THE INFLUENCE OF SOCIAL SELF-EFFICACY, SELF-ESTEEM, AND PERSONALITY DIFFERENCES ON LONELINESS AND DEPRESSION

DISSERTATION

Presented in Partial Fulfillment of the Requirements for
the Degree Doctor of Philosophy in the
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This study investigated the relationship of social self-efficacy with various personality and psychological adjustment variables in a sample of 696 college students. Path models were proposed to examine the gender role variables of instrumentality and expressiveness in relation to social self-efficacy and the psychological adjustment variables of self-esteem, loneliness, and depressive symptomatology. The resulting path models indicate that these variables account for 41% of the variance in depressive symptoms and 45% of the variance in loneliness. In the model for depression, social self-efficacy mediates the relationships between instrumentality and depression and between instrumentality and self-esteem. Self-esteem mediates the relationship between social self-efficacy and depression. In the model for loneliness, social self-efficacy mediates the relationship between instrumentality and loneliness, and expressiveness partially mediates the relationship between social self-efficacy and loneliness. Additionally, self-monitoring was tested as a possible moderator in the relationship between social self-efficacy and depression and social self-efficacy and self-esteem, but non-significant results suggest that self-monitoring does not moderate either of these relationships. These findings provide new information on how social self-efficacy, self-esteem, and gender role variables may serve to protect against depression and loneliness and have implications for possible counseling interventions.
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CHAPTER 1

INTRODUCTION

1.1 Background

In social situations, individuals have varying perceptions of their ability to successfully interact with others. In other words, their self-efficacy beliefs reflect their level of social confidence (Bandura, 1977). The possession of strong self-efficacy beliefs has been related to positive outcomes in academic achievement (e.g. Bandura, Pastorelli, Barbaranelli, & Caprara, 1999) and career choice (e.g. Betz & Hackett, 1997), and also to reduced levels of depression (e.g. Ehrenberg, Cox, & Koopman, 1991). The implications of self-efficacy in the social domain have also been related to constructs such as social anxiety, shyness, and self-esteem (Smith & Betz, 2000).

Bandura’s (1977) theoretical model of perceived self-efficacy beliefs includes postulated sources of efficacy information in addition to postulated outcome variables, which include approach versus avoidance, persistence, and performance (see Figure 1.1). The study of the outcome variables related to social self-efficacy illustrates the level of influence the construct has on a variety of levels of functioning. For example, loneliness, defined as the perceived lack of a desired amount or quality of social interaction, has been identified as a negative correlate of social confidence (Cheng & Furnham, 2002). In addition, the relationship between social self-efficacy and depressive symptomatology
has been well-established, with individuals with higher levels of perceived social self-efficacy exhibiting lower levels of depression (Smith & Betz, 2002; Stroiney, 2002), and self-esteem has been demonstrated to have a moderate, positive correlation with social self-efficacy (Smith & Betz, 2002). These psychological adjustment variables are also interrelated, with higher levels of self-esteem being associated with reduced levels of both depressive symptomatology and loneliness (e.g. Ouellet & Joshi, 1996).

The relationship between social self-efficacy and psychological adjustment has implications for the treatment of mental health issues because it suggests that an increase in social self-efficacy can increase levels of self-esteem and reduce levels of depression and loneliness. Studies that evaluate interventions designed to increase the sources of self-efficacy have produced evidence that perceived efficacy expectations improve as a result of the intervention (Betz & Schifano, 2000). In light of this, the study of social self-efficacy may have practical implications for counseling as well as implications for understanding psychological processes and behavior change.

In examining the relationship of social self-efficacy and adjustment variables, several other constructs are also of interest. First, the constructs of instrumentality and expressiveness have been linked to both social self-confidence and psychological adjustment. These constructs are currently accepted as the underlying traits measured by traditional measures of masculinity and femininity, as first proposed by Spence and Helmreich (1978), and consist of the characteristics generally associated with traditional beliefs about masculinity and femininity. Instrumentality is a constellation of traits defined by assertiveness, independence, and self-reliance while expressive individuals are considered more nurturing, social, and sensitive (Spence & Buckner, 2000). These
constructs have been explored in relation to a variety of social variables. Zeldow, Clark, and Daugherty (1985) found that both instrumentality and expressiveness are related to interpersonal satisfaction, demonstrating that these traits have some influence in the social domain. In addition, higher degrees of instrumentality and expressiveness have been demonstrated to be associated with increased levels of social self-efficacy (Stroiney, 2002).

In regards to psychological adjustment, the evidence supports a consistent positive correlation between instrumentality and self-esteem (Allgood-Merton & Stockard, 1991) and a negative correlation between instrumentality and the psychological adjustment variables of loneliness and depressive symptomatology (Cramer & Neyedley, 1998; Roos & Cohen, 1987). These findings are of interest in the study of gender differences, as women often score higher on measures of depression than men (Sprock & Yoder, 1997), but men score higher on measures of loneliness than women (Cramer & Neyedley, 1998). Other studies suggest that instrumentality serves as a moderator between constructs such as negative life events and symptoms of depression (e.g. Marcotte, Alain, & Gosselin, 1999). That is, the postulated relationship of negative events to depressive symptomatology may be muted or minimized in individuals high in instrumentality.

There is less evidence regarding the relationship between expressiveness and psychological adjustment, but some evidence has supported expressiveness as a predictor of more positive psychological adjustment along with instrumentality (e.g. Hunt, 1993; Waelde, Silvern, & Hodges, 1994). When studied in situations involving interpersonal interactions, the moderating effect on depressive symptomatology appeared even stronger.
As for loneliness, evidence supports the role of expressiveness in decreasing loneliness through the increase of meaningful social interactions (Wheeler, Reis, & Nezlek, 1983). Self-esteem has also been related to expressiveness, but it has a less consistent, weaker relationship with expressiveness than with instrumentality (Allgood-Merton & Stockard, 1991).

A final variable of interest in the relationship between social self-efficacy and psychological adjustment is self-monitoring. Self-monitoring, defined as the desire and ability to change one’s behavior in different social situations, has been an influential construct in the study of social behavior (Snyder & Gangestad, 1986). Although its relationship with social self-efficacy and psychological adjustment has not been studied extensively, self-monitoring has been shown to moderate some relationships between personality variables and psychological adjustment (Gonnerman, Parker, Lavine, & Huff, 2000). Based on this evidence, the role of the personality variables of instrumentality, expressiveness, and self-monitoring are worthy of inclusion in the study of the relationship between social self-efficacy and psychological adjustment.

1.2 Objectives

The purpose of this study is to further explore the relationship between social self-efficacy, other personality variables, and psychological adjustment. To fulfill this purpose, the first goal was to replicate and further explore the relationships in the path model tested by Stroiney (2002), where social self-efficacy mediated the relationship between instrumentality and depressive symptomatology, and expressiveness partially mediated the relationship between social self-efficacy and depressive symptomatology (see Figure 1.2). The replication serves to confirm the fit of the model. The further
exploration involved a test of the model separately for each gender and the examination of the correlational relationship between expressiveness and levels of depression with a larger sample size. Gender differences were observed previously, with the relationship being significant for males and non-significant for females, but the difference in correlations was not itself significant (Stroiney, 2002). With a larger sample size, which resulted in more statistical power, a better understanding of this relationship could be achieved.

The second goal of the study was to achieve further understanding of the role of social self-efficacy and gender role variables in psychological adjustment with the addition of the variables of self-monitoring, self-esteem, and loneliness. First, five proposed models were tested and evaluated. The research strategy combined the use of alternative models with the model generation and modification strategies for structural equation modeling discussed by MacCallum and Austin (2000). The alternative model strategy involves evaluating a variety of theoretically possible models and selecting the model with the best fit. The model generation and modification strategy involves testing a model first using a calibration sample and making modifications. If changes are necessary, the model is cross-validated using the validation sample. Therefore, for this study, three alternative models for depression and two for loneliness were proposed and tested, and the best fitting model was selected for each outcome variable. If, however, a modification of one or more of the models was warranted, the model(s) would be modified and cross-validated. In this study, modifications were not warranted, so the alternative model strategy was the only strategy used in practice.
The models for depression were proposed based both on past research evidence and hypotheses unique to this research. In each proposed model, self-monitoring was included as a moderator of the relationship between social self-efficacy and depressive symptomatology. This relationship, however, was not tested in the original analyses of each model and would only be included if support was found for a moderating role between these variables. The first of the models for depression simply added self-esteem to the existing model of social self-efficacy, instrumentality, expressiveness, and depressive symptomatology (Stroiney, 2002), utilizing the established relationships between instrumentality and self-esteem (e.g. Hirschy & Morris, 2002) and self-esteem and symptoms of depression (Smith & Betz, 2002; see Figure 1.3). The second model was comprised of these same pathways, but the pathway from expressiveness to depression, which previously had a non-significant path coefficient (Stroiney, 2002), was deleted, and a pathway was included from expressiveness to self-esteem, suggesting that the relationship between expressiveness and depressive symptomatology may be mediated by self-esteem (see Figure 1.4). This relationship was supported by the larger amount of literature demonstrating a relationship between expressiveness and self-esteem (e.g. Allgood-Merten & Stockard, 1991) and the less supportive results in studies of the relationship between expressiveness and depressive symptomatology (e.g. Roos & Cohen, 1987; Stroiney, 2002). The third model for depression included a direct pathway between social self-efficacy and self-esteem but did not include the pathway between instrumentality and self-esteem, hypothesizing that the mediating role of social self-efficacy for the relationship between instrumentality and self-esteem is similar to its role...
in mediating the relationship between instrumentality and depressive symptomatology (see Figure 1.5).

Two models were also tested with loneliness as the outcome variable. It was hypothesized that the relationships would be similar to those for depression, but some differences were also expected. In the first model, a direct pathway was included between social self-efficacy and self-esteem, but self-monitoring was included as a possible moderator in this relationship. Again, self-monitoring was not included in the original analysis of the model. Also in this model, self-esteem was included as a predictor of loneliness and an outcome variable for instrumentality (see Figure 1.6). In the second model for loneliness, self-monitoring was not included, but the relationship between expressiveness and loneliness was mediated by self-esteem, similar to the second model for depression discussed above (see Figure 1.7). It was hypothesized that one or more of the proposed models for each outcome variable will fit the data in this study.

Finally, to explore the role of self-monitoring, its role as a mediator in the relationship between social self-efficacy and depressive symptomatology and between social self-efficacy and self-esteem was tested. If a moderating role were found, the sample would be divided into high and low self-monitors and the original path model would also be tested separately for these two groups. Because no such relationship was found, self-monitoring was not included as a moderator in the selected models.
Figure 1.1: Bandura’s model of perceived self-efficacy
Figure 1.2: Original model for depression
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Figure 1.6: First proposed model for loneliness
Figure 1.7: Second proposed model for loneliness
CHAPTER 2

REVIEW OF THE LITERATURE

2.1 Overview

The purpose of the present study was to apply self-efficacy theory (Bandura, 1977) to related personality and psychological adjustment variables. In reviewing the literature, it is important to first explore the definition and measurement of social self-efficacy. Subsequently, the relationship between social self-efficacy and the personality variables of instrumentality, expressiveness, and self-monitoring will be explored. Next, social self-efficacy will be reviewed in relation to the psychological adjustment variables of depressive symptomatology, loneliness, and self-esteem. Finally, the relationship between these personality and psychological adjustment variables will be reviewed.

2.2 Definition and Measurement of Social Self-Efficacy

The social domain of self-efficacy is based on the application of Bandura’s (1977) theory of self-efficacy to social situations. Bandura (1977) proposed self-efficacy theory as a model for explaining the cognitive processes in producing change in psychological treatment settings. The basis of this theory is that an individual’s perceived level of self-confidence, or self-efficacy, in a particular domain influences the individual’s change-producing behavior. More specifically, it influences whether the individual approaches or
avoids the domain in question, the actual performance level in that domain, and the
tendency to persist in completing a related task.

This model also identifies four sources of efficacy information. The first of these
is performance accomplishments, which is the past performance in and exposure to a
domain. Secondly, vicarious learning is the person’s level of exposure to others who have
performed the behavior through processes such as modeling. Emotional arousal is the
level of anxiety or other positive or negative emotions that the thought of performing the
behavior produces, and verbal persuasion is the level of outright encouragement an
individual receives. In his theoretical model, Bandura suggests that various treatment
techniques supply one or more of these sources of efficacy information and are therefore
successful because they produce change through increasing perceived self-efficacy.

The construct of social self-efficacy stems from this theory, with the domain
being perceived self-efficacy in social situations. Sherer et al. (1982) first introduced
social self-efficacy as a separate domain during the development of the Self-efficacy
Scale. They developed this scale to measure generalized self-efficacy, but found, through
factor analysis, that six of the scale items produced a subscale addressing items related to
social interactions. Analysis of validity information from the social interactions subscale
revealed weak correlations of social self-efficacy with levels of control and self-esteem.
Also, in an employment setting, analyses revealed negative correlations with the number
of jobs quit \((r = -.204)\) and number of times fired \((r = -.304)\), suggesting possible
implications for career development.

Because much of the subsequent research on social self-efficacy has been related
to children and adolescents, measurement of the construct was established early in these
populations (Wheeler & Ladd, 1982; Connolly, 1989). Wheeler & Ladd (1982) developed a scale to assess social self-efficacy in children, using third, fourth, and fifth grade students. This scale contained subscales for conflict and non-conflict situations. In a scale to assess social self-efficacy in adolescents, Connolly (1989) focused on areas that are particularly difficult for this age group. Validity data in this study revealed negative correlations with self-concept variables and lower levels of social self-efficacy in a psychiatric population, which also suggested as possible relationship between social self-efficacy and mental health or adjustment. More recently, Matsushima and Shiomi (2003) developed an additional scale to measure social self-efficacy for high school students. These authors were interested in the role of social self-efficacy in the ability to cope with interpersonal stress, and found that social self-efficacy did in fact predict decreased interpersonal stress and increased coping skills for this stress.

Social self-efficacy research in college and adult populations has relied heavily on Sherer et al.’s (1982) social subscale of the Self-Efficacy Scale. In an effort to create a more complete, theoretically based (as opposed to factor analytic) measure, Smith & Betz (2000) created the Scale of Perceived Social Self-Efficacy. This scale measures perceived confidence in a variety of social situations, including such areas as assertiveness and social influence as well as general social ability. The validity data demonstrates a correlation between social self-efficacy and the constructs of social anxiety, shyness, and social efficacy in career settings. In subsequent studies, this scale has proven to be a reliable and valid measure of social self-efficacy (Smith & Betz, 2002).

Social self-efficacy research in adult populations has also focused on the study of social anxiety disorder. Gaudiano and Herbert (2003) defined social self-efficacy in
relation to social anxiety disorder as a feeling of confidence in an ability to convey a favorable impression on others. As this is a primary concern in social anxiety disorder, these authors found this definition to be more applicable to the treatment of social anxiety disorder. As a result, Gaudiano and Herbert (2003) developed a new scale of Self-Efficacy for Social Situations (SESS) and validated the scale using individuals currently experiencing social anxiety disorder. Although this scale is designed specifically for use in the treatment of social anxiety disorder, its validity further demonstrates a relationship between social self-efficacy and mental health variables as well as the overall importance of the construct.

2.3 **Social Self-Efficacy and Personality Variables**

Social self-efficacy has consistently been related to various personality variables. Of interest in the present study are its relationship with the gender role variables of instrumentality and expressiveness as well as its relationship with self-monitoring. The established relationship between social and efficacy variables and the gender role variables will first be reviewed, followed by the less established role of self-monitoring.

2.3.1 **Social Self-Efficacy, Instrumentality, and Expressiveness**

One relationship of interest when studying social self-efficacy is its relationship with gender or gender roles. Because gender role traits have been established as better predictors of many psychological variables, including social variables, than is gender itself (Orlofsky & Stake, 1981), the gender role characteristics of instrumentality and expressiveness are of interest in the present investigation. These traits are currently accepted as the underlying traits measured by traditional measures of masculinity and femininity, as proposed by Spence and Helmreich (1978). Instrumentality is a trait
associated with assertiveness, independence, and self-reliance while expressive individuals are considered more nurturing, social, and sensitive (Spence & Buckner, 2000). The most common measures of these traits, originally designed to measure masculinity and femininity, are the Bem Sex Role Inventory (BSRI; Bem, 1974) and the Personal Attributes Questionnaire (PAQ; Spence, Helmreich, & Stapp, 1974, 1975) and contain such items as “independent”, “competitive”, and “decisive” for instrumentality and “understanding”, “warm”, and “gentle” for expressiveness.

