

The Relationship Between Alexithymia, Anxiety, Depression, and Sleep Problems


Kendra Lynn Reiser

University Undergraduate Research Fellow, 1994-95

Texas A & M University

Department of Psychology

APPROVED

Undergraduate Fellows Advisor 

Exec. Dir., Honors Program 

## Abstract

This study investigated the relationship between alexithymia, anxiety, depression, and sleep problems, as well as personality factors in a sample of 151 undergraduate psychology students, made up of 70 males and 81 females. Subjects were given questionnaires consisting of the Toronto Alexithymia Scale, the Beck Anxiety Inventory, the Beck Depression Inventory, the Big Five Personality Inventory, and some general questions about sleep habits. Alexithymia was significantly correlated with anxiety ( $r = 0.23432, p < 0.01$ ). Alexithymia also had a significant positive correlation with depression ( $r = 0.24853, p < 0.01$ ). Alexithymia had a significant relationship with the amount of sleep one gets per night; the few people who reported sleeping 10-12 hours per night scored higher on alexithymia. Alexithymia had a significant positive correlation with feeling that one sleeps too much ( $r = 0.21183, p < 0.01$ ) and a significant negative correlation with feeling that one sleeps too little ( $r = -0.16215, p < 0.05$ ). This sleep pattern is unique to alexithymia; significance was not found between anxiety, depression, or neuroticism and feeling that one sleeps too much. Alexithymia had a significant positive correlation with neuroticism ( $r = 0.25785, p < 0.001$ ) and significant negative correlations with extroversion ( $r = -0.27107, p < 0.001$ ) and openness to new experience ( $r = -0.32714, p < 0.001$ ).

## The Relationship Between Alexithymia, Anxiety, Depression, and Sleep Problems

Alexithymia, a term coined by Nemiah and Sifneos in 1973, is Greek for: lack of words for feelings. This personality construct has four main features: “(a) a difficulty in identifying and describing feelings, (b) a difficulty in distinguishing between feelings and bodily sensations, (c) restricted imaginative processes, and (d) a cognitive style that is concrete and reality-based” (Bagby, Taylor, & Atkinson, 1988, p. 107). This construct was hypothesized to explain deficiencies in symbolic and verbal expression as observed by Ruesch in 1948 and since then by other clinicians in psychosomatic patients (Acklin & Bernat, 1987; Bagby, Parker, & Taylor, 1991; Bagby, Taylor, & Atkinson, 1988; Taylor, Bagby, Ryan, Parker, Doody, & Keefe, 1988; Taylor, Parker, Bagby, & Acklin, 1992). In a study of psychiatric out-patients, alexithymic patients were found to have much greater prevalence of “...somatic symptoms and bodily concerns. In addition, the alexithymic patients had significantly higher levels of anxiety, depression, and general psychological turmoil” (Taylor, Parker, Bagby, & Acklin, 1992, p. 417).

A study of freshman medical students found significant correlations between anxiety and depression and the alexithymia factors of identifying and communicating feelings. It was proposed by Hendryx, Haviland, and Shaw that alexithymia may be state-dependent, and scores may be higher in times of stress, such as final examinations. (Hendryx, Haviland, & Shaw, 1991).

Drawing from McDougall’s work, Acklin and Bernat concluded that sufferers of psychosomatic disorders fail “...to develop the ability to experience and express feelings or to achieve the capacity for cognitive imagery (i. e., fantasy) as a means of effective coping

and adaptation” (Acklin & Bernat, 1987, p. 464). It is quite likely that these deficits experienced by alexithymics may increase vulnerability in the effectiveness of methods for coping with stress (Acklin & Bernat, 1987). The inability to properly deal with stress may in turn increase the level of anxiety that is experienced by alexithymics.

In a 1991 study utilizing the Beck Depression Inventory and the Toronto Alexithymia scale, Lester found alexithymia scores of college students to be significantly correlated with scores on depression inventories. Lester also found significant correlations between alexithymia and current suicidal ideation, history of suicidal ideation, and suicidal attempts. However, Lester did not find a significant correlation between alexithymia and history of suicidal threats (Lester, 1991). Controlling for depression “by means of partial correlation coefficients [Lester] eliminated the significant associations with suicidal preoccupation” (Lester, 1991, p. 1058).

