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**SCHIZOTYPY AND THE ROLE OF COPING BEHAVIORS IN THE
EXPERIENCE OF POSITIVE AND NEGATIVE AFFECT**

by
Jessica L. Hayes

A Thesis

Submitted to the
Department of Psychology
College of Liberal Arts and Sciences
In partial fulfillment of the requirement
For the degree of
Master of Arts in Clinical Mental Health Counseling
at
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May, 2012

Thesis Chair: Thomas Dinzeo, Ph.D.

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Dedication

*I would like to dedicate this manuscript to my family: Christopher, Linda, David,
and Marguerite Hayes.*

Acknowledgements

I would like to express my gratitude to Dr. Thomas Dinzeo and Dr. Eve Sledjeski for their guidance and assistance throughout this research.

Abstract

Jessica L. Hayes

SCHIZOTYPY AND THE ROLE OF COPING BEHAVIORS IN THE EXPERIENCE OF POSITIVE AND NEGATIVE AFFECT

2011/12

Thomas Dinzeo, Ph.D.

Master of Arts in Clinical Mental Health Counseling

The purpose of the current study was to examine whether (a) schizotypy is positively related to negative affect and negatively related to positive affect, (b) whether individuals with high levels of schizotypy use more maladaptive coping behaviors than those low in schizotypy, (c) that maladaptive coping behaviors will mediate the relationship between schizotypy and negative affect, and (d) that adaptive coping behaviors will mediate the relationship between schizotypy and positive affect. A sample of 435 undergraduate participants completed self-report measures including The Brief Cope, The Schizotypal Personality Questionnaire, and The Positive and Negative Affect Schedule. Bivariate correlations resulted in levels of schizotypy to be positively associated to negative affect and negatively associated to positive affect, replicating previous research. An independent samples t-test found that individuals high in schizotypy used more maladaptive coping behaviors. Bootstrapping was used to examine the mediation models proposed. Maladaptive coping partially mediated the relationship between schizotypy and negative affect whereas adaptive coping did not mediate the relationship between schizotypy and positive affect. Implications for prevention programs designed for individuals with high levels of schizotypy are discussed.

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Chapter 1

Introduction

Schizophrenia is a mental disorder that affects approximately 1% of the population (American Psychiatric Association, 2000). This disorder is characterized by two symptom clusters, positive and negative, which are comprised of symptoms such as auditory and visual hallucinations, avolition, and anhedonia and are associated with impairment in vocational and social functioning. Due to the outcomes associated with this disorder such as shorter mortality (Fors, Isacson, Bingefors, & Widerlov, 2007), long term cognitive deficits (Rund, 1998), and a lower quality of life (Rocca, Castagna, Mongini, Montemagni, & Bogetto, 2010), studying the premorbid functioning of individuals with high risk characteristics is important.

The term “schizotypy” refers to a suspected liability or high risk characteristics for later developing schizophrenia with an estimated prevalence rate of 10% in the general population (Meehl, 1990). Characteristics of this phenomenon also consist of two main clusters of characteristics, positive and negative, similar to the positive and negative symptoms of schizophrenia, and reflect the most empirically supported structure of schizotypy in respect to construct validity (Vollema & van den Bosch, 1995). Positive schizotypy is characterized by unusual perceptual experiences and odd beliefs or appearance. Negative schizotypy is characterized by anhedonia, disorganization in thinking processes, and interpersonal deficits. These two dimensions reflect sub-threshold experiences of the two symptom clusters of schizophrenia.

Although individuals scoring high on measures of schizotypy have been found to later develop higher rates of both psychosis and mood related disorders (Chapman,

Chapman, Kwapil, Eckblad, & Zinser, 1994), all individuals with this liability who experience stress will not develop a schizophrenia-spectrum disorder. Individuals with high levels of schizotypy have been found to experience higher levels of stress (Pruessner, Lyer, Faridi, Jooper, and Malla, 2011) and are thought to be at a greater risk for transitioning into the disorder during times of acute stress. This view highlights the diathesis-stress model of schizophrenia whereby an individual has a diathesis (an individual's biological predisposition) to developing the disorder which is combined with environmental factors such as the experience of stress that lead to the development of schizophrenia. This theoretical model has been supported in the clinical research literature (Carter, Schulsinger, Parnas, Cannon, & Mednick, 2002; Walker, Mittal, & Tessner, 2008). Due to these differential outcomes in individuals at risk and the role that stress may play in these differences, unique coping strategies to deal with life stressors may be used by some and may protect from progressing into the disorder.