Bem’s (1974) original reason for the development of the BSRI was to use the traits of masculinity and femininity to study the psychological characteristic she called “androgyny”. The Masculinity and Femininity scales consist of characteristics considered socially acceptable for each gender in American society. The scales were designed to measure the degree to which an individual has internalized sex-role stereotypes. Additionally, the inventory classifies individuals into the categories of androgynous (high on both), masculine, feminine, and undifferentiated (low on both), and Bem argues that androgynous individuals are the most psychologically healthy. In the psychometric analyses of the scale, Bem reports that the two scales are not significantly correlated ($r = .11$ and $r = -.02$ for males and $r = -.14$ and $r = -.07$ for females). The PAQ (Spence et al., 1974,1975) is similar in its psychometric properties.

Due to societal changes since the development of these scales, Twenge (1997) assessed the degree to which these traits have changed in the years since their creation. This meta-analysis, incorporating 63 studies using the BSRI and 40 studies using the PAQ, demonstrated that women’s scores on the Masculinity (instrumentality) scales have increased linearly over time, suggesting that cultural changes have decreased gender
differences on this scale, although men still score consistently higher than women. On the
Femininity (expressiveness) scale, however, neither men nor women have increased
significantly, indicating that gender still plays a role in the trait of expressiveness.

Spence and Buckner (2000) sought to confirm Twenge’s (1997) findings in an
empirical study measuring gender comparisons on the various items on the scales of both
the PAQ and the BSRI. Their results support the findings that men and women differ
more on expressiveness than they do on instrumentality, and in contrast to Twenge’s
conclusions, they found that men scored significantly higher on only 9 of the 22
instrumentality items used. This suggests that gender differences in instrumentality have
decreased significantly over time, but that expressiveness is still a characteristic more
often associated with females.

The gender role variables of instrumentality and expressiveness were first related
to the interpersonal domain in the context of comparing their influence on many
psychological variables. Jones, Chernovetz, and Hansson (1978) conducted a study where
women were sex-typed as either masculine, feminine, or androgynous and found that
women typed as masculine (instrumental) but not feminine (expressive) had the lowest
levels of shyness, had the best relations with the opposite sex, were the most extroverted,
and were less sensitive to criticism. Additionally, feminine women expressed a desire to
acquire more instrumental characteristics. This study clearly relates instrumentality to
positive social interactions, but does not clarify the role of expressiveness.

Orlofsky and Stake (1981), however, did find some support for a positive effect of
expressiveness in the interpersonal domain. In this study, masculinity was associated with
self-concept and striving in the achievement domain and femininity was associated with
self-concept and striving in the interpersonal, or social, domain. Therefore, this study demonstrated an early relationship between social constructs related to self-efficacy and expressive characteristics. In a similar study comparing gender identity traits and psychological variables in medical students, Zeldow et al. (1985), found that both instrumentality and expressiveness were related to interpersonal satisfaction, demonstrating again that these traits have some influence in the social domain.

As for constructs related to self-efficacy, a study using both self and peer ratings in army training measured the “suitedness to succeed” of both men and women in army training (Dimitrovsky, Singer, & Yinon, 1989). Essentially measuring self-confidence for future success in the army, this study supported both the masculinity and the androgyny models, where both androgynous and masculine men and women were rated both by self and others as more likely to succeed than feminine-typed individuals. Although the population in this study is limited to army trainees, who are in a more traditionally masculine occupation, the army functions rated were previously determined to be both masculine and feminine tasks. Therefore, this study provides further support for the role of instrumentality in concepts related to self-efficacy but, in supporting androgyny, does not rule out the positive effects of expressiveness.

Other research on instrumentality and expressiveness applies directly to the construct of self-efficacy. Most studies have found that self-efficacy in various forms is strongly related to instrumentality (e.g. Robins, 1986; Christie & Segrin, 1998). In fact, some have equated the two constructs (Allgood-Merten & Stockard, 1991). In a study focusing on self-efficacy in opposite-sex encounters, Robins (1986) found that instrumentality was related to self-efficacy in this specific social situation but that
expressiveness alone was not. Androgynous individuals, however, did report higher self-efficacy, indicating that expressive characteristics may have played a minor role in self-efficacy in opposite-sex interactions. Similar results were found in a study measuring self-efficacy in social and non-social tasks (Christie & Segrin, 1998), with no distinction made between same and opposite-sex interactions. Again, instrumentality contributed to self-efficacy in both the social and non-social tasks. A path analysis suggested a causal relationship between the variables, with instrumentality directly affecting self-efficacy for the social task.

Support for the role of expressiveness in social self-efficacy is revealed in a study of Japanese women relating these gender role constructs to self-efficacy in the context of the six Holland codes (Matsui & Onglatco, 1991). Instrumentality and expressiveness were not measured in a domain-specific manner, but self-efficacy was measured separately for each of the six environments. Analysis of the results for the social environment indicated a moderate relationship between self-efficacy and both instrumentality ($r = .34$) and expressiveness ($r = .40$). Multiple regression analysis also revealed a significant unique contribution of each trait to self-efficacy in the career social domain, indicating that instrumentality and expressiveness each influence self-efficacy independently in this area. This study provides further support for the relationship of the gender identity variables to social self-efficacy.

More recently, instrumentality and expressiveness have been explored in relation to social self-efficacy directly (Stroiney, 2002). In this study, correlations between instrumentality and social self-efficacy were $r = .58$ for females and $r = .64$ for males. Correlations of social self-efficacy with expressiveness were $r = .26$ for females and $r =$
.43 for males. These findings further support the relationship of social self-efficacy to the gender role traits of instrumentality and expressiveness. Additionally, this study included a path model, which also included the variables of shyness and depression. In this model, instrumentality was demonstrated to be a predictor of social self-efficacy, with a path coefficient of .61, and expressiveness was demonstrated to be an outcome of social self-efficacy, with a path coefficient of .34. Although path analysis is a correlational method, the fit of the model suggests that instrumentality may predict social-self-efficacy, which in turn may predict expressiveness.

2.3.2 Self-Monitoring

Self-monitoring is a personality variable that represents differences in the ability and desire to modify behavior to match the behavior of others. By definition, high self-monitors will modify their behavior to match their social situation for the sake of public appearances while low self-monitors are unwilling or unable to modify their behaviors and instead behave based on their inner attitudes and feelings (Snyder & Gangestad, 1986). Self-monitoring has been shown to be influential in cognitive, behavioral, and interpersonal domains (Snyder & Gangestad, 1986) and has also been found to influence attitude formation and consumer behavior (DeBono, 2000). As a construct, self-monitoring was first defined by Snyder (1974) in the development of a scale that incorporated the components of concern for appropriateness, attention to social comparison information, ability to modify self-presentation, use of the ability to modify self-presentation, and variability of behavior across situations.

Following the development of the construct and Snyder’s (1974) original scale, much debate has focused on the validity and factor structure of the scale and construct.
Lennox and Wolfe (1984) argued that the empirical factor structure of the scale did not yield the original five conceptual components of self-monitoring, and subsequently created a competing measure of self-monitoring that included the two conceptual and theoretical factors of “ability to modify self-presentation” and “sensitivity to the expressive behavior of others”. This measure was more consistent, but did not include the “other-directed” and “variability of behavior” aspects contained in the original scale.

With a competing measure in place Snyder and Gangestad (1986) revised the original self-monitoring scale to include only 18 of the 25 items and identified the two general factors of public performing and other-directedness. These two factors were defined as subscales in the original scale. They argue that the new scale better reflects the underlying construct of self-monitoring than Snyder’s (1974) original scale or Lennox and Wolfe’s (1984) competing scale. John, Cheek, and Klohnen (1996), however, found that the revised scale emphasizes extraversion and minimizes other-directedness, and therefore recommended the use of the original scale with its subscales of “public performance” and “other-directedness” as the most valid representation of the construct.

Despite the controversy surrounding its measurement, self-monitoring has been a widely studied and widely influential construct regarding social behavior (Cramer & Gruman, 2002). Of interest in the present study, however, is the relationship of self-monitoring to social self-efficacy as well as the gender role traits of instrumentality and expressiveness. In relation to social self-efficacy and self-monitoring, no studies have explored a direct relationship between the variables, and the research linking other interpersonal or self-efficacy variables has been sparse. One study linking generalized self-efficacy to self-monitoring explored adjustment to life in a new cultural setting.
In this study, both generalized self-efficacy and self-monitoring predicted adjustment in both interaction and general adjustment categories, with self-efficacy also predicting work adjustment. In both cases, high scores on the variables predicted increased adjustment, suggesting that self-efficacy and self-monitoring have similar effects in new situations.

In regards to social variables, one study found that high self-monitoring adolescents also had greater global social competence (Schoenrock, Bell, Sun, & Avery, 1999). In this study, the relationship accounted for 11% of the variance between the two scales, suggesting a moderate relationship between the variables. Given that past social performance is an influential source on perceived social self-efficacy, this relationship, combined with the similar effects of self-monitoring and general self-efficacy, suggests that it may be somewhat related to social self-efficacy. This research does not adequately define the relationship between social self-efficacy and self-monitoring, but it suggests that the relationship is worthy of exploration.

In the realm of gender variables, some research has combined these constructs. As with social self-efficacy, however, no research is available showing the direct relationships between self-monitoring, instrumentality, and expressiveness. Explicit gender differences, however, have been found. Frazier and Fatis (1980) explored these differences and found that males reported significantly greater self-monitoring than females. Consequently, they suggested analyzing results separately for each gender. Gender differences were further supported in a study by Lippa, Valdez, and Jolly (1983), where the moderating role of self-monitoring on the consistency between self-report and observed masculinity and femininity differed for males and females. In this study, self-
reported gender role and the observed gender role by others were generally consistent, but higher self-monitoring enhanced the effect for females and detracted from the effect for males. These results suggest that men and women may use self-monitoring to achieve different goals.

In sum, self-monitoring has been a widely explored variable regarding social behavior, but little information is available on its relationship to social self-efficacy or instrumentality and expressiveness. The research suggests self-monitoring shows similar effects to self-efficacy and predicts consistency in gender roles. It also suggests that men and women may use self-monitoring differently. These findings suggest that a relationship may be present between self-monitoring and these personality variables, and this relationship would be beneficial to explore along with the construct’s relation to psychological adjustment variables.

2.4 Social Self-Efficacy and Psychological Adjustment

Social self-efficacy has been widely applied to psychological adjustment and mental health, with relationships being present with self-esteem, social anxiety, and depressive symptomatology (Smith & Betz, 2000; Smith & Betz, 2002). Of interest in this study is the relationship of social self-efficacy to the psychological adjustment variables of depressive symptomatology, loneliness, and self-esteem. Consequently, each of these relationships will first be reviewed independently and will be followed by an exploration of the relationships among the three psychological adjustment variables mentioned above.
2.4.1 Social Self-Efficacy and Depressive Symptomatology

One psychological adjustment variable related to social self-efficacy is depressive symptomatology. Depression, which is an exaggeration of a normal negative mood state, is defined in the Diagnostic and Statistical Manual of Mental Disorders, fourth edition (DSM-IV) as a prolonged state of unhappiness or feeling down. Classified as a mood disorder, depression is characterized by motivational, cognitive, and physiological symptoms that consist of a lack of motivation, feelings of guilt or worthlessness, and a general loss of energy (American Psychiatric Association, 1994). The DSM-IV also classifies depression into numerous sub-categories of depressive disorders, but the definition generally used in research involves this general symptomatology common to all sub-categories. The most common measure of depression is the Beck Depression Inventory (Beck & Steer, 1987), and more recently, the Beck Depression Inventory – Second Edition (Beck, Steer, and Brown, 1996) which measures the presence of the major depressive symptoms over the past two weeks. Although this inventory is used clinically to assist with the diagnosis of depression, its use in research generally involves the presence of symptoms of depression and views the measure as a continuum of symptoms rather than a method of classification.

Research examining the extent to which symptoms of depression may be related to low self-efficacy has yielded mixed results about this relationship. Ehrenberg et al. (1991) explored the relation of depressive symptomatology to social self-efficacy, as well as academic and physical self-efficacy in adolescents. Overall, self-efficacy was negatively correlated with the depression inventory, but using Sherer et al.’s (1982) social self-efficacy subscale, the correlation between depressive symptomatology and social
self-efficacy was not significant. When broken down by gender and early, middle, and late adolescents, however, significant contributions were indicated in social self-efficacy for females in early adolescence and for males in middle and late adolescence in this sample. These findings indicated a need for further exploration of this relationship.

In another study of adolescents, McFarlane, Bellissimo, and Norman (1995) suggest a link between social support from family and peers, depressive symptomatology, and social self-efficacy. This conceptualization focuses on at-risk adolescents and relates the construct of social self-efficacy to resilience and hardiness. Students enrolled in a general, non-college preparatory mathematics class completed Connolly’s Adolescent Social Self-Efficacy Scale (1989) as well as measures of depression, social support, and adolescent stress. Small but significant correlations were observed between both peer and family support and social self-efficacy. Additionally, stress, family support, and social self-efficacy were significantly correlated with depressive symptomatology.

Bandura et al. (1999) provided a further link between social self-efficacy and depressive symptomatology, as well as a link with academic self-efficacy, using a sample of sixth graders in schools just outside of Rome, Italy. Utilizing path analysis, this study tested a model of the relationship of social self-efficacy and prosocial behavior, problem behavior, academic achievement, and depression. No direct links were observed with problem behavior or academic efficacy, but links to prosocial behavior, academic achievement, and depression demonstrate that social self-efficacy may influence a variety of outcomes, not only social outcomes. Also, the direct link to depression further supports the role of social self-efficacy to depressive symptomatology. Another finding of interest is the gender differences in the link between social self-efficacy and symptoms of
depression. Although there was no relationship for boys, the path coefficient for girls was statistically significant. This suggests that girls rely more heavily on social competence than boys, meaning that if they do not feel socially competent they are more likely to become depressed.

Research on the relationship between depressive symptomatology and social self-efficacy has ultimately supported the relationship, and further research indicates a moderating role of shyness (Smith & Betz, 2002). This study by Smith and Betz (2002), which also relates these constructs to career decision efficacy, establishes a path between social self-efficacy and shyness, and a continuation of the path to depression. These findings serve as a connection between the literature linking shyness to negative social outcomes and the literature connecting social self-efficacy to depressive symptomatology. In an additional study involving the construct of shyness, shyness was demonstrated to have a mediating role in the relationship between social self-efficacy and depression, but it did not account for the entire direct relationship between social self-efficacy and symptoms of depression, suggesting that social self-efficacy has a relationship with depressive symptomatology independent of the shyness construct (Stroiney, 2002).

2.4.2 Social Self-Efficacy and Loneliness

Another psychological adjustment variable of interest in its relation to social self-efficacy is loneliness. Loneliness can be defined as a perceived lack of interpersonal contact, due to the experience of fewer or less satisfying interpersonal relationships than desired (Ponzetti, 1990). The experience of loneliness is considered an emotionally distressing experience and is influenced by a variety of variables. Loneliness is most
often measured using the revised version of the UCLA loneliness scale, which contains items addressing both lack of social contact and lack of intimacy (Russell, Peplau, & Cutrona, 1980). This scale can also be broken into the two subscales of “intimate others” and “social others”. Because loneliness has a direct social component, many social variables are correlated with loneliness, and the relationship between social self-efficacy and loneliness is worthy of exploration.

In relation to generalized self-efficacy, a study of education majors found a negative correlation between self-efficacy and loneliness ($r = -.25$) (Dussault & Deaudeilin, 2001). This finding suggests that self-efficacy or self-confidence may decrease feelings of loneliness, even without the social component. As further support for these findings, Cheng and Furnham (2002) reported moderate, negative correlations between a general confidence measure and both the intimate others ($r = -.47$) and social others ($r = -.33$) subscales of the UCLA loneliness scale. To further support the predictive relationship between self-efficacy and loneliness, these authors tested a path model that also included personality, social, and academic variables. Even with the inclusion of these other variables, self-confidence uniquely predicted both the intimate others and social others components of loneliness. These findings suggest that higher levels of self-efficacy or self-confidence may protect against loneliness.