High correlations have been found between anxiety and depression. In a 1984 study of cancer patients, a strong correlation was found “between scores on the depression and anxiety subscales of the Mental Health Index” (Cassileth, Lusk, Hutter, Strouse, & Brown, 1984, p. 588), and a high correlation was also found “between scores on the Beck Depression Inventory and the Spielberger State Anxiety Scale” (Cassileth, Lusk, Hutter, Strouse, & Brown, 1984, p. 588). Cassileth did not observe a significant difference in correlations between anxiety and depression by age or sex (Cassileth, Lusk, Hutter, Strouse, & Brown, 1984). In a 1984 study of rural women, Hertsgaard and Light



found a significant correlation between scores on the anxiety and depression subscales of the Multiple Affect Adjective Check List (Hertsgaard & Light, 1984).

The co-existence of anxiety and depression has led some researchers to believe “that a broader, more global classification, such as ‘vulnerability,’ ‘agitation,’ or ‘depression-anxiety’ more meaningfully and appropriately describes these symptoms in patients with malignant disease” (Cassileth, Lusk, Hutter, Strouse, & Brown, 1984, p. 589). Watson and Clark have proposed that anxiety and depression are part of a global construct known as negative affectivity. In a study of children, it was found that high degrees of anxiety often coincided with high degrees of depression (Ollendick & Yule, 1990). Anxiety and depression are both high on negative affectivity. The symptoms of anxiety and depression overlap to a certain degree. It has been suggested in Izard’s differential emotions theory that anxiety and depression are complex emotions made up of combinations of discrete emotions; some of the same emotions are present, but to different degrees. “In anxiety the predominant emotion is fear, whereas in depression it is sadness” (Brady & Kendall, 1992, p. 244). In a 1988 study, it was observed that among children who were diagnosed with anxiety disorder, those who also had major depression had more severe degrees of anxiety (Strauss, Last, Hersen, & Kazdin, 1988). In a 1984 study of adults, a high correlation was found between anxiety and depression for both men and women; for each gender, there was a significant correlation between anxiety and depression (Correll, 1984).

Sleep problems often accompany anxiety and depression. Poor sleep has been correlated with worry and neuroticism (Coyle & Watts, 1991). In some cases, depression is accompanied by early-morning awakening and difficulty returning to sleep, and in other cases, depression is accompanied by excessive sleep. Along with each of these patterns of sleep, difficulty falling asleep and frequent awakenings are common occurrences. It has been speculated that people suffering from depression are more sensitive to their sleep environment than other people are (Hoskisson, 1976; Luce & Segal, 1969; Orr, Altshuler, & Stahl, 1982; Schwartz & Aaron, 1979; Whitlock, 1975; ). In a sleep center study, “67% of patients who presented to a major sleep disorders center reported an episode of depression within the previous 5 years, and 26% described themselves as depressed at presentation” (Mosko, Zetin, Glen, Garber, DeAntonio, Sassin, McAnich, & Warren, 1989).

Some researchers have speculated “that there is a personality type that characterizes excessive sleepers. Traits suggested in this group are passivity, the tendency to worry, and withdrawal from aggressive feelings” (Orr, Altshuler, & Stahl, 1982, p. 143). “A complaint of daytime sleepiness, fatigue, and/or lethargy is not uncommonly associated with depression. The disturbance is characterized by increased daytime sleepiness and napping as well as prolonged sleep at night”(Orr, Altshuler, & Stahl, 1982, p. 144).

Anxiety is frequently accompanied by insomnia. Worrying causes accelerated heart rate “and other autonomic responses sharply antagonistic to sleep” (Schwartz & Aaron, 1979). The most common form of insomnia, “Initardia is the inability to fall

asleep- the inability to *initiate* sleep promptly...it often strikes early in life, finding victims in their thirties, twenties, and even younger” (Schwartz & Aaron, 1979, p. 26). This type of insomnia is thought to be caused by overexcitement of the sympathetic nervous symptom, which inhibits the parasympathetic nervous system and prevents sleep (Schwartz & Aaron, 1979).

Some researchers have tested the association between sleep problems and negative emotions. Some researchers have taken a questionnaire approach, while others have temporarily altered sleep habits. Morrison, McGee, and Stanton (1992) questioned teenagers about their sleep problems and reported the most frequent problem to be the need for more sleep which occurred in approximately one-fourth of the sample. A significant correlation was found between sleep problems and anxiety and between sleep problems and depression, indicating “that those with no sleep problems were less anxious and had lower levels of depression than those who needed more sleep, suffered from insomnia, and had multiple sleep problems” (Morrison, McGee, & Stanton, 1992, p. 96). A study of subjects with no history of psychiatric problems found that sleep deprivation resulted in a statistically significant increase in total mood disturbance. Anger and depression increased more among 20-year-olds than 80-year-olds (Brendel, Reynolds, Jennings, Hoch, Monk, Berman, Hall, Buysse, & Kupfer, 1990).