The role of stress in schizophrenia has received a large amount of attention. Studies have shown a link between higher levels of stress and stressful life events to symptom severity, symptom exacerbation, and relapse in schizophrenia (Corcoran et al, 2003). Furthermore, emotional reactivity moderates increases in psychotic symptoms following life events in individuals with schizophrenia (Docherty, St-Hilaire, Aakre, & Seghers, 2009) with others finding that high levels of arousability correspond to experiencing higher negative affect in this population (Dinzeo, Cohen, Nienow, & Docherty, 2008). These findings suggest that reactivity and affect play a large role in psychotic symptoms. This elevation in emotional reactivity to stress has also been found in individuals at risk for psychosis (Myin-Germeys & van Os, 2007). The use of effective

coping strategies may lessen the negative effects of stress, such as the experience of lower positive affect and negative affect, in some individuals (Yamasaki, Uchida, & Katsuma, 2010).

Further, nonspecific sources of increased risk within the diathesis-stress model have been studied less and include negative and positive affect as these factors increase stress reactivity (Fowles, 1992). Affect as defined for the purposes of this study includes two dimensions, both negative (feelings of anxiety, sadness, and guilt) and positive (feelings of interest, determination, and happiness). Research has consistently shown a pattern of high negative affectivity and low positive affectivity among patients with schizophrenia which has been replicated in those with high levels of schizotypy (Watson & Naragon-Gainey, 2010; Horan, Blanchard, Clark, & Green, 2008). Symptoms of anxiety and depression were positively associated with schizotypy in a sample of college students (Lewandowski et al, 2006). Considering that those at high risk have been found to have elevated levels of emotional reactivity to stress and experience higher levels of negative affect, the development of effective coping strategies may have a protective value for this population.

Coping has been defined as a process in which an individual utilizes resources (including cognitive and behavioral efforts) to reduce, prevent, or control stress that the individual experiences or the negative effects associated with the stressor (Marsella & Scheuer, 1993). This can be done by using numerous strategies including using humor, taking action to change the situation (active coping), thinking about strategies and steps to take to handle the stressor (planning), substance use, taking no action or giving up (behavioral disengagement), and trying to accept the stressor (acceptance) among others.

In past research, these strategies are combined into categories of problem-focused (e.g. planning, positive reframing, use of instrumental support) and emotion-focused coping (e.g. substance use, venting, self-distraction) and also adaptive (e.g. active coping) and maladaptive coping (e.g. denial) (Meyer, 2001; Carver, 1997).

Research has shown that certain types of coping behaviors are associated with better outcomes than others (Cohen, Hassamal, & Begum, 2011; Brenner, St-Hilaire, Liu, Laplante, & King, 2011). For example, a sample examining the general population found that different coping behaviors were associated with increases in positive emotions and others with increases in negative emotions (Folkman & Lazarus, 1988). In addition, one study found that individuals with schizophrenia used emotion-focused coping 5.5 times more than controls (Ritsner et al, 2006). Ritsner, et al. (2006) also found the use of emotion-focused coping was associated with more severe emotional distress and lower self esteem, self-efficacy, quality of life, and perceived social support in these individuals. Other research on individuals with schizophrenia and schizotypy has found that maladaptive coping strategies such as resigning and drug or alcohol use has similar associations (Lysaker, Tsai, Hammound, & Davis, 2009; Lee et al, 2011), whereas the use of adaptive coping strategies was associated with positive affect (Blanchard et al, 1999). Thus, the examination of coping behaviors, their relationship with affect, and subsequently the experience of stress should allow us to elaborate our current models of etiology and intervention.

In relation to schizotypy, few studies have examined the relationship of coping and affect in this high risk population. Differential uses of coping strategies (Schuldberg, Karwacki, & Burns, 1996) and higher levels of negative affectivity have been found in

individuals with positive and negative characteristics of schizotypy as compared to controls (Horan, Brown, & Blanchard, 2007). In addition, individuals prone to psychosis endorsed using non-adaptive coping and more negative social support than controls; however they did not differ on adaptive coping or positive social support (Dangelmaier, Docherty, & Akamatsu, 2006). Contrary to these findings, other research has found active coping to be used less by high risk individuals than controls (Pruessner, Lyer, Faridi, Jooper, & Malla, 2011). These findings do not fully clarify the relationship of schizotypy and coping or how they relate to positive and negative affect.

Limitations of previous studies on coping in samples of schizotypal individuals include the use of measures assessing separate dimensions of schizotypy, such as anhedonic or perceptual aberration, rather than using a continuous measure of schizotypy that combines the dimensions of the construct. In using cut-off scores, a large number of individuals are not considered in their degree of experiencing psychosis-spectrum characteristics, such as in high-low groups of schizotypy. Studies comparing these diverse measures of schizotypy appear to be lacking in the literature, although one study cited twenty different measures of schizotypy (Fonseca, et al., 2008). There is also a lack of research assessing the specific relationship among schizotypy, coping behaviors, and affect with none examining mediation models of these variables within this population.