Loneliness has also been found to be related to many social variables, including anxiety in social situations, shyness, and assertiveness (Ponzetti, 1990). In this review of empirical research, Ponzetti (1990) also reported findings of reduced confidence in social situations in lonely individuals. To further support the relationship between social self-efficacy and loneliness, Galanaki and Kalantzi-Azizi (1999) conducted a study where
children’s social self-efficacy was related to both loneliness and social dissatisfaction. In this study, children with lower levels of social self-efficacy, both in conflict and non-conflict situations, had significantly higher levels of loneliness ($r = -.17$) as well as combined loneliness and social dissatisfaction ($r = -.29$). Larger correlations were found between loneliness and a social confidence measure in college students, with individuals with lower levels of social confidence reporting significantly more loneliness on both intimate others ($r = -.53$) and social others ($r = -.51$) components (Cheng & Furnham, 2002). In light of these findings, social self-efficacy appears to be significantly related to and a possible predictor of loneliness.

2.4.3 **Social Self-Efficacy and Self-Esteem**

A common variable used to measure psychological adjustment and well-being is self-esteem. Self-esteem can be defined as an overall evaluation of the self, containing both cognitive and affective components (Leary, Tambor, Terdal, & Downs, 1995). Self-esteem is considered a self-concept variable, but differs from the self-concept in the sense that the self-esteem is an evaluation of the self-concept, or beliefs about the self. Self-esteem has also been related to Carl Rogers’s (1961) concept of unconditional positive regard by defining high self-esteem as unconditional self-regard (Betz, Wohlgemuth, Serling, Harshbarger, & Klein, 1995). Self-esteem has also been described as a socially-determined variable, where self-esteem is hypothesized to monitor the social situation in an effort to avoid social exclusion (Leary et al., 1995). Based on this interpretation, self-esteem is hypothesized to predict cognition, affect, and behavior in the social realm.

Self-esteem has also consistently been related to both general and social self-efficacy, both when defined as a general self-worth and an unconditional self-regard.
Wulff and Steitz (1999) identified a correlation of $r = .38$ between generalized self-efficacy and self-esteem when defined as self-worth, and Betz and Klein (1996) found a correlation of $r = .53$ for males and $r = .43$ for females between generalized self-efficacy and self-esteem when defined as unconditional self-regard. These studies demonstrate a moderate relationship between the constructs of generalized self-efficacy and self-esteem, but other researchers argue that general self-efficacy and self-esteem are the same construct (Stanley & Murphy, 1997). Based on a multiple regression analysis including multiple measures of generalized self-efficacy, these authors conclude that self-esteem and self-efficacy are not sufficiently different constructs as currently measured.

Social variables, on the other hand, have been demonstrated to be related to self-esteem. Specifically, research suggests that self-esteem and social difficulties are related (Crocker & Luhtanen, 2003). In a longitudinal study of college students, self-esteem was measured before beginning college, and social problems were assessed later in the course of the freshman year. In this study, self-esteem did predict social difficulties, with individuals with lower self-esteem reporting more social problems. These results were present even when demographic variables and the personality variables of neuroticism, agreeableness, and social desirability were controlled. These findings suggest that self-esteem may uniquely contribute to self-efficacy in the social domain.

Despite the controversy over the relationship between self-esteem and generalized self-efficacy, the constructs of self-esteem and social self-efficacy have been demonstrated to be moderately related, but conceptually and empirically different in their predictions. Smith and Betz (2002) reported a correlation of $r = .43$ between the variables, and a subsequent path analysis showed that social self-efficacy and global self-
esteem yielded unique pathways to shyness, depressive symptomatology, and career indecision. These findings suggest that although they are related and predict similar psychological outcomes, the self-confidence component of social self-efficacy differs from the self-worth or self-regard component of global self-esteem.

2.4.4 Self-Esteem, Loneliness, and Depressive Symptomatology

The psychological adjustment variables of self-esteem, loneliness, and depressive symptomatology each have their own unique relationships with social self-efficacy, but they are also interrelated. In studies of both adolescents and college students, self-esteem appears to have a consistent, moderate relationship with both loneliness and symptoms of depression. Ouellet and Joshi (1986) reported correlations of $r = -.72$ between loneliness and self-esteem and $r = -.28$ between depressive symptomatology and self-esteem, indicating that higher levels of self-esteem were related to lower levels of loneliness and symptoms of depression. Other studies exploring these relationships have yielded slightly weaker correlations between self-esteem and loneliness, with values of approximately $r = -.50$ (Russell et al., 1980; Haines, Scalise & Ginter, 1993), and stronger correlations between self-esteem and depressive symptomatology ($r = -.66$; Smith & Betz, 2002). These studies clearly demonstrate a solid, correlational relationship between self-esteem and the outcome variables of loneliness and depressive symptomatology.

To further explore the nature of the relationship between self-esteem and loneliness, other researchers have explored the relationship over time and across the different elements of loneliness. In relation to the different components of loneliness, self-esteem has been shown to be more predictive of intimate loneliness than social loneliness (McWhirter, 1997). In this study the correlation between self-esteem and
global loneliness was $r = -.51$, but the correlation of self-esteem with intimate loneliness was $r = -.50$ and the correlation with social loneliness was $r = -.42$. These findings suggest that self-esteem is more strongly related to an internal, affective deficit, as is suggested by the self-worth component of self-esteem, than it is to the more external, social ability component of loneliness.

To measure the effects of this relationship over time, Nurmi, Toivonen, Salmela-Aro, and Eronen (1997) measured self-esteem and attribution strategies in beginning university freshman, who were in the process of establishing new friendships in a new environment, and then asked them to complete a measure of loneliness one year later. In this study, the researcher found that self-esteem was significantly predictive of loneliness following the college adjustment period. This suggests that the relationship between self-esteem and loneliness is stable over time, and more importantly, it suggests a causal relationship, with self-esteem predicting loneliness when all participants began with few friends in their environment.

Further exploration of the relationship between self-esteem and depressive symptomatology also suggests a causal relationship, with decreased self-esteem leading to increased symptoms of depression (Smith & Betz, 2002). In a path analysis including social self-efficacy, career indecision, and shyness, global self-esteem served as a unique predictor of depressive symptomatology, with a path coefficient of -.36. These findings, combined with the findings relating self-esteem to loneliness, suggest that self-esteem is a psychological adjustment variable that precedes and predicts the outcome variables of loneliness and depressive symptomatology.
Cheng and Furnham (2003) provided further evidence for this relationship between self-esteem and depressive symptomatology. These authors also created path models, which included the personality variables of extraversion and neuroticism and the outcome variables of depression and happiness. In these models, self-esteem positively predicted overall happiness as well as components of happiness and positive affect. Self-esteem negatively predicted overall depression as well as various components of depression (dissatisfaction, unattractiveness and anorexia, and daily dysfunction) that were determined through factor analysis. These results serve to further confirm the relationship between self-esteem and depressive symptomatology.

The relationship between loneliness and depressive symptomatology is also a relationship that has been explored. These variables have been shown to be strongly related but are unique constructs with differing properties. Ouellet and Joshi (1986) report a moderate correlation ($r = .43$) between the two constructs. Wilbert and Rupert (1986) report a higher correlation of $r = .57$ between loneliness and depressive symptomatology, which demonstrates the relatedness between the two constructs but leaves room for their unique qualities as well. In a subsequent study, Koenig, Isaacs, and Schwartz (1994) asserted the unique aspects of the two constructs by comparing the relationship across genders in high school students. In this study, boys reported higher levels of loneliness than girls, but girls reported more severe symptoms of depression than boys. Moreover, the correlation between loneliness and depressive symptomatology was stronger for boys than it was for girls, suggesting that both the constructs and their relationship act differently depending on gender. This research further supports the need
to explore the roles of personality and other psychological adjustment variables separately for depressive symptomatology and loneliness.

2.5 **Personality Variables and Psychological Adjustment**

Given the previously discussed relationships of social self-efficacy to the personality variables of instrumentality, expressiveness, and self-monitoring and the psychological adjustment variables of self-esteem, loneliness, and depressive symptomatology, it is important to consider the research regarding the relationship between these personality and psychological adjustment variables. Much research has focused on the relationship between the gender role variables and psychological adjustment, with some including the role of social variables (e.g. Wang, Heppner, & Berry, 1997; Stroiney, 2002). A more limited amount of research has been devoted to the relationship between self-monitoring and psychological adjustment. For both personality variables, the available research suggests that further exploration of the relationships between these variables is warranted.

2.5.1 **Instrumentality, Expressiveness, and Psychological Adjustment**

Before exploring the findings specific to self-esteem, loneliness, and depressive symptomatology, it is important to first explore the general relationship of these gender role variables to mental health. In these studies, overall psychological well-being, which encompasses many psychological adjustment variables, is the construct of interest. Early studies relating sex roles to mental health and well-being supported a “masculinity model”, where instrumentality is positively correlated with well-being and adjustment and is negatively correlated with levels of depression (Bassoff & Glass, 1982; Whitley, 1984). In this model, the influence of expressiveness is only mildly related to well-being.
Bassoff and Glass (1982) performed a meta-analysis of 26 studies where they compared masculinity, femininity, and androgyny to mental health, using a variety of definitions for mental health throughout the various studies. The highest levels of mental health were found in both males and females scoring high on instrumentality. Androgyny also was positively related to mental health, but the effect was attributed to the instrumentality component of androgyny. A related meta-analysis in the area of well-being compared the androgyny model for mental health with the masculinity model, and found support for the androgyny model (Whitley, 1984). Whitley extended these findings to the construct of depression, reporting a strong negative relationship between instrumentality and depressive symptomatology and no significant relationship between expressiveness and levels of depression.

Although previous research provided inconclusive evidence for the relationship between expressiveness and well-being, Sharpe, Heppner, and Dixon (1995) provided support for this relationship in a study of adult men. The relationship with well-being was strongest for instrumentality, but expressiveness also played a role, supporting a model where both gender role variables are positively related to well-being. Stake (1997) further tested the androgyny model in predicting well-being, and found that individuals high in androgyny reported greater well-being than instrumental individuals in situations that required both instrumental and expressive traits. Also, in these dual expectation situations, individuals high in expressiveness reported well-being similar to androgynous individuals and greater than instrumental individuals. This suggests that, at least in this type of situation, expressiveness does predict well-being.
Hunt (1993) provides additional evidence of the positive effects of expressiveness in a study focusing on the relationship between expressiveness and well-being. Using the short form of the BSRI, Hunt compared instrumentality and expressiveness with levels of depression, overall positive affect, life satisfaction, and affect intensity. On all scales, instrumentality and expressiveness predicted well-being consistently, with the exception of affect intensity, where expressiveness had a significant positive relationship with the intensity of affect and instrumentality did not. In light of this evidence, although instrumentality is the larger predictor of well-being, expressiveness does appear to have some unique, positive influence.

Much of the research relating to instrumentality and expressiveness to well-being can also be applied to self-esteem, as self-esteem has been used as a definition of well-being in numerous studies (Whitley, 1983). In this sense, the relationship between self-esteem and instrumentality is consistently high, and self-esteem’s relationship with expressiveness is low to moderate, yielding non-significant results in some studies. Androgyny, or the possession of both instrumental and expressive characteristics has consistently been a good predictor of self-esteem.

Instrumentality and expressiveness were first compared to self-esteem in a study relating self-esteem to self and other ratings on the most positive PAQ items for both genders (Spence et al., 1975). The results of this study showed that regardless of gender, masculinity (instrumentality) was the most highly correlated with self-esteem ($r = .77$ for males, $r = .83$ for females), yet femininity (expressiveness) also had a positive relationship ($r = .42$ for men, $r = .30$ for women). This study demonstrated the independence of these traits from gender, but more importantly, provided the first support
for the androgyny model for self-esteem, where individuals high in both gender role characteristics had higher self-esteem than did other groups of individuals. A more recent study supports the role of androgyny in a path analysis with a path coefficient of .37, with androgyny predicting self-esteem independently of career self-efficacy and career indecision (Wulff & Steitz, 1999). These studies support the combination of instrumentality and expressiveness as being the best predictor of self-esteem.

Instrumentality and expressiveness have also been demonstrated to predict self-esteem independently. In a study of children and adolescents, Allgood-Merten and Stockard (1991) reported that both instrumentality and expressiveness were highly predictive of self-esteem for fourth grade children, but only instrumentality was predictive of self-esteem in older adolescents. A group of high-achieving adolescent males did, however, demonstrate a significant relationship between self-esteem and expressiveness. These results were similar to a study by Hirschy and Morris (2002) where instrumentality predicted self-esteem more for women than for men, and although it was not significant, the correlation between self-esteem and expressiveness was higher for men than women.

Other research suggests that the environment may play a role in the relationship between gender roles and self-esteem. Burnett, Anderson, and Heppner (1995) found no relationship between self-esteem and expressiveness and a moderate relationship between self-esteem and instrumentality. With the addition of feelings of environmental pressure for the traits, however, the data also suggested higher environmental pressure for instrumental characteristics than for expressive characteristics. The environmental pressure interacted with gender role, with individuals low in instrumentality who felt a
strong press for instrumentality having the lowest self-esteem. Another study on personal values supports this viewpoint, demonstrating that children with lower self-esteem are more likely to take on a traditional gender role than those with high self-esteem (Salminen, 1994). These results suggest that the expectations of the environment play a role in the effect of a trait on self-esteem.

With regards to loneliness, the literature supports a negative relationship between loneliness and both instrumentality and expressiveness, with high levels of instrumentality and expressiveness predicting lower levels of loneliness. In a study relating loneliness to meaningful social interactions, expressiveness was found to mediate this relationship in both men and women (Wheeler et al., 1983). This research suggests that the adaptive function of expressiveness may come in its ability to increase meaningful social interactions.

Other research investigating the relationship between gender roles and loneliness has supported the role of instrumentality in decreased loneliness as well. Berg and Peplau (1982) found that although self-disclosure only decreased loneliness for women, both instrumentality and expressiveness were related to decreased loneliness in both genders. A more recent study demonstrates a similarly strong, negative relationship between instrumentality and loneliness, but found that expressiveness only had an impact for men (Cramer & Neyedley, 1998). Because of the discrepancies, further exploration of these gender differences is warranted. Overall, however, both instrumentality and expressiveness appear to be negatively related to loneliness.

In relation to depressive symptomatology, much research supports the role of instrumentality, with some also supporting a smaller role of expressiveness. Roos and
Cohen (1987) tested the relationship between the gender role variables and depression following negative life events and included the construct of trait anxiety. Along with sex roles, the model tested the moderating effects of social support. The data support the hypothesis that instrumentality is related to depressive symptomatology, with correlations between the Masculinity scale of the PAQ and measures of depression being \( r = -0.40 \) and \( r = -0.45 \). Correlations between expressiveness and levels of depression were not significant. In addition, the data support the androgyny model, where individuals higher on both characteristics were less depressed in the presence of negative life events than were individuals high on instrumentality or expressiveness alone. Instrumentality also appeared as the main moderator in the relationship between trait anxiety and negative life events, meaning that the relationship between negative events and trait anxiety was strong for individuals low in instrumentality but was not present in individuals high in instrumentality. This would suggest that instrumentality influences the reaction to negative life events.

In a more recent study of stressful life events and depressive symptomatology, Waelde et al. (1994) distinguished between achievement stress, or stress to do well at an activity, and interpersonal stress, or events related to relationships with others. As expected, instrumentality had a significant negative correlation with levels of depression while expressiveness did not. Additionally, women high in interpersonal stress who were also high in expressiveness reported low levels of depression. This finding was not replicated for men, but it does suggest that for certain types of stressors expressiveness rather than instrumentality moderates the occurrence of depressive symptomatology. In relation to gender itself, suicidality was highest for women with interpersonal stressors.
and men with achievement-related stressors, suggesting that women may place a greater value on interpersonal events and men value achievement events more, independent of instrumentality or expressiveness.

In an effort to identify other factors involved in the relationship between instrumentality, expressiveness, and depressive symptomatology, Wang et al. (1997) studied the roles of problem-solving appraisal and perceived social support. Using a latent variable structural equation model, they found that instrumentality and expressiveness are related to interpersonal and intrapersonal aspects of psychological adjustment, including depression, indirectly through the mediator variable of perceived social support. An additional study explored the relationship between instrumentality, self-esteem, and symptoms of depression (Russo, Green, & Knight, 1993). This study did not include the role of expressiveness, but found that instrumentality interacted with self-esteem to predict depressive symptomatology. More specifically, self-esteem did not impact levels of depression for individuals high in instrumentality, but higher self-esteem was associated with lower levels of depression for individuals low in instrumentality. These studies further support the role of social and esteem factors in the relationship between gender role variables and depressive symptomatology.