### HYPOTHESES

The main hypothesis was that there would be a significant relationship between alexithymia and sleep problems. This study also attempted to replicate earlier findings that alexithymia is related to anxiety and depression. An attempt was also made to replicate

findings from other studies showing that sleep problems are related to anxiety and depression. It was further proposed that there would be an underlying personality trait or traits common to alexithymia, anxiety, depression, and sleep problems. In particular, it was hypothesized that neuroticism would be related to each construct.

## METHODS

### *Subjects*

Subjects were volunteer undergraduate students from the introductory psychology subject pool at Texas A & M University. Participation was completely anonymous. Subjects were told that the study would ask questions about sleep patterns and negative emotions, such as depression and anxiety. Informed consent was obtained from all subjects, and each subject received a debriefing form which explained the concept of alexithymia. There were 152 participants. The scores of 151 subjects were used in the analysis; the one other subject did not follow the instructions. The answer sheet could not be scored; thus, that subject's results were not used in the analysis. Of the 151 subjects, 70 subjects (46.36%) were male and 81 subjects (53.64%) were female. 139 subjects (92.05%) were between the ages of 18 and 21; 6 subjects (3.97%) were between the ages of 22 and 25; 5 subjects (3.31%) were under 18 years of age; 1 subject (0.66%) was over 30 years old.

### *Procedure*

The subjects completed questionnaires consisting of the TAS (Toronto Alexithymia Scale), the BAI (Beck Anxiety Inventory), the BDI (Beck Depression Inventory), the Big Five Personality Inventory, and some general questions about sleep

problems. The TAS is believed to be the most reliable and valid test of alexithymia. The Rorschach inkblot test has been used in some studies, but its interrater reliability is debatable. The MMPI Alexithymia Scale, although the most widely used alexithymia measure, has been shown to be lacking in validity and reliability (Bagby, Parker, & Taylor, *Journal of Clinical Psychology*, 1991; Bagby, Parker, & Taylor, *Journal of Personality Assessment*, 1991; Bagby, Taylor, & Atkinson, 1988; Hendryx, Haviland, Gibbons, & Clark, 1992; Hendryx, Haviland, & Shaw, 1991; Kauhanen, Julkunen, & Salonen, 1992; Taylor, Bagby, Ryan, Parker, Doody, & Keefe, 1988). The Toronto Alexithymia Scale, the Beck Anxiety Inventory, and the Beck Depression Inventory all use Likert scales. The Big Five Personality Inventory is a list of 100 adjectives; the subjects mark whether or not the adjective describes them well. The subjects were tested in groups of 8 to 21 subjects. Subjects were also asked a number of questions about sleep. The questions asked are listed below.

1. How much sleep do you get on an average night?  
A. less than 3 hrs B. 4 to 6 hrs C. 7 to 9 hrs D. 10 to 12 hrs E. over 12 hrs
2. Are you satisfied with the amount of sleep you usually get? A. Yes B. No
3. Do you think that you sleep too much? A. Yes B. No
4. Do you think that you sleep too little? A. Yes B. No
5. Do you wake up in the middle of the night? A. Yes B. No
6. Do you find it difficult to go back to sleep? A. Yes B. No
7. Do you have nightmares? A. Yes B. No
8. Have you experienced sleep problems most of your life? A. Yes B. No

9. How frequently do you have sleep problems?  
A. never      B. once or twice a week      C. three or four times a week  
D. almost every night      E. every night
10. Which sleep problems bother you most often?  
A. insomnia (being unable to fall asleep)  
B. sleeping too much (most of the day or longer)  
C. waking up in the middle of the night and being unable to go back to sleep  
D. nightmares  
E. other  
F. none (never have sleep problems)
11. Did you have sleep problems before you came to college?      A. Yes      B. No
12. Did your sleep problems start after you came to college?  
A. Yes      B. I already had sleep problems      C. I never have sleep problems
13. Did your sleep problems start in the past month?  
A. Yes      B. I already had sleep problems      C. I never have sleep problems

## RESULTS

### *Alexithymia*

Alexithymia was significantly correlated with anxiety ( $r = 0.23432, p < 0.01$ ). Alexithymia also had a significant positive correlation with depression ( $r = 0.24853, p < 0.01$ ). Alexithymia showed a significant negative correlation with extroversion ( $r = -0.27107, p < 0.001$ ), a significant positive correlation with neuroticism ( $r = 0.27585, p < 0.001$ ), and a significant negative correlation with openness to new experience ( $r = -0.32714, p < 0.001$ ). Thus, persons high in alexithymia tend to show high levels of depression and anxiety, to be low in extroversion and openness to new experience, and, as expected, high in neuroticism.

