how one functions comparatively to others in his/her environment. Bong and Skaalvik (2003) find that this general perception of the self influences many areas in a person's life including mental health. Their study indicates that self-concept has a role in the development of mental health or illness. This may signify that there is a need to study what contribution self-concept can have in providing information to indicate a risk of developing a mental illness.

Self-Concept and Depression

It is possible that a negative self-concept could indicate risk of depression. This is supported by considering the links that self-concept has with depression. Many studies have found a relation between negative self-concept, or something closely resembling it, and depression (Burwell & Shirk, 2006; Cole & Jordan, 1995; Cole et al., 1998; Hoffman et al., 2000; Keyes, 2006; Schwartz et al., 2006). For example, Hoffman et al. (2000) found that there is a strong negative correlation between positive self-appraisal and depressive symptoms among 6-7th graders. Burwell and Shirk (2006) found that self-worth contingencies predicted changes in depression over time in a longitudinal study of 8th and 9th graders. The authors suggest that self-evaluation represents a risk factor for the development of depression.

Tram and Cole (2000) found a relationship between self-perceived competence and depressive symptoms. Self-perceived competence is defined as the internalization of messages about his/her own worth from the environment which mediates between life events and depressive symptoms. Tram and Cole's (2000) research uses the Adolescent Perceived Events Scale, (Compas, Davis, Forsythe & Wagner, 1987) in their findings that the negative events in a person's life predict self-perceived competence, which in turn

predicted depressive symptoms. Their research found the relationship between negative life events and symptoms of depression were processed through self-perceived competence. Self-perceived competence [self-concept] impacted the extent of how negative life events influenced depressive symptoms.

Other studies have found self-concept influences how individuals perceive a negative experience impacting his/her life. The perspective on the role one plays in the negative experience depends on one's self-perceived competence (Tram & Cole, 2000). This role is seen either as contributing negatively or positively to the event. Therefore, it is the self-perceived competence that predicts depressive symptoms, and not the event alone (Tram & Cole, 2000). Negative self-concept also is associated with negative self-appraisal, general self-dissatisfaction, and pessimism (Cole et al. 1999). This negative self-concept is then built upon to develop distress leading to moods identified in depression and anxiety (Cole et. al., 1999).

Self-concept also correlates with the motivation one has to participate in a particular activity, such as academics or social activities. Studies have found that the better self-concept the student has, the more likely he/she is to be motivated to succeed and therefore participate in the activity (Graham, 1994). Cole et al. (1996) found a negative relation between depression and the individual's perceived competence in academics and social activities (-.65 to -.69). Interestingly, this study found that social competencies were more strongly correlated with depressive symptoms (-.74 to -.81). This may indicate that students who feel as if he/she relates well to others and to the environment not only have a higher rate of self-concept, but are also less prone to depressive symptoms.

Burwell and Shirk (2006) found similar results in their longitudinal study. Their findings indicate that a student's social contingency was significantly correlated with depression whereas academic contingency was not significantly related to depression. Thus, those who felt that they did not relate well with their peers were more prone to depression than those who felt that they were not as smart as peers. One defines themselves by the environment that surrounds him/her. This signifies that a feeling of social competency seem to affect depression. However, it does not always work in reverse. That is, a person who begins to feel more depressed is not automatically going to feel less competent because of the environmental factors that impact self-evaluation (Cole, et al, 1996).

Low self-concept is closely related with depressive symptoms. McCauley, Mitchell, Burke and Moss (1988) report that children and adolescents with a low self-concept (measured with Piers-Harris Children's Self-Concept Scale) tend to have higher rates of depression. Those with more negative views of themselves and the future were found to be clinically depressed. Furthermore, the McCauley et al. (1988) study did not find these negative views in those who have experienced a depressive episodes or other psychiatric disorders.