Further research linking the relationship of instrumentality, expressiveness, and depressive symptomatology also explores gender differences in this relationship. In a study relating these variables to social self-efficacy and shyness, Stroiney (2002) conducted a path analysis which demonstrated that social self-efficacy mediated the relationship between instrumentality and depressive symptomatology. This study also demonstrated gender differences in the relationship between expressiveness and
symptoms of depression, with these variables being significantly related for men \( (r = - .27) \) but not for women. Additionally, this study reported inconclusive evidence regarding a significant pathway between expressiveness and depressive symptomatology after accounting for social self-efficacy, indicating a need for further exploration of the relationship.

2.5.2 Self-Monitoring and Psychological Adjustment

Although little research has been conducted in an effort to understand the relationship between self-monitoring and psychological adjustment, the available research suggests self-monitoring may play a moderating role in many relationships between personality variables and psychological adjustment. Although few direct relationships are identified between self-monitoring and psychological adjustment variables, with an example being a non-significant correlation between self-monitoring and depressive symptomatology (Lester, 1990), the role of a moderator is not to influence the outcome variable directly but to yield different results for high versus low levels of self-monitoring. In a study of one such relationship, Gonnerman et al. (2000) found that self-monitoring moderated the relationship between self-discrepancies and affective states. More specifically, the discrepancy between the actual and ideal or ought self was related to levels of anxiety and depression only if the judgment was based on the individual’s own opinions for low self-monitors and only if the judgment was based on the perceived opinions of others for high self-monitors.

Although self-monitoring has a moderating role in some relationships, it has been shown to be directly related to a variation of self-esteem (Merrill, Lorimor, Thornby, Woods, & Vallbona, 1996). In this study, a self-esteem scale was modified to relate to
feelings of self-worth associated with care of elderly individuals by medical students.

Self-monitoring, as well as social desirability, predicted care giving self-esteem.

Although this relationship does not involve global self-esteem, it suggests the possibility of a relationship between these constructs. In light of these findings and the relationship between self-monitoring and self-efficacy and gender role variables, the direct and moderating role of self-monitoring should be explored.

2.6 Summary

Based on the current research regarding social self-efficacy, psychological adjustment, and the personality variables of instrumentality, expressiveness, and self-monitoring, further evaluation of the relationships between these constructs is warranted. Social self-efficacy has been demonstrated to be positively related to instrumentality and expressiveness, with social self-efficacy serving as a moderator between instrumentality and expressiveness in one path model (Stroiney, 2002). In addition, social self-efficacy has been demonstrated to have positive relationship with self-esteem, a negative relationship with depressive symptomatology (Smith & Betz, 2002), and a negative relationship with loneliness (Cheng & Furnham, 2002). These relationships, as well as relationships among the psychological adjustment variables of self-esteem, depressive symptomatology, and loneliness, suggest that the variables are related but distinct, and they should be explored as a group. Additionally, information on gender differences in the relationship between expressiveness and psychological adjustment (e.g. Cramer & Neyedley, 1998; Stroiney, 2002) justifies further exploration of gender differences in these relationships.
The role of self-monitoring in relation to social self-efficacy, instrumentality, expressiveness, and psychological adjustment has not yet been explored extensively. Self-monitoring does, however, appear to have a moderating role in other relationships between perceptions of the self and psychological adjustment (Gonnerman et al., 2000), and it deserves attention. Based on the research available, further exploration of the relationship between social self-efficacy, depressive symptomatology, instrumentality, and expressiveness will further clarify these relationships, and the addition of loneliness, self-esteem, and self-monitoring will serve to achieve a better understanding of the relationship of social self-efficacy to psychological adjustment.
CHAPTER 3

METHODOLOGY

3.1 Participants

Participants included 350 female and 346 male undergraduate students enrolled in an introductory psychology class at The Ohio State University. The mean age of the sample was 18.8, \((SD = 1.98)\). The ethnic distribution of the sample was 82.5% Caucasian, 7% Asian Pacific American, 6% African American, 1.9% Latino(a), and 2.6% Other (or did not indicate ethnic status). Participation partially fulfilled a course requirement, but it was voluntary in the sense that alternate options were available in lieu of research participation. Recruitment consisted of posting the study on a university website, where students had the option of selecting from a variety of research studies.

Because modification of structural equation models based on statistical indices has been challenged as data-driven and often unstable across samples, it is important to cross-validate the modified model (MacCallum & Austin, 2000). Therefore, the sample was randomly divided into a calibration \((N = 455)\) and a validation \((N = 241)\) sample. With this division, models could be tested and modified using the calibration sample, and any modified models could be tested for stability using the validation sample. There were no significant differences between the calibration and validation samples on any of the demographic or model variables.
3.2 **Instruments**

The measures administered were the Scale of Perceived Social Self-Efficacy, the Bem Sex Role Inventory, the Unconditional Self-Regard Scale, the Beck Depression Inventory, the Self-Monitoring Scale, and the Revised UCLA Loneliness Scale.

3.2.1 **Perceived Social Self-Efficacy**

The Scale of Perceived Social Self-Efficacy (PSSE; Smith & Betz, 2000) measures an individual’s degree of perceived social self-efficacy, defined as an individual’s degree of self-efficacy or confidence involving social behavior. This measure was selected because its content, reliability data, and validity data appear to be a strong improvement over previous measures that assess this construct (Smith & Betz, 2000). The instrument consists of 25 rationally derived items that measure the level of confidence in a variety of social situations. Responses are obtained using a five-point Likert scale ranging from 1 (*no confidence at all*) to 5 (*complete confidence*). Examples of items include “Find someone to go to lunch with” and “Put yourself in a new and different social situation”. Scores on the scale are obtained by summing the scores of each item and dividing by 25, yielding total scores ranging from 1 to 5 (see Appendix A).

The current study yielded a Cronbach’s alpha value of .95. Smith and Betz (2000) reported an internal consistency reliability coefficient of .94 ($N = 354$) for the scale and conducted test-retest reliability in a smaller sample ($N = 109$) over an interval of three weeks, yielding a value of $r = .82$, demonstrating evidence of reliability. Concurrent validity data were obtained using the social subscale of the Self-Efficacy Scale (Sherer et. al, 1982) and the Social Confidence Scale of the Skills Confidence Inventory (Betz, Borgen, & Harmon, 1996). Correlations of these scales with the PSSE were $r = .60$ for
males and $r = .62$ for females on the former, and $r = .46$ for males and $r = .53$ for females for the latter. This demonstrates that the instrument is sufficiently similar to a scale designed the measure the same construct as well as one designed to measure the construct of social confidence in the career domain.

Significant concurrent construct validity evidence was also found by comparing the measure with the similar variables of social anxiety and shyness (Smith & Betz, 2000). Correlations of this measure with a measure of shyness were $r = -.67$ for males and $r = -.71$ for females. For social anxiety, correlations of $r = -.57$ for males and $r = -.68$ were found. These demonstrate validity in that moderate correlations were found for similar variables, but the correlations were not so high as to be measuring the same construct. Both concurrent and discriminant construct validity were also assessed using adjacent (Enterprising and Artistic) versus non-adjacent (Investigative, Realistic, and Conventional) Holland themes on the Skills Confidence Inventory (Betz et al., 1996). This means that confidence levels in the two areas that are deemed similar to social confidence in Holland’s career theory had significantly higher correlations with this measure of social self efficacy than did the three areas deemed least similar by this theory. These data demonstrate that the measure is valid because they show that the scale is similar to theoretically similar constructs and not similar to theoretically different constructs.

3.2.2 Instrumentality and Expressiveness

The Bem Sex Role Inventory (BSRI; Bem, 1974) consists of two 20-item subscales that measure the traditional sex role characteristics of males and females, originally titled masculinity and femininity, but now recognized as the traits of
instrumentality and expressiveness, respectively. Instrumentality refers to traits such as self-reliance and assertiveness, whereas expressiveness refers to caring, sensitive qualities. This measure was selected over other measures of instrumentality and expressiveness because, although others are equal in validity and reliability, this scale appeared more comprehensive for the purpose of this research. The scale consists of a set of adjectives describing each of the constructs. Responses are obtained on a 5-point Likert scale where participants rate their identification with each adjective, with responses ranging from 1 (never true) to 5 (always true). Examples of items include “Independent” and “Forceful” on the instrumentality scale and “Gentle” and “Sensitive to the needs of others” on the expressiveness scale (see Appendix B).

For purposes of this study, negative or ambiguous items and the items “masculine” and “feminine” were not scored in order to keep all adjectives positive. This omission of items was originally recommended by Spence and Buckner (2000) in an effort to re-assess the desirability of Bem’s (1974) original traits. Many traits were determined to be currently undesirable for both genders and were removed to ensure the equality of the two scales as well as the positivity of the traits. Subsequently, other studies have used these lists of traits and have demonstrated reliable results (Parsons & Betz, 2001; Stroiney, 2002). Examples of items that were removed are “strong personality” for instrumentality and “yielding” and “gullible” for expressiveness. This change results in 11 expressiveness items, with a total score ranging from 11-55, and 17 instrumentality items, with a total score on this scale ranging from 17-85. Scores were calculated by summing the responses in each scale.
Original reliability information (Bem, 1974) yielded coefficient alphas of .86 for masculinity and .80 for femininity, with a test-retest reliability of $r = .90$ for both. More recently, Parsons and Betz (2001) reported alphas of .86 for instrumentality (masculinity) and .81 for expressiveness (femininity), demonstrating that the scales remain internally consistent in more current samples. In this sample, the coefficient alpha for the shortened version of the instrumentality scale was also .86. Additionally, Stroiney (2002) found the shortened scales to be reliable with alphas of .87 for instrumentality and .86 for expressiveness. In the current study, coefficient alpha values also demonstrated reliability, with a value of .87 for instrumentality and .88 for the 11-item expressiveness scale.

Bem (1974) obtained construct validity data using clinical measures of masculinity and femininity, which were moderately correlated with the BSRI. The scale was not designed to measure the same construct as these scales but rather to measure other aspects of gender roles. Therefore, the moderate level of the correlations was deemed to be accurate in suggesting that the measure is a valid measure of the constructs. In this sample, Bem (1974) also obtained discriminant validity data, finding correlations between social desirability and masculinity of $r = .42$ for men and $r = .19$ for women and between social desirability and femininity of $r = .28$ for men and $r = .26$ for women. These correlations were deemed sufficiently low to be assured that the validity of the scale was not based on social desirability. Holt and Ellis (1998) assessed the current validity of the BSRI using the same methods as in the original study. Because the criteria were met, this study confirmed the continued utility of the scale even with the social changes that have occurred since its original creation.
3.2.3 **Self-Esteem**

The Unconditional Self-Regard Scale (USRS; Betz et al., 1995) uses Carl Rogers’ (1961) theory of client-centered therapy as a basis for assessing global self-esteem. In this theory, the concept of unconditional self-regard is similar to the concept of unconditional positive regard in client-centered therapy as well as the Rogerian notion of self-ideal congruence, which is the noncontingent valuing and acceptance of oneself. This scale was selected for use in this study because it is functionally equivalent to other valid measures of self-esteem, and the theoretical underpinnings of the instrument fit best with the view of self-esteem in question in the current study. The USRS is a 20-item scale containing 5 filler items that are not scored. Responses are obtained on a 5-point Likert scale, with responses ranging from 1 (*strongly disagree*) to 5 (*strongly agree*). Examples of items include “Even though I make mistakes, I feel good about myself as a person”, as a positively worded item, and “I can never quite measure up to my own standards” as a negatively worded, reverse-scored item. Scores are computed by reverse-scoring negatively worded items and then summing the scores of the 15 included items, yielding scores ranging from 15-75, with higher scores indicating higher unconditional self-regard or global self-esteem (see Appendix C).

Betz et al. (1995) reported a coefficient alpha of .89 in the original development sample, and Smith and Betz (2002) reported a coefficient alpha value of .92, indicating adequate internal consistency reliability. In the current study, the coefficient alpha value was .91, suggesting that the scale is internally reliable.

Construct validity data in the scale development sample indicated moderate relationships with other measures of self-esteem and psychological adjustment (Betz et
Correlations with two other measures of self-esteem were $r = .78$ and $r = .64$, suggesting that this measure is not equivalent to the others but is measuring the same basic construct. Other concurrent validity measures were measures of anxiety and depression, and moderate negative relationships were found with these constructs, suggesting that self-esteem on the scale has a relationship with these psychological adjustment variables that is consistent with past measures. Discriminant validity was assessed in the development sample using measures of social desirability and self-consciousness, both of which should be unrelated to self-esteem. This validity was confirmed in that significant correlations were not found with either measure. Overall, these data suggest that the instrument is a valid measure of self-esteem.

### 3.2.4 Depression

The Beck Depression Inventory – Second Edition (BDI-II; Beck et al., 1996) measures the general affective, cognitive, motivational, and physiological symptoms of depression consistent with the *Diagnostic and Statistical Manual of Mental Disorders*, fourth edition (*DSM-IV*; American Psychiatric Association, 1994), measuring the presence of these symptoms in the past two weeks. When used for research purposes, it does not claim to diagnose individuals with clinical forms of depression, but rather to test for the presence of depressive symptoms. This measure of depression was selected for this study because it focuses on many of the cognitive factors of depression that were of interest in the study and because it can be applied to a non-depressed population more so than other measures of depression. Additionally, Beck et al. (1996) provide reliability and validity data for a sample of college students. The BDI-II consists of 21 items, and each item asks the respondent to indicate which of four statements applies to the way he or she...
feels. Scores range from 0 (least severe) to 3 (most severe). A sample item is “(0) I don’t cry any more than I used to, (1) I cry more than I used to, (2) I cry over every little thing, (3) I feel like crying, but I can’t.” A sum of all scores yields a total score ranging from 0 to 63, with higher scores indicating more severe depression (see Appendix D). For purposes of this study an item referring to suicidal behavior will be removed due to ethical concerns in the use of human subjects, making 60 the most extreme score possible on the resulting 20-item scale.

Beck et al. (1996) reported a coefficient alpha of .92 in an outpatient psychiatric sample and .93 for a non-psychiatric sample of college students and provided supportive validity data based on the entire scale, without the removal of the self-harm item. A recent study using the 20-item scale that excludes the self-harm item yielded a coefficient alpha of .92 (Stroiney, 2002). In the current sample, the alpha value was .92, indicating that this is an internally consistent measure. Beck et al. (1996) also assessed test-retest reliability over a one week period and obtained a value of $r = .93$. In regards to validity, concurrent construct validity was assessed through correlations with the original version of the Beck Depression Inventory as well as other measures of depression, measures of hopelessness, and suicidal ideation. A strong correlation was found with the original BDI, and moderate relationships were found with the other variables. Discriminant construct validity was assessed using measures of anxiety. Correlations were present, as is expected based on the comorbidity of anxiety and depression, but discriminant validity was evident in that these correlations were significantly lower than the correlations with other measures of depression. Overall, the validity of this measure for both psychiatric and non-psychiatric samples is well-supported.
3.2.5 **Self-Monitoring**

The Self-Monitoring Scale (SMS; Snyder 1974) is a measure of the degree to which an individual desires and is able to adjust his or her behavior across social situations. The SMS contains 25 items measured on a true(1)-false(0) scale. Examples of items include “I am not always the person I appear to be” and “I may deceive people by being friendly when I really dislike them”. Scores are calculated by reverse-scoring items suggesting difficulty or lack of desire to blend in and summing the scores, yielding scores ranging from 0-25, with higher scores indicating increased self-monitoring (see Appendix E).

Reliability data demonstrate coefficient alphas between .62 and .70 (Snyder & Gangestad, 1986) and a test-retest reliability of \( r = .83 \) (Snyder, 1974). In the current sample, the alpha coefficient was .63, suggesting that the measure is moderately reliable. The validity and factor structure have been explored extensively, and a recent exploration of validity using Q-sort ratings demonstrated that the original version of the SMS was the most representative of the construct of self-monitoring (John et al., 1996). Therefore, despite the lower reliability coefficient of this scale, it was selected for this study because of its more accurate representation of the construct. In regards to construct validity, concurrent validity has been assessed using comparisons to other measures of self-monitoring. In one study, this correlation was found to be \( r = .52 \) and was estimated at \( r = .72 \) after accounting for the fact that the scales were both not very reliable (Lennox & Wolfe, 1984). In addition, significant correlations have been found with observer descriptions of self-monitoring and social potency to demonstrate some concurrent validity (John et al., 1996). Therefore, although the validity of this scale has been
criticized, it does have some data that support its validity, and it has been asserted as the most valid measure of the construct that is currently available.