*Alexithymia and individual sleep items*

Alexithymia was related to the amount of sleep one gets on an average night, the small numbers of persons who sleep 10-12 hours per night score quite high on alexithymia (see Table 1).

**Table 1: Alexithymia and amount of sleep**

Mean alexithymia score	Amount of sleep on an average night	N (number of people with that amount of sleep)
68.167	10 to 12 hrs	6
62.225	7 to 9 hrs	71
57.703	4 to 6 hrs	74

**Note: Overall ANOVA =  $F(2, 148) = 6.02, p < 0.01$**

Consistent with Table 1, alexithymia had a significant positive correlation with feeling that one sleeps too much ( $r = 0.21183, p < 0.01$ ) and a significant negative correlation with self-reported feelings that one sleeps too little ( $r = -0.16215, p < 0.05$ ). The relationship of anxiety, depression, neuroticism, extroversion, conscientiousness, openness to new experience, and agreeableness to feelings of sleeping too much and too little; no significant correlation was found. Thus, only alexithymia is related to this self-reported pattern of too much sleep.

*Alexithymia and individual anxiety items*

Alexithymia was compared to individual anxiety items to see if there was any sort of pattern. There was a significant positive correlation between alexithymia and numbness or tingling ( $r = 0.19405, p < 0.05$ ). Alexithymia had a significant positive correlation with

feelings of choking ( $r = 0.18527, p < 0.05$ ). Alexithymia also had a significant positive correlation with trembling hands ( $r = 0.19424, p < 0.05$ ). Alexithymia was significantly positively correlated with fear of losing control ( $r = 0.16982, p < 0.05$ ). Alexithymia also had a significant positive correlation with fainting ( $r = 0.24459, p < 0.01$ ).

#### *Alexithymia and individual depression items*

Alexithymia was examined in relationship to individual depression items to see which aspects of depression were most closely linked with alexithymia. Alexithymia had a significant positive correlation with boredom/dissatisfaction ( $r = 0.23255, p < 0.01$ ).

There was a significant positive correlation between alexithymia and feelings of guilt ( $r = 0.21064, p < 0.01$ ). There was a significant positive correlation between alexithymia and disappointment in self / self-hate ( $r = 0.17491, p < 0.05$ ). Alexithymia was significantly positively correlated with indecision ( $r = 0.29033, p < 0.001$ ). Alexithymia was also significantly positively correlated with inability to work ( $r = 0.17200, p < 0.05$ ).

Alexithymia had a significant positive correlation with waking up early and being unable to go back to sleep ( $r = 0.18475, p < 0.05$ ). Alexithymia also had a significant positive correlation with being overly concerned with one's health / hypochondria ( $r = 0.28985, p < 0.001$ ).

#### *The Relationship of Anxiety to Depression, Sleep Problems, and Personality*

Anxiety showed a significant correlation with depression ( $r = 0.65114, p < 0.001$ ). Anxiety was significantly correlated with waking up in the middle of the night ( $r = 0.21119, p < 0.01$ ). Anxiety was also significantly correlated with difficulty in going back to sleep ( $r = 0.40205, p < 0.001$ ) and with nightmares ( $r = 0.31483, p < 0.001$ ). Anxiety



was also related to which type of sleep problems bother the subjects most often (see Table 2). Subjects scoring highest on anxiety reported insomnia, and those scoring lowest on anxiety reported no sleep problems.

**Table 2: Anxiety and type of sleep problem**

Mean anxiety score	Type of sleep problem occurring most often	N (number of people with that sleep problem)
35.435	insomnia (inability to fall asleep)	46
34.083	other sleep problems (unspecified)	12
33.333	nightmares	6
31.611	sleeping too much (most of the day)	18
29.857	waking up in the middle of the night and being unable to go back to sleep	7
28.419	no sleep problems	62

**Note: Overall ANOVA =  $F(5, 145) = 4.69, p < 0.001$**

Frequency of sleep problems was significantly correlated with anxiety ( $r = 0.38838, p < 0.001$ ). Anxiety is significantly correlated with having sleep problems prior to coming to college ( $r = 0.38001, p < 0.001$ ). Anxiety was related to when sleep problems started (see Tables 3 and 4), specifically persons scoring highest on anxiety already had sleep problems, and those scoring lowest on anxiety never have sleep problems. Having sleep problems most of one's life was significantly correlated with anxiety ( $r = 0.27719, p < 0.001$ ).