Chapter 2: Statement of Purpose

The assessment of self is important as it influences many areas in a person's life. Self-concept has a significant effect on the state one is in, including the risk of being in a depressive state. Previous research indicates a strong correlation between self-concept and depression. Cole et al. (1999) also find that this relationship is uni-directional, not

bi-directional. Negative self-concept has the possibility to impact or indicate depression. The current study hypothesized that low self-concept occurs prior to depressive symptoms. Thus, utilizing a screening method to assess low self-concept in order to predict risk level for the development of later depressive symptoms would be important.

The present study investigated the relationship between self-concept and depressive symptoms for youth from a longitudinal data base. Using the Add Health database (Harris, Florey, Tabor, Bearman, Jones, & Udry, 2003; Udry, 1998), this study analyzed early self-concept ratings' influence on later depressive symptoms. A second analysis will consider participants who scored low on the self-concept scale, but were not indicative of depression. This analysis also looks at those participants representing 15% of the highest depression ratings, using the clinical statistics that 15% of the population has depressive symptoms. This study hypothesized that low self-concept measured in Wave I will indicate the risk for symptoms of depression in Wave III.

Chapter 3: Method

Demographics

Participants for this study included a subset of participants who were part of The National Longitudinal Study of Adolescent Health (Add Health) (Harris et al., 2003; Udry, 1998). Add Health is a nationally representative study of students in 7th to 12th grade at the time of the first wave of data was collected. Eighty high schools and 52 middle schools in the United States were used to compile the information. A list of eligible schools were identified as a representation of schools in the United States using the following characteristics; region of country, urbanicity, school size,

school type, and ethnicity, (Harris et al., 2003; Udry, 1998). Information was obtained across three time-periods of questionnaires, interviews with students and their parents, school data and community information.

Procedures

Wave I questionnaires were administered in 1994-1995 to over 90,000 students aged 11-21. Following the initial data collection, in-home interviews were conducted with 27,000 selected participants. Wave II followed 15,000 of the original Wave I cases and also consisted of questionnaires for school administrators. Wave II interviews were administered one year later in 1996. Wave III was collected from July 2001 to April 2002, including interviews with over 15,000 respondents from Wave I. During this wave students were asked to complete another in-home interview, biomarker information and the Add Health Picture Vocabulary Test. Only Wave I and III were used for this research.

Current Study

In this study regression was used to consider the relationship between self-concept and depression while controlling for age, biological sex and income. This study used hierarchical regression in order to control these variables by removing the variance of these factors on depression in Wave III. This method allows us to determine the amount each variable contributes to the development of depression.

Participants

The participants in this study were 11,450 people out of the initial 20,743 participants following listwise deletion. Listwise deletion was used to eliminate participants with missing information in the following variables; depression, self-concept,

age, income and gender. The following number of cases was deleted based on each variable; 29 based on missing biological sex data, 5,392 based on missing total household income data, 10 based on missing age data, 26 cases based on missing depression data in Wave I, 16 based on missing self-concept data in Wave I, and 3,849 based on missing depression data in Wave III. The mean age of the final sample was 15.46 years (SD = 1.7), with a range of 11-21 (at the time Wave 1 data were collected). There were 5,469 males (47.8%) and 5,981 females (52.2%) in the study. The mean household income of the sample was 46,550 dollars per year (SD = 50,227), ranging from \$0 to more than \$999,000.

Gender, Age and Socioeconomic Status Considerations

The current study controlled for gender, age and socio-economic status as variables that impact depressive symptoms. Studies indicate that women have twice the level of depression than men (APA, 2000; Nolen-Hoeksema, 1990).

Age will be considered due to the change of depression over time. Twenge and Nolen-Hoeksema (2002) found that girls had a significant increase in depressive symptoms, while males did not have a significant change as they aged. A longitudinal study following youth from 3-21 found a significant increase of depressive symptoms for males and females at age 15 (Hankin, Abramson, Moffitt, Silva & McGee, 1998).