The present study aims to examine the relationships between schizotypy, coping, and affect in the college population. Studying the college-aged population may be beneficial as findings have shown that there is a negative association between age and psychosis proneness (Verdoux & van Os, 2002; Chapman, Chapman, Kwapil, Eckblad, & Zinser, 1994), in that psychosis tends to decrease with age and be more prevalent among

younger individuals so the age period of the sample is in the risk period for the development of psychosis. Schizotypy and negative affectivity have been found to be positively related (Watson & Naragon-Gainey, 2010; Horan, Blanchard, Clark, & Green, 2008) as was the relationship between certain coping behaviors (emotion-focused coping) and negative affect in both clinical and non-clinical samples. It follows that the relationship between schizotypy and experiences of affect may be mediated by coping styles. The following a priori hypotheses will be examined: (1) in replicating previous findings regarding affect and schizotypy, there will be a positive relationship between schizotypy and negative affect and a negative relationship between schizotypy and positive affect, (2) also in replicating previous findings, individuals with high levels of schizotypy will use more maladaptive coping strategies than individuals with low levels of schizotypy but will not differ in their use of adaptive coping (3) adaptive coping behaviors will mediate the relationship between schizotypy and positive affect (see figure 1), (4) maladaptive coping behaviors will mediate the relationship between schizotypy and negative affect (see figure 2). By identifying different coping styles in individuals with a liability for schizophrenia-spectrum disorders, prevention programs may be developed to foster coping skills related to positive affect and possibly decreased levels of stress.

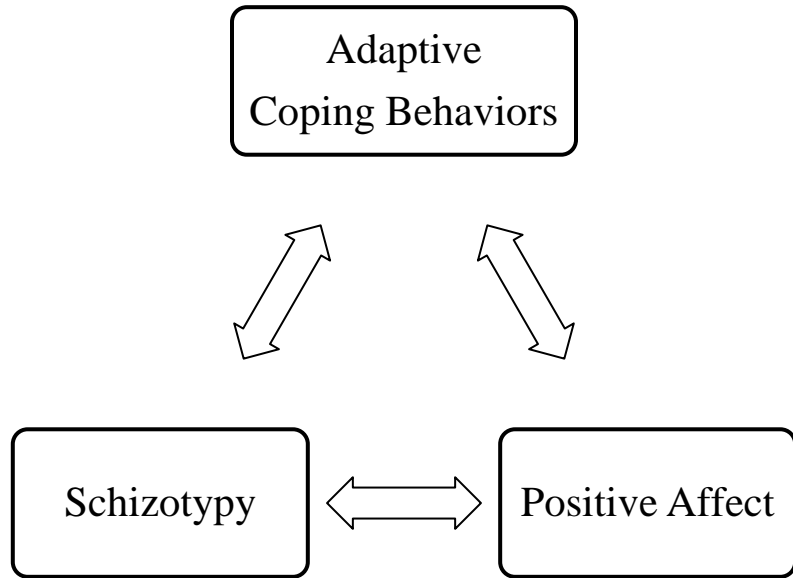


Figure 1: Mediation Model 1

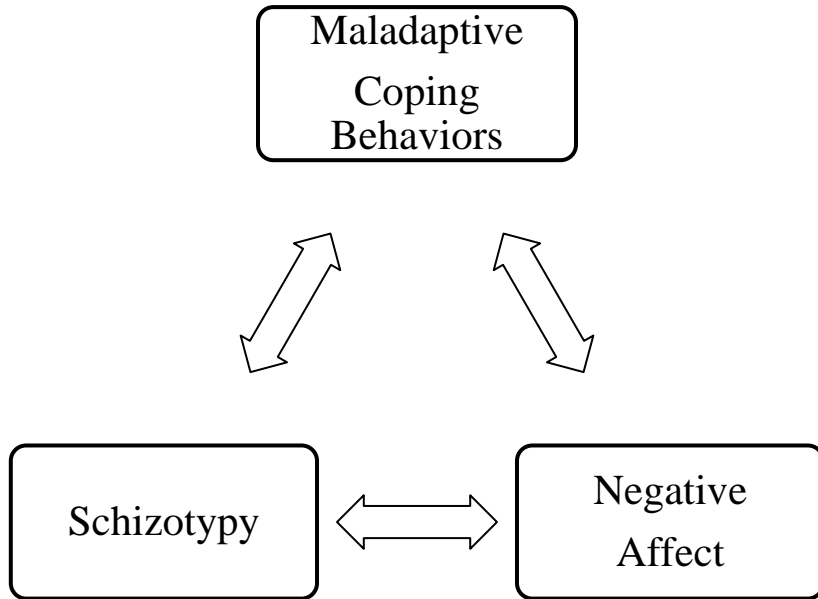


Figure 2: Mediation Model 2

Chapter 2

Method

Participants

The sample consisted of 435 undergraduate students at a North Eastern university. Inclusion criteria was that students be 18 years of age or older. The sample was 63.2% female (36.8% male), with a mean age of 20.9 (SD= 3.68, range of 18- 48). The sample was 81.4% Caucasian, 8.4% African American, 6.5% Hispanic, and 3.7% identified as other.