**Table 3: Anxiety and sleep problems starting after coming to college**

Mean anxiety score	Did sleep problems start after coming to college?	N (number of people with sleep problem starting then)
35.793	already had sleep problems	58
32.227	sleep problems started after coming to college	22
28.085	never have sleep problems	71

**Note: Overall ANOVA =  $F(2, 148) = 17.06, p < 0.0001$**

**Table 4: Anxiety and sleep problems starting in the past month**

Mean anxiety score	Did sleep problems start in the past month?	N (number of people with sleep problem starting then)
35.205	already had sleep problems	73
29.429	sleep problems started in the past month	7
28.211	never have sleep problems	71

**Note: Overall ANOVA =  $F(2, 148) = 15.88, p < 0.0001$**

Anxiety was significantly correlated with neuroticism ( $r = 0.36954, p < 0.001$ ).

#### *Depression as Related to Sleep Problems and Personality*

Depression was significantly correlated with waking up in the middle of the night ( $r = 0.22342, p < 0.01$ ). Depression was also significantly correlated with difficulty going back to sleep ( $r = 0.34493, p < 0.001$ ). Depression was significantly correlated with having sleeping problems most of one's life ( $r = 0.22877, p < 0.01$ ). Depression was

significantly correlated with frequency of sleep problems ( $r = 0.31457, p < 0.001$ ).

Depression was related to which type of sleep problems bother one most often (see Table 5). Those scoring highest on depression reported other unspecified sleep problems, nightmares, and insomnia. Those scoring lowest on depression reported no sleep problems.

**Table 5: Depression and type of sleep problem**

Mean depression score	Type of sleep problem occurring most often	N (number of people with that sleep problem)
13.000	other sleep problems (unspecified)	12
12.333	nightmares	6
12.239	insomnia (inability to fall asleep)	46
11.611	sleeping too much (most of the day)	18
8.286	waking up in the middle of the night and being unable to go back to sleep	7
7.306	no sleep problems	62

**Note: Overall ANOVA =  $F(5, 145) = 2.93, p < 0.02$**

Depression was significantly correlated with having sleep problems prior to coming to college ( $r = 0.18057, p < 0.05$ ). Depression was related to when sleep problems started (see Tables 6 and 7). Those scoring highest on depression already had sleep problems, and those scoring lowest never have sleep problems.

**Table 6: Depression and sleep problems starting after coming to college**

Mean depression score	Did sleep problems start after coming to college?	N (number of people with sleep problems starting then)
12.534	already had sleep problems	58
11.364	sleep problems started after coming to college	22
7.549	never have sleep problems	71

**Note: Overall ANOVA =  $F(2, 148) = 7.03, p < 0.01$**

**Table 7: Depression and sleep problems starting in the past month**

Mean depression score	Did sleep problems start in the past month?	N (number of people with sleep problems starting then)
12.493	already had sleep problems	73
8.571	sleep problems started in the past month	7
7.620	never have sleep problems	71

**Note: Overall Anova =  $F(2, 148) = 7.31, p < 0.001$**

Depression had a significant negative correlation with extroversion ( $r = -0.18416, p < 0.05$ ). Depression had a significant negative correlation with agreeableness ( $r = -0.21066, p < 0.01$ ). Depression was significantly negatively correlated with conscientiousness ( $r =$

-0.18813,  $p < 0.05$ ). Depression was significantly correlated with neuroticism ( $r = 0.36389$ ,  $p < 0.001$ ).

### *Sleep Problems and Personality Factors*

Agreeableness was also significantly negatively correlated with waking up in the middle of the night ( $r = -0.21146$ ,  $p < 0.01$ ). Neuroticism had significant positive correlations with waking up in the middle of the night ( $r = 0.21022$ ,  $p < 0.01$ ) and with nightmares ( $r = 0.27938$ ,  $p < 0.001$ ). Neuroticism had a significant positive correlation with frequency of sleep problems ( $r = 0.18740$ ,  $p < 0.05$ ). Neuroticism was related to which type of sleep problem bothers one most often (see Table 8). Those scoring highest on neuroticism reported waking up in the middle of the night and being unable to go back to sleep, nightmares, and insomnia. Those scoring lowest on neuroticism reported no sleep problems.

**Table 8: Neuroticism and type of sleep problem**

Mean neuroticism score	Type of sleep problem occurring most often	N (number of people with that sleep problem)
61.143	waking up in the middle of the night and being unable to go back to sleep	7
59.500	nightmares	6
57.913	insomnia (inability to fall asleep)	46
56.667	other sleep problems (unspecified)	12
55.056	sleeping too much (most of the day)	18
52.403	no sleep problems	62

**Note: Overall Anova =  $F(5, 145) = 2.98, p < 0.02$**

Neuroticism was related to when sleep problems started (see Tables 9 and 10). Those scoring highest on neuroticism already had sleep problems. Those scoring lowest on neuroticism never have sleep problems. Neuroticism had a significant positive correlation with having sleep problems prior to college ( $r = 0.28088, p < 0.001$ ).