Socioeconomic status (SES) has been a significant variable in studies considering the impacts of depression. Kessler, Berglund, Demler, Jin, Koretz, Merikangas, et al. (2003) conducted home-interviews with over 9,000 participants nationwide about depression. This study found that those participants who were living near or in poverty had meaningfully elevated levels of major depression over a 12 month period (Kessler et

al., 2003). Similarly, Roberts, Roberts and Chan (1997) found that students with a lower SES had higher prevalence of depression. However other studies have not found a significant difference between SES and depressive symptoms (Twenge & Nolen-Hoeksema, 2002). Given that this issue has not yet been resolved, this study will control for income in consideration of the impact that SES may have on depression.

Chapter 4: Measures

Self-Concept Scale

The Self-Concept scale utilized in this study is composed of 4 items from the Add Health survey, including: “past 7 days felt you had many good qualities”, “past 7 days have a lot to be proud of,” “past 7 days felt like yourself,” “past 7 days felt like you were doing things right.” Internal consistency of this scale, using Cronbach’s alpha test of reliability, indicates adequate reliability ($\alpha=.78$) (Bordens & Abbott, 1991). Deletion of any of these items decreased the reliability.

Each item was selected due to the relevance to prior research. Item one, “past 7 days felt that you had many good qualities”, reflects the definition of self-concept. This question measures elements of self-concept as it is a subjective measure of how one would rate (good to bad) due to the relation and feedback one has with his/her environment. Good is a comparison word that leads one to judge his/her actions to the values of society, similar to Engler’s (1999) definition and understanding of self-concept as an interpretation of the environment’s value.

Item 3, “in the past 7 days rate how you like yourself,” also relates back to Engler’s (1999) definition of self-concept of how one perceives themselves in addition

to the feedback one has from others in society. This question also relates to Bong and Skaalvik's (2003) research that self-concept predicts one's satisfaction level with him/herself.

Item 2, "having a lot to be proud of" and item 4, "feeling like you were doing things right in the past 7 days" both contribute greatly to self-concept. These two questions relate back to Cole et al. (1999) research indicating that the rating of one's social competency in comparison to others leads to one's understanding of self-concept. Having either a positive or negative understanding of him/herself and his/her actions leads one to feel competent and proud as well as able to judge those actions as successful or unsuccessful (Cole et al., 1999). This decision also impacts how one's comparison of doing things right compared to society would rate if he/she was doing things right.

These questions rely on self-report of the students in our study, rating the questions on a 5-point Likert scale of strongly agree, agree, neither agree/disagree, disagree and strongly disagree. Because these scales using different 5 point markers (either 1-5 or 0-4), the scores were converted into z-scores to make the ratings similar and easy to compare between measures of depression.

Depressive Symptoms Scale

Depression is commonly distinguished between 2 categories; major depression or dysthymia. Major depression is identified as a disabling disease that lasts at least two weeks and significantly impairs one from functioning normally or causes significant clinical distress (American Psychiatric Association, 2000). Symptoms of major depression include either a depressed mood or loss of interest or pleasure for a period of

two weeks or longer. This occurs in addition to five or more of the following symptoms; significant weight loss or gain, insomnia or hypersomnia, slowness or psychomotor agitation, fatigue, feelings of worthlessness or extreme guilt, unable to think or concentrate, thoughts of death (American Psychiatric Association, 2000). Dysthymia is a more persistent form of depression, lasting for one year in youth and children and 2 years in adults (American Psychiatric Association, 2000). Dysthymic conditions include depression and two or more of the following symptoms; loss or increase in appetite, insomnia or hypersomnia, loss of energy, low self-esteem, unable to concentrate or make decisions and feeling hopeless (American Psychiatric Association, 2000).

The depression scale utilized in this study is composed of 8 items from the Add Health survey, including: “past 12 months often cried,” “past 7 days bothered by things,” “past 7 days couldn’t shake off the blues,” “past 7 days had trouble concentrating,” “past 7 days were depressed,” “past 7 days too tired to do things,” “past 7 days were sad,” and “past 7 days felt people disliked you.” Again we used the Cronbach’s alpha test of reliability, with results indicating adequate reliability/internal consistency ($\alpha=.80$) (Bordens & Abbott, 1991). These items were selected because they are similar to the symptoms of depression that are listed above (American Psychiatric Association, 2000).