3.2.6 Loneliness

The Revised UCLA Loneliness Scale (R-UCLA; Russell et al., 1980) is a measure of global loneliness that measures an individual’s dissatisfaction with social relationships, both related to lack of intimate relationships and a lack of a social network of friends. This measure of loneliness was selected because it appears to be the most widely used measure of loneliness and because the reliability and validity data support the use of the instrument. The R-UCLA consists of 20 items measured on a 4-point Likert scale ranging from 1 (never) to 4 (often). Examples of items include “I am no longer close to anyone” and “I lack companionship”. Scores are calculated by reverse-scoring items suggesting closeness to others and summing the scores, yielding scores ranging from 20-80, with higher scores indicating greater loneliness (see Appendix F).

Russell et al. (1980) reported a coefficient alpha of .94, indicating adequate internal consistency reliability. In the present study, a similar value of .93 was obtained. Construct and criterion-related validity data has subsequently been examined. A correlation coefficient of $r = .74$ has been reported with other measures of loneliness, demonstrating construct validity, and a correlation of $r = .72$ has been reported with overt statements of loneliness, demonstrating criterion-related validity (McWhirter, 1997). In addition, concurrent validity was supported through moderate to strong correlations with measures of depression, self-esteem, and anxiety, which are conceptually and practically related to loneliness (Russell et al., 1980). In regards to discriminant validity, the developmental study reported non-significant correlations with sensitivity to rejection,
social desirability, and lying, all of which are theoretically unrelated to loneliness. These data support both the reliability and validity of the measure.

3.2.7 **Demographic Questionnaire**

A brief questionnaire requesting gender, age, year in school, ethnicity, and a variety of variables related to socioeconomic status was also included within the measures (see Appendix G).

### 3.3 Procedure

Participants first completed the instruments in the following order: Scale of Perceived Social Self-Efficacy, the Bem Sex Role Inventory, the Unconditional Self-Regard Scale, the Beck Depression Inventory, the Self-Monitoring Scale, the Revised UCLA Loneliness Scale, and the Demographic Questionnaire. The order of administration was determined by importance to the project, and scales with similar content were separated to avoid fatigue of the participants. Because this separation occurred, it was determined that a fixed order based on importance of instruments would be preferred over counterbalancing of measures. Instruments were administered via computer using the Psychological Inventory Generator (Bean, 2001), which is a computer program that presents items one at a time on a computer screen. After completing all measures, participants were handed a hard copy of a debriefing form describing the purpose of the research and given credit for their participation (see Appendix H).

### 3.4 Analysis of Data

Initially, descriptive statistics including means and standard deviations were calculated for each scale. Gender and ethnic differences were examined using Multivariate Analysis of Variance (MANOVA), which allowed for a constant
experiment-wise error rate of .05. Subsequently, post hoc comparisons were used to assess gender and racial differences on each measure. Next, to determine whether racial difference could be better explained by differences in socioeconomic status (SES), a MANOVA, followed by post hoc comparisons, was used to test for racial differences in the SES variables. Correlations between model variables and SES variables were then calculated to determine if SES was related to these variables and could be related to racial differences in the variables.

The next step of data analysis was to test the relationships between variables. First, correlations were calculated for each gender among the variables. Fisher’s $Z$-transformations were used, followed by a $z$-test, to determine the significance of gender differences in correlations. Next, path analysis was used to test the covariance structure of the data using the EQS (Version 5.7) program (Bentler, 1995). First, the model including instrumentality, expressiveness, social self-efficacy, and depression only was tested using the full sample and then separately for each gender. Next, the full hypothesized models for the outcome variables of loneliness and depression were tested and assessed in the calibration sample. The models with the best fit were selected for use in further analyses. Because modification was not suggested using the Wald and LaGrange multiplier tests, it was not necessary to revise the models or to cross-validate the models using the validation sample. The selected models were then tested in the full sample and separately for each gender.

Finally, to test the possible moderating role of self-monitoring, a hierarchical multiple regression analysis was used for both the relationship between social self-efficacy and depression and between social self-efficacy and self-esteem.
4.1 Means, Standard Deviations, and Gender and Ethnic Comparisons

Table 4.1 presents the means, standard deviations, and gender comparisons for all measured variables. To test for the presence of gender differences across all variables, a Multivariate Analysis of Variance (MANOVA) was used. This test was statistically significant (Pillai’s $V = .18$, $F(7,687) = 21.89$, $p < .001$), meaning differences in variables could be tested individually. The results of these univariate post hoc tests demonstrated that females scored higher than males in expressiveness ($F(1,694) = 65.96$, $p < .001$). No difference was found, however, in instrumentality, demonstrating that both men and women have similar levels of traditionally masculine traits but that women retain a higher level of traditionally feminine traits than men.

Univariate tests of other variables revealed no significant gender differences in social self-efficacy or self-esteem. Women did report slightly higher levels of depressive symptomatology ($F(1,694) = 7.58$, $p < .01$) and men reported higher levels of self-monitoring ($F(1,694) = 32.46$, $p < .001$) and loneliness ($F(1,694) = 12.92$, $p < .001$). Effect size (Cohen’s $d$) for each comparison was calculated in order to evaluate the practical significance of statistically significant effects. With large sample sizes such as these, differences small in magnitude can easily reach statistical significance, so it is
important to determine the usefulness of the data. Cohen (1988) suggested that effect sizes of .20 to .50 indicate a small to moderately-sized difference, while values from .50 to .80 indicate a large difference. Therefore, a cut-off of .20 was used for interpretation. All statistically significant gender differences reached this cut-off, so interpretation was deemed appropriate. The gender differences in depression ($d = .21$), self-monitoring ($d = .43$), and loneliness ($d = .27$) all yielded small to moderate effects. The gender difference in expressiveness is particularly meaningful, yielding a large effect ($d = .62$).

A MANOVA of ethnic differences among African American, Asian/Asian American, and Caucasian participants was also significant (Pillai’s $V = .08$, $F(14,1312) = 3.76, p < .001$). Table 4.2 displays the results of post hoc univariate tests as well as the race-specific means and standard deviations on each variable. To test for specific differences for each race among each significant univariate test, the Tukey honestly significant difference (HSD) test was used as a post hoc comparison test. Univariate tests were significant for social self-efficacy ($F(2,661) = 6.62, p < .01$), instrumentality ($F(2,661) = 8.14, p < .001$), and self-esteem ($F(2,661) = 4.63, p < .05$), meaning that there was an overall difference in the means of the three racial groups for each of these variables.

The Tukey HSD test revealed that African Americans reported significantly higher social self-efficacy than either Asian/Asian Americans or Caucasians, who did not differ significantly. For instrumentality, Caucasians and African Americans did not differ, but both groups scored significantly higher than Asian/Asian Americans on this variable. Finally, African Americans reported significantly higher self-esteem than Caucasians. On this variable, Asian/Asian Americans did not differ significantly from either group, with their scores falling in between the other two groups. These results
demonstrate that, where differences exist, the African Americans in this sample scored higher than the other groups, with Asian/Asian Americans and Caucasians varying in their position.

Effect sizes (Cohen’s $d$) are also reported in table 4.2. These effect sizes were calculated for each statistically significant racial difference as determined by the post hoc tests. As with the gender differences, all racial differences exceeded the cut-off of $d = .20$ and yielded moderate to large effect sizes. Specifically, African American and Caucasian participants differed to a moderate degree ($d = .42$), while this effect was large for the difference between African American and Asian/Asian American participants ($d = .69$). The effect was also large between these groups for instrumentality ($d = .70$). Also for instrumentality, the difference between Asian/Americans and Caucasians was moderate ($d = .42$). Finally, the difference between African Americans and Caucasians in self-esteem had a moderate effect ($d = .48$). Because these effect sizes are moderate to large, all statistically significant racial differences must also be practically significant.

Because racial differences can often be accounted for by socioeconomic status (SES), these results were also analyzed to account for this variable. Because it is generally recommended to analyze socioeconomic variables separately rather than using a composite socioeconomic status variable (Ensminger et al., 2000), each of four socioeconomic variables were analyzed. These variables included the yearly income level, which was adjusted for number of household members, the marital status of parents, mother’s education level, and father’s education level. Analyses were conducted only to test for differences in social self-efficacy, instrumentality, and self-esteem because these variables were the only ones with significant racial differences.
First, to assure the existence of racial differences in SES, a MANOVA was used for these three variables and was significant (Pillai’s $V = .03$, $F(6,1322) = 3.89$, $p < .001$). Post hoc univariate tests were then conducted, and significant racial differences were present in all four tested SES variables. Therefore, it was appropriate to further test each of these variables as possible determinants of racial differences in social self-efficacy, instrumentality, and self-esteem.

Next, to determine if SES differences existed in the three model variables, further statistical tests were conducted for each SES variable. For parents’ marital status, a MANOVA was used because the variable was not continuous. The MANOVA was not significant, suggesting that no significant differences were present in social self-efficacy, instrumentality, or self-esteem for the various marital statuses. For income, mother’s education, and father’s education, correlations were analyzed between each SES and model variable. None of these correlations reached statistical significance. Therefore, no evidence was found that SES contributes to differences in social self-efficacy, instrumentality, or self-esteem. Because SES variables do not account for any differences in the model variables, it follows that they cannot account for racial differences in these variables. The racial differences found in social self-efficacy, instrumentality, and self-esteem do not appear to be influenced by racial differences in socioeconomic status.

4.2 Correlations among the Variables

Table 4.3 shows the bivariate correlations among social self-efficacy, instrumentality, expressiveness, self-esteem, levels of depression, self-monitoring, and loneliness for each gender. Correlations between social self-efficacy and instrumentality were $r = .60$ for females and $r = .56$ for males, and correlations between social self-
efficacy and expressiveness were $r = .41$ for females and $r = .43$ for males, meaning that higher levels of social self-efficacy were associated with higher levels of both gender role variables. The correlations between social self-efficacy and self-monitoring were also small but significant ($r = .13$ for males and $r = .14$ for females), meaning that people with higher levels of social self-efficacy are more likely to self-monitor.

In regards to the relationships between social self-efficacy and the psychological adjustment variables, the correlations between social self-efficacy and self-esteem were $r = .50$ for females and $r = .47$ for males, meaning that individuals with higher self-esteem also tend to report higher levels of social self-efficacy. The correlations between social self-efficacy and loneliness were $r = -.55$ for females and $r = -.49$ for males and those between social self-efficacy and depression were $r = -.39$ for females and $r = -.24$ for males, meaning that higher social self-efficacy is related to lower levels of depressive symptomatology and loneliness. For the latter relationship, the gender difference was significant ($z = 2.19, p < .05$) as determined by a $z$-test using Fisher’s $Z$-transformation (Glass & Hopkins, 1984). Another significant gender difference in correlation was found in the relationship between the psychological adjustment variables of loneliness and depression ($z = 3.03, p < .01$) with correlations of $r = .63$ for females and $r = .47$ for males. This means that the association between depression and loneliness is stronger in women than in men.

Correlations between psychological adjustment and personality variables also reveal many relationships of interest. The correlations between instrumentality and self-esteem were $r = .29$ for females and $r = .32$ for males and those between expressiveness and self-esteem were $r = .30$ for females and $r = .26$ for males. This means that
individuals with higher levels of both gender role variables also reported higher self-esteem. Correlations between instrumentality and loneliness \((r = -.28 \text{ for both genders})\) and expressiveness and loneliness \((r = -.39 \text{ for females and } r = -.37 \text{ for males})\) also indicated positive adjustment for both variables, with higher levels of both gender role variables predicting decreased loneliness. The correlations between instrumentality and depressive symptomatology were \(r = -.23 \text{ for females and } r = -.18 \text{ for males}\), showing that higher levels of instrumentality is associated with lower levels of depression. For expressiveness, the relationship between expressiveness and depression was significant for females \((r = -.24)\) but not for males, meaning that higher levels of expressiveness are associated with lower levels of depression for females only. A \(z\)-test using Fisher’s \(Z\)-transformation did not, however, reveal a significant gender difference in these correlations.

Also of interest are the small but significant correlations between self-monitoring and depression \((r = .11 \text{ for females and } r = .13 \text{ for males})\), indicating that individuals who report more depressive symptoms also tend to report more self-monitoring. Finally, the relationship between self-esteem and depressive symptomatology was of interest. Correlations between these variables were \(r = -.68 \text{ for females and } r = -.60 \text{ for males}\), indicating that individuals with higher levels of self-esteem are less likely to report symptoms of depression.

4.3 Path Analyses of the Relationship between Instrumentality, Expressiveness, Social Self-Efficacy, and Depressive Symptomatology

To replicate the model for these variables found by Stroiney (2002) and to further explore gender differences in the model, a path analysis was conducted first for the full
sample and subsequently for each gender. The overall fit of the model was evaluated using several goodness of fit indices. The indices used were the chi-square test, the Bentler-Bonett normed fit index (NFI), the Bentler-Bonett non-normed fit index (NNFI), the comparative fit index (CFI), and the root mean squared error of approximation (RMSEA) (Bentler, 1995). Past uses of the NFI, NNFI, and CFI have set a value of .90 as an adequate model, but because some argue that these standards are too liberal (Hu & Bentler, 1999), values of .95 and higher were accepted as adequate in the present study. The chi-square test demonstrates adequate fit if the obtained test statistic is not significant at a .05 level, and the RMSEA values in the present study were judged using the criteria set by Browne and Cudeck (1992), where values less than .05 indicate close fit and are preferred, values between .05 and .08 indicate reasonable fit, values above .08 indicate mediocre fit, and values above .10 indicate unacceptable fit. MacCallum and Austin (2000) recommend using multiple fit indices, paying particular attention to the RMSEA due to its sensitivity and its ability to provide a confidence interval. Therefore, the model was judged based on its satisfaction of the standards for all or almost all of the fit indices used. Results of these tests of goodness of fit are displayed in Table 4.4.

Table 4.4 also includes confidence intervals for the RMSEA statistic. These values are of importance in the analysis of the statistical power of the model. MacCallum, Brown, and Sugawara (1996) strongly recommend the use of confidence intervals in the interpretation of results. This analysis indicates a range of possible values for the RMSEA statistic. Therefore, although the RMSEA value itself may indicate good or adequate fit, this fit cannot be guaranteed if the upper bound of the confidence interval exceeds .10, which has been considered an acceptable cut-off point (MacCallum et al.,
1996). These authors also provide tables for power analysis based on degrees of freedom in the model and sample size. Smaller sample sizes or fewer degrees of freedom decrease the power of the RMSEA statistic, thus widening the confidence interval. Based on these statistical tables, the power for this model does not meet the standard of a power of .50. This is because, although the sample is large, the two degrees of freedom for the model keep the power low. The two degrees of freedom result from the two fixed parameters in the model, or the two possible path relationships that are not included in the model (between instrumentality and expressiveness, and between instrumentality and depression). Because models with a small number of variables cannot have many degrees of freedom (the highest possible degrees of freedom is three for a model with four variables), power is a problem for any small, parsimonious model. This power deficiency is evident in the relatively wide confidence intervals for all tested models (see Table 4.4). The deficiency does not, however, compromise the results of the study. For this model in the full sample, the confidence interval of (0, .06) still indicates close fit and falls within the acceptable range of an upper bound below .10.

For the full sample, all goodness of fit indices demonstrated good fit for the model, thus replicating the findings of Stroiney (2002). As seen in figure 4.1, the path coefficient on the path between instrumentality and social self-efficacy was .58 and the coefficient of the path from social self-efficacy to depression was -.32. A significant path coefficient of .39 was also found on the path between social self-efficacy and expressiveness. This model further demonstrates the mediating role of social self-efficacy in the relationship between instrumentality and depressive symptomatology as well as the partial mediation of expressiveness in the relationship between social self-efficacy and
depressive symptomatology. The $R^2$ values indicate that the model accounts for 10% of the variance in levels of depression.

Figure 4.2 illustrates the path coefficients for the model when analyzed separately for each gender. These results are consistent with the values for the full sample. Also, the goodness of fit indices all indicate good fit for the model in both genders, suggesting that the model is valid for both males and females. The $R^2$ values indicate that the model accounts for 6% and 16% of the variance in depressive symptomatology for males and females, respectively.