Measures

Coping

The Brief COPE (Carver, 1997) was used to measure coping behaviors. This measure is a 28 item scale, which is comprised of statements such as “I’ve been thinking hard about what steps to take.” The instructions directed participants to answer in reference to “ways you’ve been coping with the stress in your life since becoming a college student.” The statements were rated on a Likert-type scale from 1 (I haven’t been doing this at all) to 4 (I’ve been doing this a lot). Items were summed to yield total and subscale scores with higher scores indicating higher usage of a coping style or coping styles in general. This measure resulted in 14 sub-scales composed of 2 items each including: active coping, planning, positive reframing, acceptance, humor, religion, using emotional support, using instrumental support, self-distraction, denial, venting, substance use, behavioral disengagement, and self-blame. The scales were combined to form adaptive and maladaptive coping scales (Meyer, 2001). Adaptive coping includes the scales: active coping, planning, positive reframing, acceptance, humor, religion, and use of emotional and instrumental support. Maladaptive coping includes: self-distraction,

denial, venting, substance use, behavioral disengagement, and self-blame. The 14 scales have internal consistencies ranging from .50 (venting) to .90 (substance use) (Carver, 1997). Convergent and discriminant validity were found in respect to other measures of coping and personality factors (Carver, Scheier, & Weintraub, 1989).

Schizotypy

The Schizotypal Personality Questionnaire- Brief Revised Version (Raine & Benishay, 1995; Cohen et al., 2010) was used to measure the construct of schizotypy. This measure is comprised of 34 statements and questions which include, “Other people see me as slightly eccentric (odd).” The statements were rated on a Likert-type scale from 1 (Not at all like me) to 5 (Very much like me). The measure has three subscales which include: Interpersonal, Cognitive-Perceptual, and Disorganized. Items were summed to yield subscale scores and a total score, with higher scores indicating more schizotypal characteristics in each subscale and for a total score. The full SPQ subscales have internal consistencies between 0.80 and 0.90 (Cohen et al., 2010). Criterion validity was 0.40-0.60 in a sample of relatives of individuals with psychosis-spectrum disorders and controls (Comptom, Chien, & Bolleni, 2007). Raine (1991) also reported high convergent, divergent, and criterion validity for the original version of the questionnaire.

Positive and Negative Affect

The Positive and Negative Affect Scale (Tellegen, Watson, & Clark, 1999) was used to measure both positive and negative affect. This scale is comprised of two subscales (positive and negative affect) each composed of 10 items. Items consist of words such as “Scared” and “Alert” with instructions to “indicate to what extent you have felt this way during the past week.” These items were rated on a Likert-type scale from 1

(very slightly or not at all) to 5 (extremely). Items were added with total scores for each scale ranging from 10 to 50. Normative means from non-clinical population was 31.3 (SD= 7.7) for positive affect and 16.0 (SD= 5.9) for negative affect. The scales have internal consistencies of .89 and .85 for positive affect and negative affect, respectively (Crawford & Henry, 2004). Both convergent and divergent validity were found for the measure in a college sample (Watson, Clark, & Tellegen, 1988).

Procedures

Participants were recruited in two different ways. One hundred twenty-five participants were recruited through Essentials of Psychology courses from which students chose to volunteer as one option for class credit by participating in research. The sample was part of a larger study examining personality, health behaviors, and academic achievement. All participants were consented and advised that the study was voluntary and that they could withdraw at any time. Institutional review board approval was received prior to recruitment. These participants were administered a battery of questionnaires which included the Schizotypal Personality Questionnaire, The Brief COPE, and the Positive and Negative Schedule of Affect in a quiet environment and in a standardized format. The other three hundred ten undergraduate participants were recruited online and entered into a drawing for a \$40.00 gift certificate. These participants filled out the battery of questionnaires through an online program called Survey Monkey.

Power Analysis

Estimated sample size was determined using commercially available software (Power Calculator; G*Power 3.1.3: Erdfelder, Faul, & Buchner, 1996). Effect sizes

(Cohen's d) were calculated based on available data from Horan, Brown, and Blanchard (2007) and Lysaker, Tsai, Hammound, and Davis (2009). The effect sizes for these studies fell into the large range ($d = 0.82 - 1.67$).

According to power analyses, a minimum sample of 31 would be necessary to identify a significant relationship between coping behaviors and affect assuming a large effect size ($r = 0.35$), 2 predictors in the model, and using the 0.05 confidence level to ensure an 80% likelihood of identifying the relationship. Given the final sample size ($n=370$) and assuming a large effect size, the power for detecting a significant relationship would be 1.0, suggesting that the proposed study would be sufficiently powered.