These 8 questions were asked on different scales, 0-4 on the question asking if the participant has cried often in the past 12 months: never, just a few times, once a week, almost every day, or every day. All the other questions were considered on a scale of 0-3: never, sometimes, a lot of the time, or most/all of the time respectively. Similar to the self-concept scale, these questions were converted into z-scores to determine consistency

within the depression scale as well as to have easy comparison with the self-concept scale.

External validity for the measure of depression is established by a comparison to Beck's depression inventory (Beck & Steer, 1987; Beck, Steer & Garbin, 1988).

These items were selected due to the similarity which they have to *The Beck Depression Inventory* (Beck & Steer, 1987; Beck, Steer & Garbin, 1988), an inventory designed to measure the severity of depression by considering hopelessness, irritability, guilt and fear.

Analysis

This study examined the relationship between self-concept and depression; hypothesizing that low self-concept occurs prior to depression. Answers to questions relating to self-concept and depression are drawn from Wave I and III, which occur 7 years apart.

Participants' measures of depression and self-concept were assessed in Wave I. A regression analysis (using the complete sample of over 11,000 participants) considered the significance of the relation that self-concept at Wave I had on depression at Wave III. A second regression analysis in which those who rated below the 0 z-score for depression in Wave I were excluded so that only cases rated above the mean (> 0 , z score) for depression were considered. Those with depression in Wave I were excluded from the second analysis in order to examine the contribution of self-concept in Wave I on the development of depression in Wave III. A final analysis considered the clinical population of 15%. In order to do this, our research considered participants who rated as the lowest 15% of depression scores; therefore

indicating more depressive symptoms. Fifteen percent was chosen due to the research indicating that 14% of the population of 15-18 year olds will have lifetime prevalence of major depression (Hammen & Rudolph, 2003). Fifteen percent was used instead of 14% as it allowed some consideration for the additional 11% of youth that report feelings of minor depression (Hammen & Rudolph, 2003).

Regression was used in this study to consider the relation between self-concept and depression while controlling for the other variables of age, biological sex and income. This study used hierarchical regression in order to control for these variables by removing the variance of these factors on depression in Wave III, allowing the study to determine the amount each variable contributes to the development of depression.

Chapter 5: Results

A regression analysis was conducted with depression scale in Wave III as the dependent variable. Age, income, sex and self-concept were used as the independent variables.

The first analysis included all participants, even those who were rated as depressed in Wave I, considering independent variables of age, income, sex and self-concept in Wave I. Results of the relation between the dependent and independent variable are shown in Table 1.

This analysis demonstrated a significant relationship between the change in self-concept and the change in depression $F(4, 11447) = 87.36, p < .01$. The amount self-concept relates to depression in a unique aspect can be derived from the partial and part

correlations in these two analyses. This demonstrates that self-concept in Wave I has a unique contribution to depression in Wave III. This is exemplified by the significant partial .132 and part correlation of .131 ($p < .01$). The multiple R^2 is .030 as shown in Table 4. This R^2 demonstrates the change in overall variance that is accounted for by including self-concept above and beyond age, sex and income on future depressive symptoms.

The second analysis excluded the participants who rated as depressed (< 0 , z score) in Wave I due to confounding variables. Due to this exclusion, 4,401 participants were eliminated. That left 6,949 participants to be considered in this second analysis. This regression analysis was conducted with depression scale in Wave III as the dependent variable and age, total household income, sex and self-concept in Wave I as independent variables. Results are shown in Table 2. Results indicate a significant relationship of depression with sex ($\beta = .065$, $t(6949) = 5.463$, $p < .01$), total household income ($\beta = -.034$, $t(6949) = -2.809$, $p < .01$), and age ($\beta = -.038$, $t(6949) = -3.213$, $p < .01$). This significant association was also found with self-concept in Wave I ($\beta = .77$, $t(6949) = 6.373$, $p < .01$). There is a significant relationship in the change of the rate of self-concept and the change of the rate of depression $F(4, 6944) = 22.42$, $p < .01$. When depression is controlled for in Wave I these correlations are still significant ($p < .01$) having a .76 partial and part correlation.