4.4 Path Analyses of the Proposed Models for Depression and Loneliness

In testing the hypothesized models for depression and loneliness, a combination of the alternative models and the model generation and modification strategies for structural equation modeling were used. MacCallum and Austin (2000) list both methods as valid methods for conducting analyses using structural equation modeling. The alternative model strategy involves evaluating a variety of theoretically possible models and selecting the model with the best fit. The model generation and modification strategy involves testing a model first using a calibration sample, and making modifications based on the Wald test, which uses a chi-square difference test to indicate any paths that may be eliminated, and the Lagrange Multiplier (LM) test, which uses a chi-square difference test to indicate any paths that would significantly improve the model if added (Bentler, 1995). If changes were made, the model would then be cross-validated using the validation sample.

In this study, three alternative models for depression and two for loneliness were proposed and tested. For both outcome variables, one of the models demonstrated good
fit in the calibration sample, with no changes being suggested by the Wald or Lagrange Multiplier tests. Therefore, the model generation and modification strategy was not needed, and the validation sample was not used. Instead, each selected model was assessed in the full sample and for each gender separately. The overall fit of each model was evaluated using the same goodness of fit indices as were used in the path analysis of the original model. The goodness of fit results for all tested models can be found in Table 4.4. As with the original model for depression, the confidence intervals for the RMSEA statistic were used in the evaluation of the model as an indicator of statistical power. Although power was somewhat deficient in these models, the confidence intervals were narrow enough to ensure the adequacy of fit.

4.4.1 Path Analyses of the Proposed Models for Depression

Path analyses of the first and second models for depression in the calibration sample demonstrated inadequate fit on all indices. Therefore, no further analyses were done on these models. The third model for depression, however, demonstrated good fit on all indices in the calibration sample and was therefore tested in the full sample. These results are illustrated in Figure 4.3. This model differs from the other proposed models in that no direct pathway is present between instrumentality and self-esteem but instead social self-efficacy serves as a mediator between these variables. This model also differs from the previous model that did not include self-esteem in that no direct pathway is present between expressiveness and depression but instead a pathway is present between expressiveness and self-esteem, which then has its own pathway to depression.

As seen in the original model, a path coefficient of .58 is present between instrumentality and social self-efficacy and one of .39 is present between social self-
efficacy and expressiveness. The pathway between social self-efficacy and depression, however, is not significant in this model. Instead, it appears that self-esteem mediates that relationship with a path coefficient of .45 between social self-efficacy and self-esteem and one of -.63 between self-esteem and depression. Also, the pathway from expressiveness to self-esteem has a significant coefficient of .09. The $R^2$ values indicate that the model accounts for 41% of the variance in depressive symptomatology.

Figure 4.4 illustrates the model and path coefficients when the model was analyzed separately for each gender. All goodness of fit indices demonstrate good fit for both genders, indicating that the model applies to both males and females. Path coefficients are also comparable to the full model and most path coefficients are similar for each gender. The path between expressiveness and self-esteem, however, is of interest because it is significant for females but not males. The $R^2$ values indicate that the model accounts for 36% and 47% of the variance in depressive symptomatology for males and females, respectively.

4.4.2 Path Analyses of the Proposed Models for Loneliness

A path analysis of the second model for loneliness in the calibration sample demonstrated inadequate fit, and no further analysis was completed on this model. The first model for loneliness, however, did demonstrate good fit on all fit indices in the calibration sample. Therefore, it was subsequently tested in the full sample and for each gender separately. This model differs from the rejected model for loneliness in that a path is included between social self-efficacy and self-esteem and a path is included between expressiveness and loneliness but not between expressiveness and self-esteem.
An illustration of this model with path coefficients in the full sample can be found in Figure 4.5. Although all goodness of fit measures demonstrated good fit in the calibration sample, the RMSEA value in the full sample was .06, indicating adequate but not good fit, and the chi-square test was significant ($\chi^2 (3, N = 696) = 10.08, p < .05$), suggesting inadequate fit. The other fit indices, however, were well above the standard of .95. Also, the confidence interval for RMSEA (.02, .10) indicates that a better fit is possible but that inadequate fit is not possible if a cut-off of .10 is used. Therefore, the overall fit was deemed adequate and the model appears valid. In regards to the model itself, all path coefficients were significant except the path between instrumentality and self-esteem, further supporting the mediating role of social self-efficacy between these variables. Self-esteem and expressiveness also appear to be partial mediators in the relationship between social self-efficacy and loneliness. The direct pathway between these variables had a coefficient of -.23, and the path between self-esteem and loneliness had a coefficient of -.44, suggesting that social self-efficacy is related to increased self-esteem, which is subsequently related to lower levels of loneliness. Also, the path coefficient between expressiveness and loneliness is -.19, suggesting that increased expressiveness plays a role in decreased loneliness. The $R^2$ values indicate that the model accounts for 45% of the variance in loneliness.

The results of the separate analyses of this model by gender are illustrated in Figure 4.6. The path coefficients for each gender do not show any significant differences between genders or as compared to the full sample. The fit indices, however, do show some differences. For males, the fit indices all demonstrate good fit. The fit indices for females, however, are similar to the results of the full sample. Although the majority of
the fit indices demonstrate good fit, the RMSEA value of .08 is deemed only adequate and the chi-square value is significant ($\chi^2 (3, N = 350) = 9.03, p < .05$), suggesting inadequate fit. In this case, the wide confidence interval with an upper bound of .14 for the RMSEA value also casts doubt upon the adequacy of fit for this statistic. As with the full model, the composite picture of fit indices still suggests an acceptable model, but the implications of the gender differences in fit may indicate that the results can more confidently be applied to males than females. For these analyses, the $R^2$ values indicate that the model accounts for 45% and 46% of the variance in loneliness for males and females, respectively.

4.5 **Analysis of the Role of Self-Monitoring**

To test for a possible moderating role of self-monitoring, both between social self-efficacy and depressive symptomatology and social self-efficacy and self-esteem, a hierarchical multiple regression analysis was completed. In the hierarchical regression analyses with both depression and self-esteem as the dependent variable, social self-efficacy was entered on the first step, self-monitoring was added on the second step, and the interaction between social self-efficacy and self-monitoring was added on the third and final step. To show a significant moderating role of self-monitoring, the $R^2$ change statistic should not be significant on the second step, when self-monitoring is added, but should be significant on the third step, when the interaction is added.

The results of the analyses for both dependent variables demonstrated no moderating role of self-monitoring. For the relationship between social self-efficacy and depressive symptomatology, the first step was significant ($R^2 = .10, p < .001$) but the subsequent steps showed opposite results of what would be indicative of a moderator.
The second step demonstrated a significant change ($R^2$ change = .02, $p < .001$), and the third step demonstrated and insignificant change when the interaction was added. Similarly, for the relationship between social self-efficacy and self-esteem, the first step was significant ($R^2 = .23, p < .001$) but the second step was also significant ($R^2$ change = .02, $p < .001$). Again, the third step where the interaction was added indicated no change, demonstrating that self-monitoring does not act as a moderator in the relationship between social self-efficacy and self-esteem. Because these results were not significant, no further analyses were completed using self-monitoring as a moderator in any relationships.
<table>
<thead>
<tr>
<th></th>
<th>Females (N=350)</th>
<th>Males (N=346)</th>
<th>combined</th>
<th>$F(1,694)$</th>
<th>Effect size</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>$M$</td>
<td>$M$</td>
<td>$SD$</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Social Self-Efficacy</td>
<td>3.52</td>
<td>3.55</td>
<td>0.64</td>
<td>0.30</td>
<td></td>
</tr>
<tr>
<td>Bem Sex Role Inventory</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Instrumentality</td>
<td>61.89</td>
<td>63.08</td>
<td>7.96</td>
<td>3.83</td>
<td></td>
</tr>
<tr>
<td>Expressiveness</td>
<td>45.44</td>
<td>42.10</td>
<td>5.42</td>
<td>65.96***</td>
<td>.62</td>
</tr>
<tr>
<td>Self-Esteem</td>
<td>54.70</td>
<td>54.94</td>
<td>10.36</td>
<td>0.09</td>
<td></td>
</tr>
<tr>
<td>Depression</td>
<td>8.60</td>
<td>6.96</td>
<td>7.85</td>
<td>7.58**</td>
<td>.21</td>
</tr>
<tr>
<td>Self-Monitoring</td>
<td>11.81</td>
<td>13.39</td>
<td>3.67</td>
<td>32.46***</td>
<td>.43</td>
</tr>
<tr>
<td>Loneliness</td>
<td>34.55</td>
<td>37.43</td>
<td>10.59</td>
<td>12.92***</td>
<td>.27</td>
</tr>
</tbody>
</table>

Table 4.1: Means and post hoc univariate comparisons across genders.

* $p < .05$  ** $p < .01$  *** $p < .001$
<table>
<thead>
<tr>
<th></th>
<th>African American (N=42) Effect</th>
<th>Asian/Asian Am. (N=49) Effect</th>
<th>Caucasian (N=574) Effect</th>
<th>F(2,661)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>M</td>
<td>SD</td>
<td>d</td>
<td>M</td>
</tr>
<tr>
<td>Social Self-Efficacy</td>
<td>3.82</td>
<td>0.76</td>
<td>.69</td>
<td>3.34</td>
</tr>
<tr>
<td>Instrumentality</td>
<td>65.62</td>
<td>10.16</td>
<td>.70</td>
<td>59.27</td>
</tr>
<tr>
<td>Expressiveness</td>
<td>43.81</td>
<td>7.75</td>
<td></td>
<td>43.04</td>
</tr>
<tr>
<td>Self-esteem</td>
<td>59.62</td>
<td>10.55</td>
<td></td>
<td>55.08</td>
</tr>
<tr>
<td>Depression</td>
<td>8.40</td>
<td>10.82</td>
<td></td>
<td>6.88</td>
</tr>
<tr>
<td>Self-Monitoring</td>
<td>12.67</td>
<td>3.99</td>
<td></td>
<td>12.63</td>
</tr>
<tr>
<td>Loneliness</td>
<td>37.05</td>
<td>11.52</td>
<td></td>
<td>38.04</td>
</tr>
</tbody>
</table>

Table 4.2: Means and post hoc univariate racial comparisons.

Note. Means in the same row that do not share subscripts differ at $p < .05$ in the Tukey honestly significant difference comparison. Effect sizes in the first column represent differences between African and Asian Americans. Effect sizes in the second column represent differences between Asian Americans and Caucasians. Effect sizes in the third column represent differences between African Americans and Caucasians.

*p < .05  **p < .01  ***p < .001
<table>
<thead>
<tr>
<th>Variable</th>
<th>1.</th>
<th>2.</th>
<th>3.</th>
<th>4.</th>
<th>5.</th>
<th>6.</th>
<th>7.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Social Self-Efficacy</td>
<td>--</td>
<td>.60**</td>
<td>.41**</td>
<td>.50**</td>
<td>-.39**</td>
<td>.13*</td>
<td>-.55**</td>
</tr>
<tr>
<td>2. Instrumentality</td>
<td>.56**</td>
<td>--</td>
<td>.28**</td>
<td>.29**</td>
<td>-.23**</td>
<td>.12*</td>
<td>-.28**</td>
</tr>
<tr>
<td>3. Expressiveness</td>
<td>.43**</td>
<td>.28**</td>
<td>--</td>
<td>.30**</td>
<td>-.24**</td>
<td>.01</td>
<td>-.39**</td>
</tr>
<tr>
<td>4. Self-esteem</td>
<td>.47**</td>
<td>.32**</td>
<td>.26**</td>
<td>--</td>
<td>-.68**</td>
<td>-.08</td>
<td>-.60**</td>
</tr>
<tr>
<td>5. Depression</td>
<td>-.24**</td>
<td>-.18**</td>
<td>-.10</td>
<td>-.60**</td>
<td>--</td>
<td>.11*</td>
<td>.63**</td>
</tr>
<tr>
<td>6. Self-Monitoring</td>
<td>.14**</td>
<td>.12*</td>
<td>.07</td>
<td>-.09</td>
<td>.13*</td>
<td>--</td>
<td>.05</td>
</tr>
<tr>
<td>7. Loneliness</td>
<td>-.49**</td>
<td>-.28**</td>
<td>-.37**</td>
<td>-.61**</td>
<td>.47**</td>
<td>.05</td>
<td>--</td>
</tr>
</tbody>
</table>

Table 4.3: Intercorrelations among the variables.

*Note.* Values for 350 females are listed above the diagonal and values for 346 males are listed below the diagonal.

*p < .05, **p < .01
### Table 4.4: Results of goodness of fit indices for all tested models.

<table>
<thead>
<tr>
<th>Model</th>
<th>$\chi^2$ (df)</th>
<th>RMSEA (confidence interval)</th>
<th>CFI</th>
<th>NFI</th>
<th>NNFI</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Original Model</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Full Sample ($N=696$)</td>
<td>.86 (2)</td>
<td>.00 (0,.06)</td>
<td>1.00</td>
<td>1.00</td>
<td>1.01</td>
</tr>
<tr>
<td>Males ($N=346$)</td>
<td>1.82 (2)</td>
<td>.00 (0,.10)</td>
<td>1.00</td>
<td>.99</td>
<td>1.00</td>
</tr>
<tr>
<td>Females ($N=350$)</td>
<td>.83 (2)</td>
<td>.00 (0,.08)</td>
<td>1.00</td>
<td>1.00</td>
<td>1.01</td>
</tr>
<tr>
<td><strong>First Model for Depression</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Calibration Sample ($N=455$)</td>
<td>78.83* (4)</td>
<td>.20 (.17,.24)</td>
<td>.89</td>
<td>.89</td>
<td>.72</td>
</tr>
<tr>
<td><strong>Second Model for Depression</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Calibration Sample ($N=455$)</td>
<td>68.17* (4)</td>
<td>.19 (.15,.23)</td>
<td>.91</td>
<td>.91</td>
<td>.76</td>
</tr>
<tr>
<td><strong>Third Model for Depression</strong></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Calibration Sample ($N=455$)</td>
<td>7.05 (4)</td>
<td>.04 (0,.09)</td>
<td>1.00</td>
<td>.99</td>
<td>.99</td>
</tr>
<tr>
<td>Full Sample ($N=696$)</td>
<td>3.15 (4)</td>
<td>.00 (0,.05)</td>
<td>1.00</td>
<td>1.00</td>
<td>1.00</td>
</tr>
<tr>
<td>Males ($N=346$)</td>
<td>3.93 (4)</td>
<td>.00 (0,.08)</td>
<td>1.00</td>
<td>.99</td>
<td>1.00</td>
</tr>
<tr>
<td>Females ($N=350$)</td>
<td>1.18 (4)</td>
<td>.00 (0,.04)</td>
<td>1.00</td>
<td>1.00</td>
<td>1.01</td>
</tr>
<tr>
<td><strong>First Model for Loneliness</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Calibration sample ($N=455$)</td>
<td>4.29 (3)</td>
<td>.03 (0,.09)</td>
<td>1.00</td>
<td>.99</td>
<td>.99</td>
</tr>
<tr>
<td>Full Sample ($N=696$)</td>
<td>10.08* (3)</td>
<td>.06 (.02,.10)</td>
<td>.99</td>
<td>.99</td>
<td>.98</td>
</tr>
<tr>
<td>Males ($N=346$)</td>
<td>3.12 (3)</td>
<td>.01 (0,.09)</td>
<td>1.00</td>
<td>.99</td>
<td>1.00</td>
</tr>
<tr>
<td>Females ($N=350$)</td>
<td>9.03* (3)</td>
<td>.08 (.02,.14)</td>
<td>.99</td>
<td>.98</td>
<td>.96</td>
</tr>
<tr>
<td><strong>Second Model for Loneliness</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Calibration sample ($N=455$)</td>
<td>95.44* (4)</td>
<td>.22 (.19,.26)</td>
<td>.87</td>
<td>.87</td>
<td>.67</td>
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</table>

* $p < .05$
Figure 4.1: Path analysis of the original model in the full sample

* $p < .05$
Figure 4.2: Path analysis of the original model for each gender.

*Note.* The first number on each path represents the path coefficient for 350 females. The second number represents the path coefficient for 346 males.

* $p < .05$
Figure 4.3: Path analysis of the third model for depression in the full sample.