**Table 9: Neuroticism and sleep problems starting after coming to college**

Mean neuroticism score	Did sleep problems start after coming to college?	N (number of people with sleep problems starting then)
58.448	already had sleep problems	58
55.955	sleep problems started after coming to college	22
52.789	never have sleep problems	71

**Note: Overall ANOVA =  $F(2, 148) = 6.44, p < 0.01$**

**Table 10: Neuroticism and sleep problems starting in the past month**

Mean neuroticism score	Did sleep problems start in the past month?	N (number of people with sleep problems starting then)
57.986	already had sleep problems	73
53.429	sleep problems started in the past month	7
52.986	never have sleep problems	71

**Note: Overall Anova =  $F(2, 148) = 5.76, p < 0.01$**

### *Gender*

Gender was significantly correlated with alexithymia ( $r = 0.19038, p < 0.05$ ), females scoring higher than males. Gender was also significantly correlated with anxiety ( $r = 0.27414$ ), females again scoring higher than males. Gender was significantly correlated

with nightmares ( $r = 0.26289, p < 0.01$ ), females scoring higher. Gender had a significant correlation with neuroticism ( $r = 0.20954, p < 0.01$ ); females scored higher on neuroticism than males did. A significant correlation was not found between gender and depression.

#### *Mean Scores and Standard Deviations*

The mean scores and their standard deviations were calculated for the main variables. Mean scores for alexithymia, anxiety, and depression are listed in Table 11. Mean scores are also listed for the Big Five personality factors: extroversion, agreeableness, conscientiousness, neuroticism, and openness to new experience. Minimum and maximum scores for these variables are also listed in Table 11.

**Table 11: Means and Standard Deviations**

Variable	Mean	Standard Deviation	Minimum	Maximum
Alexithymia	60.25	10.02	36	91
Anxiety	31.65	8.24	21	60
Depression	10.02	8.04	0	42
Extroversion	73.06	11.22	44	100
Agreeableness	83.53	10.51	49	100
Neuroticism	55.42	9.26	24	79
Conscientiousness	77.42	9.58	52	99
Openness to New Experience	81.94	9.54	55	100

**Note: N = 151**



## DISCUSSION

*Sleep Problems and Alexithymia*

Sleep problems were significantly correlated with alexithymia as was predicted in the main hypothesis. Alexithymia had a significant positive correlation with feeling that one sleeps too much and a significant negative correlation with feeling that one sleeps too little; people who scored high on alexithymia reported that they slept too much and did not sleep too little. The amount of sleep that alexithymics get on an average night was also significant. The few people who reported sleeping 10-12 hours per night scored higher on alexithymia than other persons did.

*Sleep Problems and Neuroticism, Depression, and Anxiety*

Neuroticism, depression, and anxiety were also correlated with sleep problems, but in a different manner than alexithymia. Anxiety, depression, and neuroticism were significantly positively correlated with frequency of sleep problems, having sleep problems prior to college, and waking up in the middle of the night. Anxiety and depression were significantly positively correlated with having sleep problems most of one's life, and difficulty in going back to sleep. Anxiety and neuroticism were significantly positively correlated with nightmares. Anxiety, depression, and neuroticism were related to which type of sleep problem bothers one most often. The most commonly reported sleep problems for people scoring high on depression were other unspecified sleep problems, nightmares, and insomnia. The most commonly reported sleep problems for people scoring high on anxiety was insomnia. The most commonly reported sleep problems for people scoring high on neuroticism were waking up in the middle of the night and being

unable to go back to sleep, nightmares, and insomnia. Those people who scored lowest on anxiety, depression, and neuroticism reported no sleep problems. Anxiety, depression, and neuroticism were related to when sleep problems started. Persons scoring highest on anxiety, depression, and neuroticism already had sleep problems, and persons scoring lowest on anxiety, depression, and neuroticism never have sleep problems.