Planned Statistical Analyses

Prior to conducting statistical analyses, the final scores on the Brief COPE subscales and the PANAS subscales will be checked for outliers using box plots, for normality using descriptive statistics, and for linear relationships with scatter plots. Bivariate correlations will be used to assess the relationship between schizotypy and affect. Bootstrapping will be used to test the proposed mediation models with schizotypy and adaptive and maladaptive coping behaviors as predictors and positive and negative affect as the criterion variable (Hayes, 2009). The indirect effects are estimated k times by re-sampling with replacement and confidence intervals are generated by sorting the k values of the indirect effects (ab) from smallest to largest. This produces a confidence interval which will be adjusted for bias and if zero is not included in this, one can conclude that the indirect effect is significant which indicates that the specified coping behaviors mediate the relationship between schizotypy and the specified type of affect.

Chapter 3

Results

Exploratory Analyses

Bivariate correlations were conducted to examine the relationship between study variables. Adaptive coping was positively related to positive ($r = 0.18, p < 0.001$), negative affect ($r = 0.15, p = 0.001$), and maladaptive coping ($r = 0.34, p < 0.001$). Maladaptive coping was positively related to negative affect ($r = 0.45, p < 0.001$) and overall schizotypy ($r = 0.52, p < 0.001$), and negatively related to positive affect ($r = -0.09, p = 0.05$). Positive affect was positively correlated to negative affect ($r = 0.12, p = 0.02$).

Independent samples t-tests were conducted to examine whether there were gender differences in levels of positive and negative affect. Females ($M = 30.19, SD = 8.56$) reported significantly higher levels of positive affect than males ($M = 27.26, SD = 7.77$), ($t(433) = -3.03, p = 0.003$). No significant differences were found between males and females in negative affect ($t(433) = -1.29, p = 0.20$). A One-way ANOVAs were also conducted to examine whether individuals of different ethnicities differed in the level of positive or negative affect reported. The groups differed significantly on the level of positive affect reported ($F(4, 430) = 4.27, p = 0.002$). Post-hoc analyses were conducted. African American individuals ($M = 32.54, SD = 9.60$) reported significantly more positive affect than Caucasian individuals ($M = 27.26, SD = 7.77, p < 0.001$) and Hispanic individuals ($M = 27.94, SD = 7.11, p = 0.02$). The groups did not differ significantly on negative affect ($F(4, 430) = 1.08, p = 0.37$).

Correlations

Bivariate correlations were used to examine the relationship between both negative and positive affect and levels of schizotypy. Our findings replicated previous research in that negative affect was positively related to levels of schizotypy ($r = 0.40, p < 0.001$) and conversely positive affect was negatively related to levels of schizotypy ($r = -0.12, p = 0.01$).

Independent Samples T-test

An independent samples t-test was used to examine whether individuals with high levels of schizotypy differed from individuals with low levels of schizotypy on maladaptive and adaptive coping. Individuals that endorsed high levels of schizotypy ($M = 30.14, SD = 6.69$) endorsed using more maladaptive coping behaviors than individuals that endorsed low levels of schizotypy ($M = 20.62, SD = 4.82; t(226) = 0.192, p < 0.001$). No significant differences were found between individuals endorsing high levels of schizotypy ($M = 50.59, SD = 9.20$) and low levels of schizotypy ($M = 50.67, SD = 7.81$) on their use of adaptive coping skills ($t(226) = 0.044, p = 0.97$).

Mediation of Positive and Negative Affect

Bootstrapping was used to test both mediation models. Table 1 displays the test results for positive affect, which are further illustrated in Figure 3. In this model, adaptive coping was not a significant mediator ($b = 0.005, 95\% \text{ CI} = [-0.003, 0.014]$). Sobel's test also found that adaptive coping was not significant ($p = 0.18$). Gender and ethnicity were controlled for in this model and both demonstrated significant partial effects on positive affect ($p = 0.02; p = 0.002$, respectively).

Table 1. Multiple Mediation Estimates for Positive Affect

Variable	<i>B</i>	<i>t</i>	<i>p</i>	
Schizotypy to Mediators				
Adaptive Coping	0.022	1.20	0.23	
Direct effects of mediator on positive affect				
Adaptive Coping	0.201	4.23	0.001	
Total effect of schizotypy on positive affect				
Schizotypy	-0.039	-2.10	0.03	
Remaining direct effect of schizotypy on positive affect				
Schizotypy	-0.043	-2.39	0.02	
Partial effect of control variables on positive affect				
Gender	-1.856	-2.37	0.02	
Ethnicity	2.930	3.11	0.002	
	<i>b</i>	<i>CI</i> _{lower}	<i>CI</i> _{upper}	<i>p</i>
Indirect effects of schizotypy on positive affect via mediator (bootstrap results)				
Total indirect effects	0.005	-0.003	0.013	0.05
Adaptive Coping	0.005	-0.003	0.013	0.05
	<i>b</i>	<i>Z</i>		<i>p</i>
Indirect effects of schizotypy on positive affect via mediator (Sobel 's test results)				
Total indirect effects	0.005	1.33		0.18
Adaptive Coping	0.005	1.33		0.18
<i>Notes.</i> Confidence intervals are bias corrected and accelerated; bootstrap resamples=1000; N= 434 for all tests.				