* $p < .05$
Figure 4.4: Path analysis of the third model for depression for each gender.

*Note.* The first number on each path represents the path coefficient for 350 females. The second number represents the path coefficient for 346 males.

* *p < .05*
Figure 4.5: Path analysis of the first model for loneliness in the full sample.

* \( p < .05 \)
Figure 4.6: Path analysis of the first model for loneliness for each gender.

Note. The first number on each path represents the path coefficient for 350 females. The second number represents the path coefficient for 346 males.

* $p < .05$
CHAPTER 5

DISCUSSION

5.1 Review of the Objectives

The present study had four major objectives. The first objective was to replicate the path model first proposed by Stroiney (2002) that links instrumentality, expressiveness, social self-efficacy, and depressive symptomatology. This objective also included a gender-specific analysis of this model. The second objective was to expand on this model for depression by adding the variable of self-esteem. For this objective, three possible models were proposed, and the model with the best statistical fit was selected, deeming it a plausible representation of the relationships among the constructs included in the model. The third objective was to explore the role of loneliness as an outcome variable of a model including social self-efficacy, instrumentality, expressiveness, and self-esteem. For this objective, two models were proposed and the model with the best statistical fit was selected. The fourth and final objective was to test the hypothesis that self-monitoring could serve as a moderator of the relationships between social self-efficacy and symptoms of depression and between social self-efficacy and self-esteem. If this hypothesis was confirmed, the models would then be tested separately for high and low self-monitors. Overall, the purpose of the study was to explore and expand upon the
relationship between social self-efficacy, other personality variables, and psychological adjustment through the creation of plausible path models for these variables.

5.2 Summary of the Results

5.2.1 First Path Model

The results of this study sufficiently fulfilled the research objectives. The first major objective was to replicate the path model first proposed by Stroiney (2002). In the original model, shyness was also included as a variable, but it was excluded in this study because shyness is strongly related to social self-efficacy and did not appear to contribute enough unique variance to the model to be deemed as important as other variables. Therefore, the tested model included a pathway from instrumentality to social self-efficacy, followed by a direct pathway to depression. Also, expressiveness was included in this model as a mediator between social self-efficacy and depression. When tested, the original model was replicated. Excellent fit was demonstrated on a variety of model fit indices, suggesting that the model is in fact a plausible representation of the relationship between these variables. Also, the model accounted for 10% of the variation in depressive symptomatology in the full sample. This finding is similar to the findings of Stroiney (2002) where the model, with shyness included, accounted for 15% of the variation in depressive symptomatology.

Similar results were found when the model was tested in each gender, suggesting that the model can be applied similarly to both males and females. One difference, however, was the proportion of variance in depression that was accounted for by the model for each gender. This percentage was 6% for males and 16% for females. One possible explanation for this difference in this sample was a non-significant path
coefficient of -.10 between expressiveness and depression that was present for females but not for males. This difference can be traced to a significant correlation between these two variables for females that was not present for males. The gender difference in this correlation, however, was not significant, meaning that it is impossible to conclude that expressiveness is more strongly related to depressive symptomatology for females based on this data. In fact, Stroiney (2002) found a significant correlation for males but none for females, with no significant gender difference. These contradictory results suggest that these apparent differences are likely due to chance in both samples. Further data would be needed to make any distinct conclusions. One certainty, however, appears to be the insignificance of the pathway between expressiveness and depression in the model. Although a small, consistent correlation is present between expressiveness and depression, this relationship appears to be better accounted for by the direct relationship between social self-efficacy and depression.

Although this relationship may cause some of the discrepancy in the percentage of variance in depression for males versus females, this discrepancy can also be explained by the gender difference in the correlation between social self-efficacy and depression. This correlation is significantly stronger for females than males, and this difference is reflected in the path coefficient of -.35 for females and -.24 for males found in the model. This suggests that although the model fits for both genders equally, it may be more influential in explaining depressive symptomatology in women.

No other gender differences were present in correlations for the variables in this model, but gender differences in individual model variables were consistent with previous research. Females reported more expressive characteristics than males,
consistent with the findings of Twenge (1997) as well as earlier sex role research. Also, females reported higher levels of depressive symptomatology than males, which is a difference consistent with many studies on gender differences in depression (Sprock & Yoder, 1997).

Finally, racial differences in variables were relevant to this model. Although the sample sizes for Asian American and African American participants were too small to analyze the model separately from Caucasian participants, some racial differences in the variables found by Stroiney (2002) were also confirmed in this sample. One racial difference found in both the previous and current study was that African American participants reported a higher level of social self-efficacy than Asian American or Caucasian participants. Based on the known influence of social self-efficacy on psychological adjustment, these findings suggest that this group may have stronger, or possibly just different, coping mechanisms in place than the other racial groups. Of course, this possibility needs further exploration before any definite conclusions are possible.

Another racial difference is found in instrumentality, with African Americans and Caucasians reporting higher instrumentality than Asian Americans in the present study. Stroiney (2002) found that African Americans reported higher levels of this variable than either Asian American or Caucasian participants. Although these results differ somewhat, the difference between African and Asian Americans is clear. To explore these differences, a study of the differences between these two ethnic groups could help to clarify the implications of these findings. Overall, however, the findings in this study
serve to replicate those found by Stroiney (2002) and fulfill the objective of replicating the base path model used in this study.

5.2.2 **Expanded Path Model for Depression**

The second objective of this study was to expand on the aforementioned model through the addition of the variable of self-esteem. This variable was added in an effort to increase the variance accounted for by the model, and its selection was based on previous research on the relationship between self-esteem, social self-efficacy, and depression (Smith & Betz, 2002) as well as the relationship between self-esteem and the gender role variables of instrumentality and expressiveness (Allgood-Merton & Stockard, 1991). Three models were proposed based on previous research and unique hypotheses, and the model that was selected was the only one of the three with adequate statistical fit. In fact, this model had excellent fit, while the fit of the others was poor, making the selection process clear and confirming the hypotheses made in proposing this model. The selected model expanded upon the original model by deleting the previously insignificant pathway between expressiveness and depression and inserting a pathway between expressiveness and self-esteem, which did prove to be significant. Also, self-esteem was included as a partial mediator between social self-efficacy and depression in this model. This model differed from the rejected models in that both other models did not include a pathway between social self-efficacy and self-esteem but did include a pathway between instrumentality and self-esteem. Also, one of the rejected models included the pathway between expressiveness and depression that was omitted in the selected model.

The selected model for depression accounted for 41% of the variance in depressive symptomatology, fulfilling the objective of increasing this percentage and
demonstrating the significance of self-esteem in influencing depression. This result is particularly strong given the restriction of range for depressive symptomatology. Overall, the sample reported mild levels of depression, with few participants scoring above the midpoint of the scale. Therefore, the fact that so much variance in a small range of depressive symptoms was accounted for by the model implies that this number could be even larger for the full range of depressed individuals. These results were similar when the model was analyzed separately by gender, accounting for 36% of the variance in depression for males and 47% for females. These findings suggest that this model is best interpreted with the combined gender results.

Overall, the addition of this variable yielded a variety of other important findings. One finding of interest is the support of the hypothesis that social self-efficacy serves as a mediator between instrumentality and self-esteem. The hypothesis was based on the similar mediating role of social self-efficacy in the relationship between instrumentality and depressive symptomatology and was supported by this model. Although instrumentality and self-esteem have been demonstrated to be related in the past (Allgood-Merton & Stockard, 1991), it appears that social self-efficacy is essential in this relationship.

Another finding of interest in this model is the mediating role of self-esteem in the relationship between social self-efficacy and depression. Although a significant pathway was present between social self-efficacy and depression in the original model, this path becomes non-significant when self-esteem is present as a mediator. This suggests that social self-efficacy may only influence depressive symptomatology through its influence on self-esteem. A final important finding in this model is that the role of expressiveness
does appear to have a unique relationship with self-esteem and may influence psychological adjustment through increasing self-esteem rather than eliminating symptoms of depression. Overall, this objective of the study was fulfilled by producing an expanded model for depression that includes self-esteem.

5.2.3 **Path Model for Loneliness**

The third objective of the study was to form a plausible path model to represent a relationship between social self-efficacy, instrumentality, expressiveness, self-esteem, and loneliness. Loneliness, although correlated with depression, represents a unique psychological adjustment construct (Koenig et al., 1994). These previous authors also reported higher levels of loneliness in males than females and a gender difference in the correlation between loneliness in depression. These differences were also present in the current study, with males reporting higher levels of loneliness than females. The gender difference in the correlation, however, was in the opposite direction than expected. Koenig et al. (1994) found that the correlation was higher for males than for females, but the current study yielded a higher correlation in females than males. This discrepancy could be due to the fact that Koenig et al.’s (1994) study used a sample of children while the current sample was comprised of college students. To fully understand this discrepancy, however, further research is necessary. Currently, these findings serve to support the necessity to examine loneliness separate from depression and to explore gender differences in the model for loneliness.

Two models were proposed and tested with loneliness as the outcome variable. As with the models for depression, one of the models met the criteria for adequate statistical fit, and the other exhibited poor fit. The selected model included both self-esteem and
expressiveness as partial mediators in the relationship between social self-efficacy and loneliness. The direct relationship between social self-efficacy and loneliness was also retained. Additionally, as with depression, social self-efficacy was included as a mediator between instrumentality and loneliness. Finally, a direct pathway was included between instrumentality and self-esteem, but this path coefficient was not significant. This model differed from the rejected model in that it included a path between social self-efficacy and self-esteem whereas the rejected model did not. It also had a path between expressiveness and loneliness but did not have one between expressiveness and self-esteem, in contrast with the rejected model that had a path between expressiveness and self-esteem but not between expressiveness and loneliness.

The selected model accounted for 45% of the variance in loneliness, demonstrating the importance of the model variables in predicting loneliness. Several important findings were present. First, as with the model for depressive symptomatology, this model demonstrated the mediating role of social self-efficacy in the relationship between instrumentality and self-esteem. Although, the direct path is still included between instrumentality and self-esteem in this model, the path is not significant and can likely be omitted in future uses of this model. A second finding of interest is the significant pathway between expressiveness and loneliness. Although this relationship is not present in the model for depression, it is present in the model for loneliness. This further suggests that expressiveness plays a significant role in psychological adjustment. If the causal implications of the model are accurate, expressiveness seems to work with social self-efficacy and self-esteem to help alleviate loneliness. A final finding of interest that demonstrates the difference in the models for loneliness and depression is the role of
self-esteem. Although the path between social self-efficacy and depression disappears when self-esteem is added, the path between social self-efficacy and loneliness remains. This implies that self-esteem does partially serve as a mediator between social self-efficacy and loneliness but that social self-efficacy also uniquely contributes to loneliness.

Another important area in which to explore this model is in gender differences. Previous research suggests that gender may play a role in this model (Koenig et al., 1994), and the analysis of the model separately for each gender yielded some gender discrepancies. The variance accounted for by the model was essentially the same for each gender (45% for males and 46% for females), and the path coefficients for each gender were similar. The fit of the model, however, was different for males and females. When analyzed with males alone, the fit of the model was excellent. In contrast, the fit was not as strong for females. It was adequate as a whole, but two indices yielded values below the criteria for “good” fit of a model. Although these differences could not be tested statistically, the implication of the better fit for males is that the model can be more confidently applied to males than females. Because fit indices determine the plausibility of a model, better fit for men suggest that the model may be more plausible for this gender.

The difference in fit may be due in part to the gender difference in loneliness, where men report more loneliness than women. The gender difference in expressiveness could also play a role. Because men report lower levels of expressiveness than women, and expressiveness is an influential variable in the model predicting loneliness, increasing expressiveness in men may be an important component of decreasing loneliness.
Combining these factors, the model may help to explain why men tend to report more loneliness than women, but further research is necessary before this claim can be certain. Although the reason for this difference is not clear, it is clear that the model is a good model for predicting loneliness in men in particular. Overall, the model fulfilled this objective of the study.

5.2.4 The Role of Self-Monitoring

The final objective for this study was to explore the role of self-monitoring in relation to the other variables included in the various models. Based on previous research where self-monitoring served as a moderator between personality and psychological adjustment variables (Gonnerman et al., 2000), it was hypothesized that self-monitoring would moderate the relationships between social self-efficacy and depression and social self-efficacy and self-esteem. This would mean that high self-monitors would demonstrate these relationships but that the correlations would be insignificant for low self-monitors. This hypothesis, however, was not confirmed. Self-monitoring did not appear to moderate either relationship. As a result, the models were not analyzed separately for high or low self-monitors. Not only was self-monitoring not demonstrated to be a moderator in the relationships, but it also did not appear to be related to the other variables in the study. Although statistically significant correlations were present between self-monitoring and social self-efficacy, instrumentality, and depressive symptomatology, these correlations were weak and not practically significant. One thing to note, however, is that the limited reliability (coefficient alpha = .63) may have deflated these numbers. Therefore, if self-monitoring were included in a study involving these variables in the future, a more reliable, valid scale would need to be used. Overall, although this final
objective yielded non-significant results, the study fulfilled its purpose. Three adequate path models were validated, and results were consistent with previous findings. The findings also provide important implications for the practice of counseling and for future research directions.

5.3 Implications for Future Research

The current study has clarified the role of self-esteem in the relationship between instrumentality, expressiveness, social self-efficacy, and depressive symptomatology. In addition, it has distinguished loneliness as a psychological adjustment variable with a unique relationship with gender role variables, self-esteem, and social self-efficacy. These findings add to previous knowledge regarding these relationships, but they also can serve as a spark for new research. For example, the next most logical step is to attempt to create a more comprehensive model, combining the models with depression and loneliness as outcome variables. Now that the general pattern of interaction of these variables has been clarified, plausible models could more easily be proposed.

Another direction for research in light of these findings is to determine the accuracy of the causal relationships proposed by this model. Structural equation modeling allows for the implication of causality, but only a true experimental design could verify the causal pathways implied by the model. Therefore, in addition to their usefulness in counseling, interventions could be implemented to increase social self-efficacy and/or instrumentality to determine if levels of expressiveness, self-esteem, loneliness, and depressive symptomatology subsequently change. Such an intervention study would serve to solidify the results presented in the current study as well as provide valuable counseling tools.
On a broader scale, this study further demonstrates the importance of social self-efficacy in overall psychological adjustment. Its strong relationships with depressive symptomatology, loneliness, and self-esteem have been established, but further research is needed to determine the extent of its influence on other psychological adjustment variables (e.g. anxiety). Also, because it has now been demonstrated to mediate the relationship between instrumentality and both depression and self-esteem, it would be beneficial to explore its role as a mediator in the relationship between other personality and psychological adjustment variables with established relationships. This research has established social self-efficacy as an influential variable, and its study in relation to a variety of both social and psychological variables is warranted.

This study has also generated questions regarding a variety of gender and racial differences. The most notable gender difference is the difference in fit between genders for the model predicting loneliness. Further exploration of this difference might clarify its source. Another gender difference of interest is in the relationship between expressiveness and depressive symptomatology. In the present study, this relationship was significant for women but not for men, but this gender difference was opposite in a previous study (Stroiney, 2002). Therefore, further exploration as to the nature of this relationship as well as other variables that might contribute to the relationship may clarify these contradictory findings.

In regards to racial differences, further research could involve recruiting a more racially diverse sample and testing the applicability of each model for various racial groups. Some racial differences were present in the model variables themselves, and the impact of these differences on the models could be explored with larger samples of each
racial group. In addition, the sources of these racial differences would be a good next step for research. In particular, African Americans appear to report consistently higher levels of social self-efficacy and instrumentality than Asian/Asian Americans. The cultural differences between these two ethnic minority groups may play a role in these differences, but these cultural underpinnings are not apparent in the present research. In addition, stereotypes or different pressures from the majority culture may play into these differences. Also related to this difference, one possible direction is to determine the reasoning behind the fact that these variables, which predict loneliness and depression overall, contain these racial differences whereas racial differences are not present in loneliness and depression themselves. Although they Asian/Asian Americans have lower levels of social self-efficacy and instrumentality, other variables must be contributing to loneliness and depression to equalize their level with other groups. Overall, this research suggests a variety of directions for future research that may in turn influence the development of new counseling strategies.