#### *Comparison of Sleep Problems by Psychological Disorder*

The major find of the study is that alexithymia was related to a different sleep problem than anxiety, depression, and neuroticism were. The sleep problems associated with alexithymia were not surprising. Alexithymia had a significant correlation with sleeping too much; people who scored high on alexithymia reported that they slept too much. The small number of people who sleep 10-12 hours per night scored high on alexithymia. Alexithymics have been noted for reporting bodily complaints in place of emotions. Sleeping too much is sometimes listed in regards to bodily sensations. Sleeping for long periods of time is something that is often related to health. If one feels unwell, one is likely to want to remain in bed most of the day. The somatic complaints associated with alexithymia would likely cause alexithymics to believe they were physically ill, in which case it would not be surprising for them to want to remain in bed for a long period of time. The different manner in which sleep problems occur with alexithymia as compared to the manner in which they occur with anxiety, depression, and neuroticism is a clear signal that alexithymia is a distinct disorder and is not merely a variant of anxiety, depression, or neuroticism.

*Alexithymia and Anxiety*

As hypothesized, alexithymia was found to be significantly correlated with anxiety. In order to examine further the relationship between alexithymia and anxiety, the individual anxiety items were looked at to determine whether or not there was a pattern present. The pattern for anxiety was interesting in that all but one of the individual anxiety items that were significantly correlated with alexithymia were physical symptoms. High scores on alexithymia were related to numbness or tingling, feelings of choking, trembling hands, fear of losing control, and fainting. Fear of losing control is slightly surprising in that it is not a physical symptom, but it is not surprising that alexithymia is correlated with so many physical symptoms since it involves being unable to distinguish between physical sensations and emotions.

*Alexithymia and Depression*

Alexithymia was also significantly correlated with depression, as expected. Individual depression items were also looked at in order to see if there were some prevalent pattern. The pattern for depressive symptoms was less clear than that for anxiety symptoms. Some of the depressive symptoms correlated with alexithymia were physical, such as being overly concerned with one's health, while other symptoms, such as feelings of guilt and disappointment in oneself or self-hate, are more psychological. The physical symptoms are to be expected with alexithymia, but the psychological factors are unexpected.

*Alexithymia and personality traits*

In order to place alexithymia in the context of a broad system of personality traits, it was compared to the Big Five personality factors: agreeableness, extroversion, neuroticism, conscientiousness, and openness to new experience. High alexithymia scores were associated with a high degree of neuroticism. Alexithymia had significant negative correlations with extroversion and openness to new experience. That is to say, persons who scored high on alexithymia were lower in extroversion and were less open to new experience compared to other persons. No previous work has been done attempting to relate alexithymia to personality traits. The relationship of alexithymia to these factors of personality may lead to further understanding and prediction of alexithymia.

*Replications*

A minor consideration was attempting to replicate earlier findings. The findings relating alexithymia to anxiety and depression were replicated. The hypotheses that the relationships between alexithymia and anxiety, and between alexithymia and depression would be replicated were supported. Earlier findings which correlated sleep problems with anxiety and depression were also replicated, supporting those hypotheses.

*Comparison of Personality Traits by Psychological Disorder*

A second minor consideration was the relationship of anxiety and depression to personality. Anxiety was significantly correlated with neuroticism; high degrees of anxiety were accompanied by high degrees of neuroticism. Depression was associated with high degrees of neuroticism, and low degrees of extroversion, agreeableness, and conscientiousness. The degree to which the personality traits related to depression and

anxiety were similar to those present with alexithymia was examined. Neuroticism was significantly related to all three disorders. High scores on depression, anxiety, and alexithymia each indicated high scores on neuroticism. Alexithymia and depression were each negatively related to extroversion. A high score on either alexithymia or depression was accompanied by a low extroversion score. Depression was uniquely negatively related to agreeableness and conscientiousness. Alexithymia was uniquely negatively related to openness to new experience.

### *Gender*

Gender was significantly related to alexithymia, anxiety, and neuroticism. Females scored higher on alexithymia, anxiety, and neuroticism than males did. Anxiety and neuroticism are thought to occur more in women than in men, so it is not surprising that they are related. However, it was not expected that alexithymia would occur more among females than males. Males are typically thought to talk about their emotions less than women. Alexithymia implies not simply a lack of conversation about emotions, but rather an inability to identify, even to oneself, an emotion that is being experienced. This may explain why males did not score lower than females.

### *Possible sources of error*

The subject group was made up entirely of undergraduate psychology students. This may not be representative of the general population. As the subjects were filling out self-report measures, it is possible that they may have exaggerated or lied. The anonymity hopefully served to lessen social desirability error. It is possible that the subjects may not exactly remember their sleep habits.