The final analysis considers the clinical percentage of 15%. This percentage was chosen as it more closely resembles the lifetime prevalence of depression in teens (Hammen & Rudolph, 2003). Participants who scored the lowest 15th percentile on the depression scores were excluded to determine if the change in self-concept and the

change in depressive symptoms were still significant without those participants who rated with higher levels of depression in Wave I. Due to this elimination, 1,723 participants were eliminated in the consideration due to already falling in the 15% and therefore already defined as depressed, leaving 9,727 participants.

Regression analysis was conducted with depression scale in Wave III as the dependent variable and age, sex, income and self-concept as independent variables. There was no significant relationship in the change of the rate of self-concept and the change of the rate of depression when the lower 15% was examined $F(5, 1717) = 3.52$. This may be due to restriction of range, $R^2 = .01$ and the adjusted $R^2 = .007$. Both of these statistics are insignificant, as shown in Table 4.

Chapter 6: Discussion

This study considered the impact of self-concept on future depressive symptoms. A significant relation existed between low self-concept and later depressive symptoms $F(4, 11447) = 87.36, p < .01, F(4, 6944) = 22.42, p < .01$. The findings indicate that self-concept is a possible contributor to the development of depression at a later time. This demonstrates that even when those below the mean in Wave I depression are excluded, self-concept in Wave I still has a unique contribution to depression in Wave III. The R^2 for this analysis was .013, demonstrating the change in overall variance that is accounted for by including self-concept above and beyond the other variables controlled for. As shown in Table 3, the control variables also accounted for significant variance in the depression scale in Wave III. This was found even when those below the mean for rates of depression are excluded from Wave I, low self-concept still contributes to depression

in Wave III. This directional relationship indicated that low self-concept comes prior to and may contribute to the development of depression.

When considering the lower 15%, indicating the clinical population, there was no significant relationship. This finding may be due to restriction of range. This restriction of range reduces the correlation coefficient compared to the score with a broader range, making it no longer significant.

This study hypothesized that low self-concept precedes the development of depressive symptoms when considering a general population. Results from the current study provide support for the hypothesis that self-concept indicates risk for development of depression. For this sample, a major finding of this research is that low self-concept does contribute a significant amount of variance to the development of future depressive symptoms. This was found even when those who rated below the mean of depression in Wave I were removed from the study.

This research builds upon the many studies that find self-concept and depression correlated (Cole et al., 1999; Cole & Jordan, 1995; Cole et al., 1998; Hoffman et al., 2000; McCauley et al., 1988; Tram & Cole, 2000) as it leads research closer to identifying self-concept as an indicator that is predictive of the development of depression.

This finding has important implications for future studies. Self-concept's significant contribution to the development of depression implies that a screening method for low self-concept could be used to determine those who would be at risk for developing depression. This screening mechanism could provide a process to examine a student's need for supports that would prevent the mental illness of depression. Future

attempts to identify specific screening for low self-concept will indicate a need to intervene with youth in hopes to prevent later depression.

Certain limitations of this study suggest possibilities for future studies. The measures of this study are potentially problematic. While similar questions to depression measures were used, our study used fewer questions. The current study was not able to consider other reasons, besides depression, for feeling blue in the past 7 days (as questions were stated in the Add Health data set). These additional factors might include a death in the family, a break-up with a partner or a fight with a friend, so on and so forth. This limits this study as those participants who had a mood shift rather than having depressive symptoms would be included in those at risk for developing depression. Similarly, the current study was also not able to make a distinction between dysthymia and major depressive episodes in participant's symptoms. The difference between these labels is the duration and the extent of the symptoms. In order to diagnosis depression, one would have symptoms for 2 weeks or longer and dysthymia would be prevalent for at least one year for youth (American Psychiatric Association, 2000). The questions stated in the Add Health questionnaires only consider symptoms for the past 7 days, lacking in the time-frame for diagnosis of depression.