5.4 Implications for Counseling

The results of this study have several implications for the practice of counseling. One major focus of counseling treatments, both for relief and prevention, is the treatment of depression. The expanded model for depression, accounting for 41% of the variance in depressive symptomatology, suggests that increasing levels of social self-efficacy, instrumentality, and self-esteem may decrease the likelihood of becoming depressed and may also relieve current symptoms of depression. Bandura (1977) originally intended self-efficacy theory to be applied to counseling, and interventions designed to increase self-efficacy have been successful (e.g. Betz & Schifano, 2000). This study only serves to
demonstrate that such an intervention for social self-efficacy would expand beyond the social realm alone. Also, indirectly, treatments that increase levels of instrumentality may increase social self-efficacy and consequently increase self-esteem and reduce depression. It is important to note, however, that the level of depressive symptomatology in this sample was fairly mild. Therefore, the current research supports the usefulness of interventions that increase social self-efficacy and self-esteem for individuals with mild to moderate levels of depression, but their usefulness for extremely depressed individuals should be explored further using a clinical sample. In light of the large percentage of variance accounted for in this mildly depressed sample, however, the results still have strong implications for treatment. Development of a treatment program that increases social self-efficacy has the potential not only to increase expressiveness, self-esteem, and possibly other correlates of social self-efficacy (e.g. social anxiety), but also may also ultimately reduce or prevent depression.

Another possible counseling use of the information from this study is in the prevention of loneliness and the treatment of individuals who feel lonely. Counseling interventions to increase social self-efficacy, instrumentality, and expressiveness may serve to decrease loneliness in similar ways to the implications for symptoms of depression. The implications of the loneliness findings, however, go beyond these counseling interventions. The participants in this study were mainly students in their first quarter of their college education. Beginning college students are often particularly susceptible to loneliness because they have just entered a new social environment. Therefore, an outreach-based intervention for loneliness could be implemented into freshman orientation programs and residence hall activities. Such an outreach program
would be more far-reaching than a counseling intervention for more clinical psychological adjustment issues. Of course, an evaluation of such a program would be necessary, but these findings provide a basis on which to develop this type of program.

5.5 Limitations of the Study

A major limitation of the current study is in the demographics of the sample. The data used in this study was collected mainly from 18-year-old first year college students in their first few months at a large university. Because of the age group of the sample, the results cannot necessarily be generalized to adult populations or to non-college populations. Also, because most of the students had just begun college, their social confidence may have been undermined by the difficulty of adjusting to college life. Therefore, the results should be tested on older, more settled populations before they are generalized to those groups. Another aspect of the sample that limits the results is that a large percentage of the participants were Caucasian. Although testable samples of African Americans and Asian/Asian Americans were also obtained, not enough Latino/a individuals participated to be used in analysis, and no participants identified themselves as American Indian, although it was an option for ethnicity. Also, ideally the Asian American population could be separated from international students from Asian countries to distinguish between these groups.

Another limitation of the study can be found in the deficiency in statistical power of the RMSEA fit index, which was used in part to analyze the fit of the path models. Although the lack of power did not significantly hinder overall confidence in the results, it did prevent the close fit of the models from being verified. The power deficiency was caused by the small number of variables included in each model. Although the sample
size was large, it would have needed to be even larger to raise the power of this statistic to a more satisfactory level. Therefore, the close fit of some of the models in the study cannot be verified without replication.

A final limitation is the correlational nature of structural modeling. Although the path models suggest causal relationships between variables, the causality is not established. An example is in the pathway from instrumentality to social self-efficacy that is included in all three models. If the direction of the path were reversed, it would produce an equivalent model, with the fit measures being exactly the same. Instead, path analysis tests the plausibility of path models. Therefore, the models cannot be proven to be better than the many other plausible models for the included variables given the data. Although the selected models are the most theoretically relevant and are statistically better than most available models, it is not possible to prove that they are better or worse than other statistically equivalent models.

5.6 Conclusion

The objectives of this study were to replicate a previously introduced path model for the relationship between social self-efficacy, instrumentality, expressiveness, and depressive symptomatology as well as to expand upon this model with the addition of self-esteem as a psychological adjustment variable. Also, the proposal and validation of a model with loneliness as the outcome variable was completed, and the role of self-monitoring in these relationships was explored. Although the results for self-monitoring failed to support the hypotheses in the study, the other hypotheses were supported. The original model was validated, a plausible model including self-esteem with depression as the outcome variable was proposed and validated, and a model for loneliness was
introduced. These models were clearly supported and were clearly superior to proposed models that were rejected.

In addition to providing quality path models to predict loneliness and depressive symptomatology, this study suggests a variety of possible new research directions. For example, a combination of variables to produce a more complex path model and the addition of new variables would be an important next step. Also, the development of an intervention to increase social self-efficacy would help to determine the true causal relationships among these variables. In addition, both counseling and community based interventions for social self-efficacy could be implemented in an effort to promote positive psychological adjustment. Because of these findings, both researchers and practitioners can move forward to achieve a better understanding of social self-efficacy, the personality variables of instrumentality and expressiveness, and the psychological adjustment variables of self-esteem, loneliness, and depression.
LIST OF REFERENCES


Bean, M. C. (2001). Psychological Inventory Generator (PIG, version 1.0) [Unpublished computer software].


of masculinity and femininity. *Sex Roles, 38*, 645-653.


APPENDIX A

SCALE OF PERCEIVED SOCIAL SELF-EFFICACY

Instructions: Please read each statement carefully. Then decide how much confidence you have that you could perform each of these activities successfully. Mark the appropriate number for your level of confidence.

<table>
<thead>
<tr>
<th>No Confidence at all</th>
<th>Little Confidence</th>
<th>Moderate Confidence</th>
<th>Much Confidence</th>
<th>Complete Confidence</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
</tbody>
</table>

1. Start a conversation with someone you don’t know very well.
2. Express your opinion to a group of people discussing a subject that is of interest to you.
3. Work on a school, work, community or other project with people you don’t know very well.
4. Help to make someone you’ve recently met feel comfortable with your group of friends.
5. Share with a group of people an interesting experience you once had.
6. Put yourself in a new and different social situation.
7. Volunteer to help organize an event.
8. Ask a group of people who are planning to engage in a social activity (e.g., go to a movie) if you can join them.
9. Get invited to a party that is being given by a prominent or popular individual.
10. Volunteer to help lead a group or organization.
11. Keep your side of the conversation.
12. Be involved in group activities.
13. Find someone to spend a weekend afternoon with.
14. Express your feelings to another person.
15. Find someone to go to lunch with.
16. Ask someone out on a date.
17. Go to a party or social function where you probably won’t know anyone.
18. Ask someone for help when you need it.
19. Make friends with a member of your peer group.
20. Join a lunch or dinner table where people are already sitting and talking.
21. Make friends in a group where everyone else knows each other.
22. Ask someone out after s/he was busy the first time you asked.
23. Get a date to a dance that your friends are going to.
24. Call someone you’ve met and would like to know better.
25. Ask a potential friend out for coffee.
APPENDIX B

BEM SEX ROLE INVENTORY

Instructions: A number of personality characteristics are listed below. Choose a response from 1 to 5 to indicate how true the characteristic is of you.

<table>
<thead>
<tr>
<th>Never True</th>
<th>Rarely True</th>
<th>Sometimes True</th>
<th>Often True</th>
<th>Always True</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
</tbody>
</table>

Instrumentality | Expressiveness
- Self-reliant | (Yielding)
- Defends own beliefs | Cheerful
- Independent | (Shy)
- (Athletic) | Affectionate
- Assertive | (Flatterable)
- (Strong personality) | Loyal
- Forceful | (Feminine)
- Analytical | Sympathetic
- Has leadership abilities | Sensitive to the needs of others
- Willing to take risks | Understanding
- Makes decisions easily | Compassionate
- Self-sufficient | Eager to soothe hurt feelings
- Dominant | (Soft-spoken)
- (Masculine) | Warm
- Willing to take a stand | Tender
- Aggressive | (Gullible)
- Acts as a leader | (Childlike)
- Individualistic | (Does not use harsh language)
- Competitive | (Loves children)
- Ambitious | Gentle

Note. Items in (parentheses) will not be scored.
APPENDIX C

UNCONDITIONAL SELF-REGARD SCALE

Instructions: The following questions deal with the attitudes of college students towards themselves and others. Read each statement carefully. Decide how strongly you agree or disagree with each statement. Use the following scale to indicate your responses.

<table>
<thead>
<tr>
<th>Strongly Disagree</th>
<th>Moderately Disagree</th>
<th>Aren’t sure or Neutral</th>
<th>Moderately Agree</th>
<th>Strongly Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
</tbody>
</table>

1. I feel good about myself as a person.
2. I make time for relaxation activities. (F)
3. I like who I am.
4. It is hard for me to remember the positive things people say about me. (R)
5. I am very critical of myself. (R)
6. I think I am a worthwhile person.
7. I argue a lot with my parents. (F)
8. I enjoy spending time with my friends. (F)
9. Even though I make mistakes, I still feel good about myself as a person.
10. I think of myself in negative terms (e.g., stupid, lazy) (R)
11. It is easy for me to list 5 things I like about myself.
12. I like to spend the holidays with my family (F).
13. I can never quite measure up to my own standards. (R)
15. I like to be involved with team sports. (F)
16. Even when I goof up, I basically like myself.
17. There are times when I doubt my worth as a person. (R)
18. I tend to look at what I do badly rather than what I do well. (R)
19. My sense of self-esteem is easily disturbed. (R)
20. When I look in the mirror I like who I see.

Note. (R) indicates a reverse-scored item. (F) indicates a filler item.
APPENDIX D

BECK DEPRESSION INVENTORY – SECOND EDITION

This copy of the Beck Depression Inventory has been removed due to a possible copyright violation.
APPENDIX D

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This copy of the Beck Depression Inventory has been removed due to a possible copyright violation.
APPENDIX E

SELF-MONITORING SCALE

Instructions: The following statements concern your personal reactions to a number of different situations. If a statement is TRUE or MOSTLY TRUE as applied to you, indicate T. If a statement is FALSE or NOT USUALLY TRUE as applied to you, indicate F.

1. I find it hard to imitate the behavior of other people. (R)
2. My behavior is usually an expression of my true inner feelings, attitudes, and beliefs. (R)
3. At parties and social gatherings, I do not attempt to do or say things that others will like. (R)
4. I can only argue for ideas which I already believe. (R)
5. I can make impromptu speeches even on topics about which I have almost no information.
6. I guess I put on a show to impress or entertain people.
7. When I am uncertain how to act in a social situation, I look to the behavior or others for cues.
8. I would probably make a good actor.
9. I rarely need the advice of my friends to choose movies, books, or music. (R)
10. I sometimes appear to others to be experiencing deeper emotions than I actually am.
11. I laugh more when I watch a comedy with others than when alone.
12. In a group of people I am rarely the center of attention. (R)
13. In different situations and with different people, I often act like very different persons.
14. I am not particularly good at making other people like me. (R)
15. Even if I am not enjoying myself, I often pretend to be having a good time.
16. I am not always the person I appear to be.
17. I would not change my opinions (or the way I do things) in order to please someone else or to win their favor. (R)
18. I have considered being an entertainer.
19. In order to get along and be liked, I tend to be what people expect me to be rather than anything else.
20. I have never been good at games like charades or improvisational acting. (R)
21. I have trouble changing my behavior to suit different people and different situations. (R)
22. At a party I let others keep the jokes and stories going. (R)
23. I feel a bit awkward in company and do not show up quite so well as I should. (R)
24. I can look anyone in the eye and tell a lie with a straight face (if for a right end).
25. I may deceive people by being friendly when I really dislike them.

Note. (R) indicates a reverse-scored item.
APPENDIX F

REVISED UCLA LONELINESS SCALE

Instructions: Indicate how often you feel the way described in each of the following statements. Use the following scale to indicate your responses.

<table>
<thead>
<tr>
<th>Never</th>
<th>Rarely</th>
<th>Sometimes</th>
<th>Often</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
</tbody>
</table>

1. I feel in tune with the people around me. (R)
2. I lack companionship.
3. There is no one I can turn to.
4. I do not feel alone. (R)
5. I feel part of a group of friends. (R)
6. I have a lot in common with the people around me. (R)
7. I am no longer close to anyone.
8. My interests and ideas are not shared by those around me.
9. I am an outgoing person. (R)
10. There are people I feel close to. (R)
11. I feel left out.
12. My social relationships are superficial.
13. No one really knows me well.
14. I feel isolated from others.
15. I can find companionship when I want it. (R)
16. There are people who really understand me. (R)
17. I am unhappy being so withdrawn.
18. People are around me but not with me.
19. There are people I can talk to. (R)
20. There are people I can turn to. (R)

Note. (R) indicates a reverse-scored item.
APPENDIX G

DEMOGRAPHIC QUESTIONNAIRE

Instructions: Please respond to the following questions.

1. Indicate your gender:
   ____ Female
   ____ Male

2. Indicate your ethnicity:
   ____ African/African American
   ____ Asian/Asian American/Pacific Islander
   ____ Caucasian/European American
   ____ Latino(a)/Hispanic
   ____ Native American/American Indian
   ____ Multiracial/Other; Specify: __________

3. Indicate your year in school:
   ____ Freshman
   ____ Sophomore
   ____ Junior
   ____ Senior
   ____ Fifth Year
   ____ Other; Specify: __________

4. Indicate your age: ______

5. Think of the people with whom you live when you are “home”. Who lives at your residence besides you? Do not list names, only list relation to you (e.g. father, mother, cousin, sister, etc.). If you live alone, simply write “alone”. __________

6. Indicate the number of members of this household, including yourself, from the previous response: ______

7. Yearly family income: (1) Your income if you are the sole source of financial support, (2) your and your partner or spouse, or (3) your family’s income if supported by your family of origin.
8. Parents’ marital status:

- Married, living together
- Married, living apart (due to work, etc.)
- Married, separated
- Divorced
- One parent is widowed
- Unmarried

9. Mother’s education. (answer question with mother, foster mother, or step-mother in mind, depending on who you have spent more time with in your lifetime).

Indicate the highest level completed:

- No schooling completed
- Some elementary school
- 8th grade
- High school graduate or GED
- Some college, no degree
- Associate’s or technical degree
- Bachelor’s degree (BA, BS, etc.)
- Master’s degree (MA, MS, MBA, etc.)
- Professional degree (MD, DDS, JD, etc.)
- Doctorate degree (PhD, EdD, etc.)

10. Mother’s occupation. (answer question with mother, foster mother, or step-mother in mind, depending on who you have spent more time with in your lifetime).

Indicate most recent job title: ________________

11. Father’s education. (answer question with father, foster father, or step-father in mind, depending on who you have spent more time with in your lifetime).

Indicate the highest level completed:

- No schooling completed
- Some elementary school
- 8th grade
- High school graduate or GED
- Some college, no degree
- Associate’s or technical degree
- Bachelor’s degree (BA, BS, etc.)
- Master’s degree (MA, MS, MBA, etc.)
- Professional degree (MD, DDS, JD, etc.)
- Doctorate degree (PhD, EdD, etc.)
12. Father’s occupation. (answer question with father, foster father, or step-father in mind, depending on who you have spent more time with in your lifetime).
Indicate most recent job title: ___________________
APPENDIX H

DEBRIEFING STATEMENT GIVEN TO RESEARCH PARTICIPANTS

Dear Students:

Thank you for participating in our study. We are interested in college students’ beliefs about their social abilities and personal qualities, as well as their current mood and mood-related behaviors. You have taken a few instruments designed to tell us about these aspects of your life. Please note that your current responses do not necessarily mean that you will continue to feel this way or behave this way.

What we hope to learn from this study is how certain beliefs about your personal attributes can contribute to your confidence in your social abilities, and how this makes you feel in your everyday life. We hope to use this information to improve personal counseling techniques as well as to design group counseling to help improve students’ social confidence levels and moods. Therefore, our findings will be used to help other students.

If in the course of this experiment you have developed concerns or uncertainties about your feelings or about yourself, or if you feel any type of distress related to your responses, you may wish to seek counseling. If you wish to do this, you might be able to find counseling in Townshend Hall at the Psychological Services Center (please call Dr. Pamela Highlen at 292-5308). In addition, The Ohio State University Counseling and Consultation Services offers counseling and is open eight hours a day for appointments, and, if needed, on an emergency basis. If you need these services please call 292-5766. If you have any other questions about this study or would like additional counseling referrals, please contact Dr. Nancy Betz at 292-4166 or betz.3@osu.edu.

Again, thank you for assisting us with this research. We hope that it will eventually be used to help others like yourself.