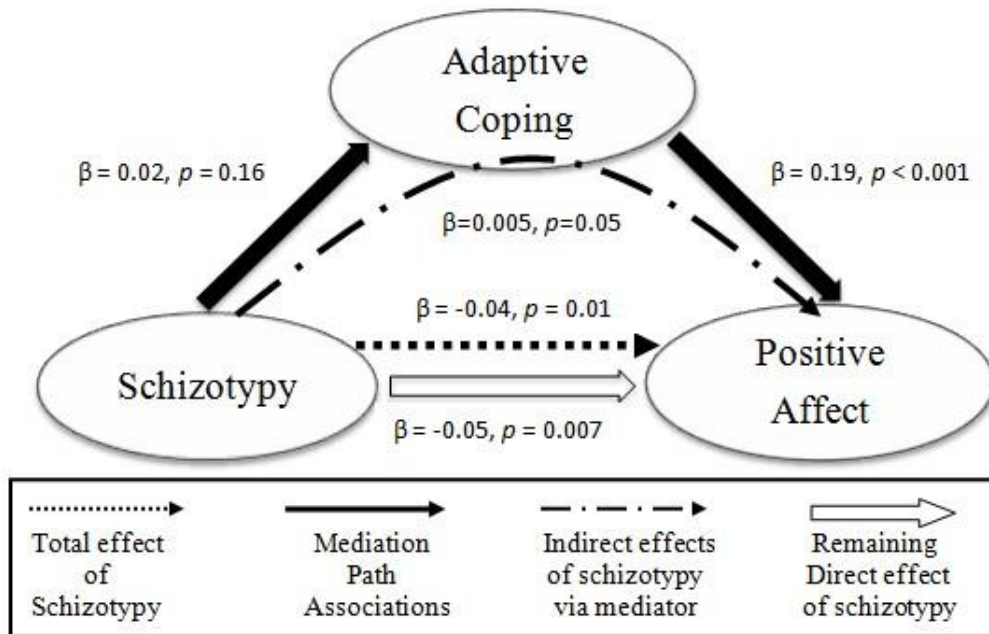


Figure 3. Bootstrap Analyses of Mediation Model 1

Table 2 displays the test results for negative affect, which are further illustrated in Figure 4. Maladaptive coping significantly mediated negative affect ($b = 0.05, 95\% \text{ CI} = [0.03, 0.07]$). The effect on negative affect attributed by schizotypy was reduced from 0.13 (Total effect of schizotypy) to 0.07 (Remaining Direct Effect) by the mediator variable (maladaptive coping). Gender was controlled for in this model and was not significant ($p = 0.40$). Sobel's test also found maladaptive coping to be significant ($p < 0.001$). Schizotypy remained significant in the model ($p < 0.001$) suggesting that maladaptive coping was a partial rather than a complete mediator according to Baron and Kenny's procedures.

Table 2. Multiple Mediation Estimates for Negative Affect

Variable	<i>b</i>	<i>t</i>	<i>p</i>	
Schizotypy to mediators				
Maladaptive Coping	0.155	12.71	<0.001	
Direct effects of mediator on negative affect				
Maladaptive Coping	0.349	6.59	<0.001	
Total effect of schizotypy on negative affect				
Schizotypy	0.129	9.12	<0.001	
Remaining direct effect of schizotypy on negative affect				
Schizotypy	0.074	4.71	<0.001	
Partial effect of gender on negative affect				
Gender	0.492	0.83	0.40	
	<i>B</i>	<i>CI_{lower}</i>	<i>CI_{upper}</i>	<i>p</i>
Indirect effects of schizotypy on negative affect via mediator (bootstrap results)				
Total indirect effects	0.054	0.03	0.07	0.05
Maladaptive Coping	0.054	0.03	0.07	0.05
	<i>B</i>	<i>Z</i>	<i>p</i>	
Indirect effects of schizotypy on negative affect via mediator (Sobel 's test results)				
Total indirect effects	0.055	5.87	<0.001	
Maladaptive Coping	0.055	5.87	<0.001	

Notes. Confidence intervals are bias corrected and accelerated; bootstrap resamples=1000; N= 434 for all tests.