*Conclusion and Implications*

In conclusion, the hypotheses were supported. Alexithymia was related to a sleep problem, specifically to sleeping too much. As expected, alexithymia was related to anxiety and depression. Anxiety and depression were related to sleep problems. Earlier studies were replicated. The pattern of sleep problems related to alexithymia was unique, indicating that alexithymia is a specific disorder and not simply a variant of another disorder. An underlying personality trait common to alexithymia, anxiety, depression, and sleep problems was found, supporting that hypotheses. Further study could possibly learn more by monitoring subjects at a sleep lab or by having subjects complete sleep diaries for an extended length of time. The link between alexithymia and sleep problems suggests that if sleep habits were altered, alexithymia could possibly be lessened.

## REFERENCES

- Acklin, M. W. & Bernat, E. (1987). Depression, alexithymia, and pain prone disorder: a Rorschach study. *Journal of Personality Assessment*, *51*, 462-479.
- Bagby, R. M., Parker, J. D. A., & Taylor, G. J. (1991). Dimensional analysis of the MMPI Alexithymia Scale. *Journal of Clinical Psychology*, *47*, 221-226.
- Bagby, R. M., Parker, J. D. A., & Taylor, G. J. (1991). Reassessing the validity and reliability of the MMPI Alexithymia Scale. *Journal of Personality Assessment*, *56*, 238-253.
- Brady, E. U. & Kendall, P. C. (1992). Comorbidity of anxiety and depression in children and adolescents. *Psychological Bulletin*, *111*, 244-255.
- Brendel, D. H., Reynolds, C. F., III, Jennings, J. R., Hoch, C. C., Monk, T. H., Berman, S. R., Hall, F. T., Buysse, D. J., & Kupfer, D. J. (1990). Sleep stage physiology, mood, and vigilance responses to total sleep deprivation in healthy 80-year-olds and 20-year-olds. *Psychophysiology*, *27*, 677-685.
- Cassileth, B. R., Lusk, E. J., Hutter, R., Strouse, T. B., & Brown, L. L. (1984). Concordance of depression and anxiety in patients with cancer. *Psychological Reports*, *54*, 588-590.
- Correll, R. E. (1984). Relationship of anxiety and depression to age and sex in an acute psychiatric population. *Psychological Reports*, *55*, 979-986.
- Coyle, K. & Watts, F. N. (1991). The factorial structure of sleep dissatisfaction. *Behaviour Research and Therapy*, *29*, 513-520.

- Hendryx, M. S., Haviland, M. G., Gibbons, R. D., & Clark, D. C. (1992). An application of item response theory to alexithymia assessment among abstinent alcoholics. *Journal of Personality Assessment*, *58*, 506-515.
- Hendryx, M. S., Haviland, M. G., & Shaw, D. G. (1991). Dimensions of alexithymia and their relationships to anxiety and depression. *Journal of Personality Assessment*, *56*, 227-237.
- Hertsgaard, D. & Light, H. (1984). Anxiety, depression, and hostility in rural women. *Psychological Reports*, *55*, 673-674.
- Hoskisson, J. B. (1976). *What is this thing called sleep?* London: Davis-Poynter.
- Lester, D. (1991). Alexithymia, depression, and suicidal preoccupation. *Perceptual and Motor Skills*, *72*, 1058.
- Luce, G. G. & Segal, J. (1969). *Insomnia*. Garden City, New York: Doubleday & Company, Inc.
- Morrison, D. N., McGee, R., & Stanton, W. R. (1992). Sleep problems in adolescence. *Journal of the American Academy of Child and Adolescent Psychiatry*, *31*, 94-99.
- Mosko, S., Zetin, M., Glen, S., Garber, D., DeAntonio, M., Sassin, J., McAnich, J., & Warren, S. (1989). Self-reported depressive symptomatology, mood ratings, and treatment outcomes in sleep disorders patients. *Journal of Clinical Psychology*, *45*, 51-60.
- Ollendick, T. H. & Yule, W. (1990). Depression in British and American children and its relation to anxiety and fear. *Journal of Consulting and Clinical Psychology*, *58*, 126-129.



- Orr, W. C., Altshuler, K. Z., & Stahl, M. L. (1982). *Managing sleep complaints*. Chicago: Year Book Medical Publishers, Inc.
- Schwartz, A. K. & Aaron, N. S. (1979). *Somniquest*. New York: Harmony Books.
- Strauss, C. C., Last, C. G., Hersen, M., & Kazdin, A. E. (1988). Association between anxiety and depression in children and adolescents with anxiety disorders. *Journal of Abnormal Child Psychology*, 16, 57-68.
- Whitlock, F. A. (1975). Sleep disturbances and psychiatric disorders. In Clift, A. D. (Ed.), *Sleep disturbance and hypnotic drug dependence*. New York: Excerpta Medica.