Another shortcoming of this study was due to the limitations the researchers found in creating the two scales rating depression and self-concept. Due to the confines of a pre-existing data base, the scales were limited to information asked by previous researchers instead of assessing a full self-concept or depression scale. For example, there are only 4 questions that pertain to self-concept, limiting this study's analysis of self-concept. Further studies are needed in order to examine the measure of self-concept

in hopes to provide preventative considerations for those at-risk of developing depression. As there are many questionnaires to evaluate self-concept, future studies could also consider using multiple questionnaires to compare the scales measuring self-concept.

This study finds that low self-concept has a unique contribution to the development of depressive symptoms, implying that self-concept questionnaires could be used as a screening process for depression. This screening process could be very valuable in order to provide an intervention to help prevent depression. It is important that preventative measures be explored with a disabling mental illness like depression. These measures can encourage supports for students to develop healthy self-concepts and therefore alleviate feelings of chronic and disabling depression. When students have higher self-concepts they are less likely to develop depression and more likely to reach their full potential.

Table 1.
*Regression Analysis Testing the Significance of Relations with Depression and Self
 Concept When Including those who rated as Depressed in Wave I*

Predictor	Self-Concept	Depression
Depression	.000 **	
Biological Sex	.000 **	.000 **
Total Household Income (in thousands)	.013 *	.000 **
Age	.000 **	.030 *
Self Concept		.000 **

* p<.05, ** p<.01

Table 2.
*Regression Analysis Testing the significance of relations with Depression and Self
 Concept When Eliminating Participants who rated as Depressed in Wave I.*

Predictor	Self-Concept	Depression
Depression	.000 **	
Biological Sex	.000 **	.000 **
Total Household Income (in thousands)	.006 **	.005 **
Age	.000 **	.000 **
Self Concept		.000 **

* p<.05, ** p<.01

Table 3.
*Regression Analysis Testing the significance of relations with Depression and Self
 Concept for 15% of the population*

Predictor	15%
Depression	
Biological Sex	.010
Total Household Income (in thousands)	.042
Age	.817
Self Concept	.384

* p<.05, ** p<.01

Table 4.
Regression of Depression Scores and Self-Concept Controlling for Other Variables

Model 2 Parameter	B(Std. Error)	Beta	t	Sig.
Depression Wave I included				
Biological Sex	.107 (.013)	.078	8.394	.000**
Total Household Income (in thousands)	-.001 (.000)	-.044	-4.820	.000**
Age	-.009 (.004)	-.023	-2.441	.015*
Self Concept	.115 (.008)	.133	14.237	.000**
Depression Wave I controlled				
Biological Sex	.067 (.014)	.056	4.654	.000**
Total Household Income (in thousands)	.000 (.000)	-.031	-2.601	.009**
Age	-.015 (.004)	-.043	-3.585	.000**
Self Concept	.068 (.011)	.077	6.373	.000**
Depression Considering 15% Population				
Biological Sex	.081 (.031)	.064	2.590	.010
Total Household Income (in thousands)	-.001 (.000)	-.049	-2.038	.042
Age	.002 (.009)	.006	.232	.817
Self Concept	-.016 (.018)	.023	-.871	.384
Depression Considering 35% Population				
Biological Sex	.012 (.007)	.028	1.730	.084
Total Household Income (in thousands)	.000 (.000)	-.035	-2.245	.025
Age	-.001 (.002)	-.008	-.520	.603
Self Concept	.007 (.005)	.024	1.422	.155

* $p < .05$, ** $p < .01$

Note $R^2 = .030$ for Depression Wave I Included, R^2 Change = .017 ($p < .01$)

Note $R^2 = .013$ for Depression Wave I Controlled, R^2 Change = .006 ($p < .01$)

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