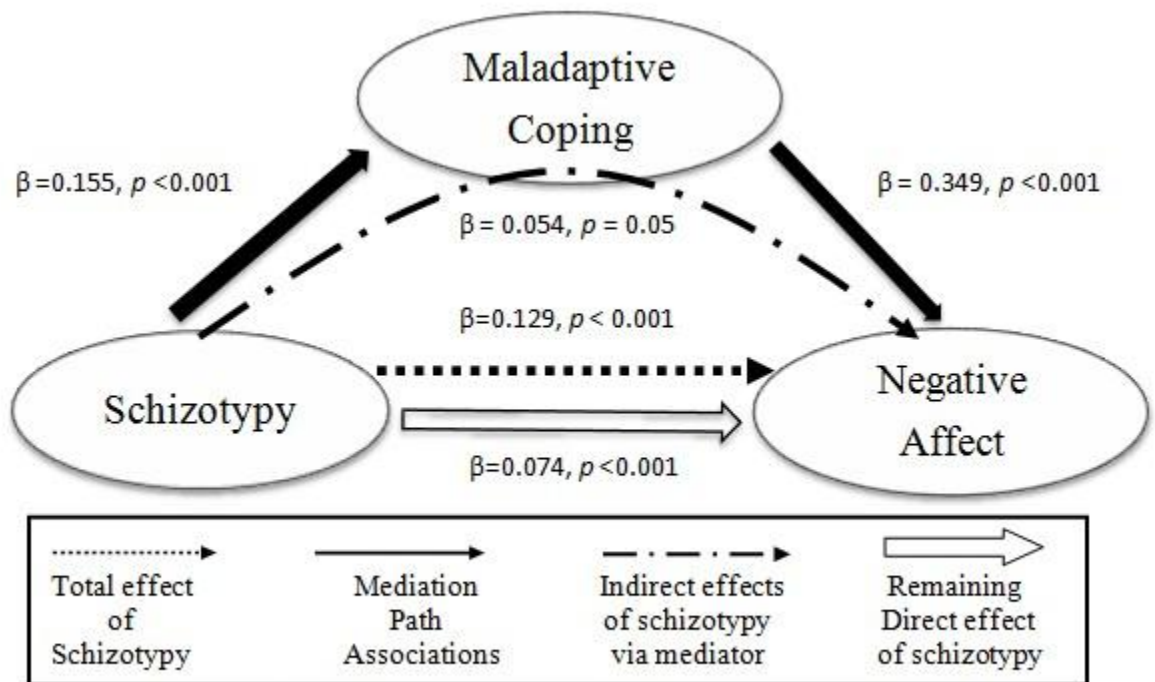


Figure 4. Bootstrap Analyses of Mediation Model 2

Post-hoc Analyses

Post-hoc analyses were conducted to further examine other possible mediation models for positive and negative affect. Bootstrapping was used in order to examine whether maladaptive coping behaviors mediated the relationship between schizotypy and positive affect rather than adaptive coping. Maladaptive coping was added to the original model, with adaptive coping as a mediator while controlling for gender and ethnicity. In this model, maladaptive coping was a significant mediator ($b = -0.030$, 95 % CI = [-0.054, -0.007]) with adaptive coping remaining insignificant ($b = 0.006$, 95 % CI = [-0.004, 0.018]). Adaptive coping was also examined in relation to negative affect and was not a significant mediator ($b = 0.003$, 95 % CI = [-0.001, 0.009]).

Chapter 4

Discussion

The current study aimed to replicate previous research (1) in finding that schizotypy was positively related to negative affect and negatively related to positive affect and (2) that individuals with high levels of schizotypy use more maladaptive coping strategies than those low in schizotypy and do not differ on their use of adaptive coping strategies. The current study also examined two mediation models predicting that (1) maladaptive coping strategies would mediate the relationship between schizotypy and negative affect and (2) that adaptive coping strategies would mediate the relationship between schizotypy and positive affect. The results of the current study replicated previous research (Watson & Naragon-Gainey, 2010; Horan, Blanchard, Clark, & Green, 2008) in that higher levels of schizotypy are related to higher levels of negative affect and lower levels of positive affect. These results further solidify the pattern of affect seen in both clinical and sub-clinical populations of individual's experiencing psychosis. The current study also replicated the finding that individuals endorsing high levels of schizotypy used more maladaptive coping behaviors than those endorsing low levels of schizotypy (Dangelmaier, Docherty, & Akamatsu, 2006). There are mixed findings regarding the use of adaptive coping behaviors in individuals with high levels of schizotypy as compared to those with low levels of schizotypy. One study found no difference in the use of adaptive coping between these two groups (Dangelmaier, Docherty, & Akamatsu, 2006) whereas another found that individuals with high levels of schizotypy used less adaptive coping (Pruessner, Lyer, Faridi, Joobar, & Malla, 2011).

In the current study, individuals with high levels of schizotypy did not differ on their use of adaptive coping behaviors from those with low levels of schizotypy.

Taken together, these findings suggest that this pattern of affect is present which may be due to the experiences associated with schizotypy. Another explanation for this pattern could be that individuals are reporting more characteristics of schizotypy due to the fact that they are experiencing more negative affect at the time of the study.

Interestingly, individuals reporting high levels of these characteristics do not appear to have deficits in their use of adaptive coping behaviors but rather are using more maladaptive behaviors than individuals with low levels of schizotypy. One possible explanation for this finding may be that individuals with higher levels of schizotypy may be experiencing more stress due to having these characteristics and therefore may use more coping behaviors, specifically maladaptive ones, in order to manage this stress.

Maladaptive coping behaviors were found to partially mediate the relationship between schizotypy and negative affect. Contrary to the proposed model of mediation, adaptive coping behaviors did not mediate the relationship between schizotypy and positive affect or negative affect. These findings parallel research on the general college population which also found that maladaptive coping mediated depression, anxiety, and stress whereas adaptive coping strategies did not mediate these variables (Mahmoud, Staten, Hall, & Lennie, 2012). The results of the mediation models suggest that the use of maladaptive coping behaviors may lead to the experience of negative affect in this population and possibly to the experience of more stress. It also appears that in the context of using both maladaptive and adaptive coping behaviors, maladaptive coping behaviors also mediate the experience of positive affect.

Maladaptive coping behaviors appear to have a more prominent role in the experience of both positive and negative affect than adaptive coping behaviors. Furthermore, individuals with high levels of schizotypy endorse using more maladaptive coping but did not differ on adaptive coping. This suggests that targeting and reducing the use of maladaptive coping may influence both the experience of negative and positive affect in this population rather than focusing solely on increasing adaptive coping strategies. These findings may help elaborate etiological models of the development of psychosis related disorders in considering the type of coping behaviors employed by individuals who are psychosis prone.

Prevention programs can be developed to target decreasing the use of maladaptive coping behaviors to lessen the experience of negative affect and possibly the experience of stress in this sub-clinical population. Currently, no programs specifically address targeting and decreasing maladaptive coping in this population; however there is a program that educates about different types of coping and the resulting consequences of their use. The program, Transforming Lives through Resilience Education, is available online and is aimed to educate college students about the responses to stress, different types of coping (emotion-focused and problem-focused), and empowers individuals to manage their stress in ways that lead to resilience (Steinhardt & Dolbier, 2008). Individuals that participated in this program reported decreased levels of negative affect as compared with a waitlist group. Considering these results in the college population, it may be beneficial to study the use of a program such as this in a population of individuals with high levels of schizotypy. In considering the current research, using a program such as this with modifications in order to specifically target decreasing maladaptive coping

behaviors may be the most beneficial to reduce negative affect and promote resilience in individuals with high levels of schizotypy.

Future studies should examine with more specificity which coping behaviors lead to the exacerbation of stress or symptoms, when used in what degree, and for what types of stressors. This may be accomplished with longitudinal studies that track the use of stressors and coping responses over time, possibly using a journal. The differential use of coping behaviors and their outcomes in individuals at high risk for developing a psychosis-related disorder should also be examined as the current study looked at schizotypy in a continuous manner. Programs such as Transforming Lives through Resilience Education should also be studied within psychosis prone individuals in order to examine whether targeting coping skills would reduce negative affect and stress.

There are several limitations to the current study. As the current study was cross-sectional in nature, causal inferences cannot be made and the relationships between study variables may not be as proposed due to this limitation. One is the use of a sample of undergraduate students (primarily Caucasian; restricted range in ages/SES) which limits the generalizability of our findings. Another limitation is the use of self-report measures which have the potential for response bias and error. A final limitation is the multitude of ways to examine coping behaviors. The coping behaviors categorized as maladaptive may be adaptive in some circumstances or when used in moderation. For example, self-distraction, which is considered maladaptive, may be adaptive in certain instances. For example, attention switching, which is taught as a coping strategy in Cognitive Behavioral Therapy for psychotic disorders, is similar to self-distraction in that individuals are trained to turn their attention to an external or internal stimuli (such as a

positive memory or object in environment) at the onset of a delusion or hallucination (Barlow, 2008, p. 474).

In conclusion, the current study suggests that coping behaviors, specifically maladaptive coping behaviors, play a role in the relationship between schizotypy and the experience of positive and negative affect. These findings may have implications for etiological models of schizophrenia which may be improved by considering both coping strategies and the pattern of high negative affect and low positive affect when conceptualizing diathesis-stress relationships in the development of psychosis. While replications of the current research are needed, the clinical implications of this study point to the potential benefit of specialized prevention programs that seek to reduce the use of maladaptive coping behaviors in the management of negative affect and stress. Future studies should investigate these types of programs in individuals with high levels of schizotypy.

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