

LONGITUDINAL PREDICTORS OF SUBJECTIVE WELLBEING AND ADAPTIVE
FUNCTIONING IN EARLY ADULTHOOD: INTERNALIZING AND
EXTERNALIZING BEHAVIORS, EMOTION REGULATION,
PARENTING, AND SUBSTANCE USE

A Dissertation
Submitted to
The Temple University Graduate Board

In Partial Fulfillment of the
Requirements for the Degree
DOCTOR OF PHILOSOPHY

by
Lindsey D. Bruett, M.A.
July 2015

Dissertation Committee:

Deborah Drabick, Ph.D., Department of Psychology, Temple University

Michael McCloskey, Ph.D., Department of Psychology, Temple University

Thomas Olino, Ph.D., Department of Psychology, Temple University

Robert Fauber, Ph.D., Department of Psychology, Temple University

Ronald Taylor, Ph.D., Department of Psychology, Temple University

Hongling Xie, Ph.D., Department of Psychology, Temple University

©
Copyright
2015

by

Lindsey D. Bruett
All Rights Reserved

ABSTRACT

In psychological research, positive developmental outcomes in young adulthood are often conceptualized as the absence of psychological symptoms. However, positive outcome may be better understood as high levels of subjective wellbeing and adaptive interpersonal, occupational, and educational functioning. Nevertheless, a comprehensive model that takes into account multiple facets of youth behavior and transactional relations between youth and their environments as predictors of adjustment in young adulthood is lacking. Prior evidence implicates internalizing and externalizing behaviors in the development of subjective wellbeing, and emotion regulation as a reliable predictor and/or correlate of both internalizing and externalizing behaviors. Parenting behaviors in childhood and youth substance use represent other shared risk or resilience factors that likely contribute to internalizing and externalizing behaviors, as well as subjective wellbeing and adaptive functioning outcomes in young adulthood. The current study examined an existing sample of youth who were recruited at ages 10-12 and were assessed again at ages 16 and 25. Analyses aimed to (a) identify subgroups of youth who vary in frequency and quality of internalizing and externalizing symptoms and emotion regulation at ages 10-12 and 16 using latent class analyses, (b) examine stability of and transitions in class membership from classes at ages 10-12 to classes at age 16 using latent transition analysis, (c) investigate parenting behaviors as predictors of stability and transitions among classes, and (d) investigate whether classes differ in cross-sectional and prospective levels of substance use, as well as subjective wellbeing and adaptive functioning in young adulthood. Results demonstrated that a 4-class model best fit the data at both time points. Classes of youth with (a) low symptoms and high emotion

regulation; (b) low internalizing, moderate externalizing, and high emotion regulation; and (c) moderate internalizing, high externalizing, and low emotion regulation emerged at both time points. The fourth class at ages 10-12 was characterized by high social withdrawal and moderate hyperactivity and emotion regulation, and the fourth class at age 16 was characterized by moderate internalizing, low externalizing, and low emotion regulation. Latent transition analyses revealed transitions from several symptom classes at ages 10-12 into the age 16 Low Symptoms/High Emotion Regulation class, and also stability and transitions to other symptom classes. Predictor analyses indicated that levels of parenting behaviors (maternal and paternal acceptance, child-centeredness, use of guilt and anxiety to control youth, lax discipline, and nonenforcement of rules) were associated with transitions among and stability within classes, but findings were dependent on levels of internalizing and externalizing symptoms among classes. Substance use differed cross-sectionally and prospectively across classes based on the substances considered. Further, subjective wellbeing was higher among age 16 classes characterized by low internalizing symptoms, low or moderate externalizing symptoms, and high emotion regulation. Adaptive functioning in select domains was also differentially associated with classes at both time points, with youth in the Low Symptoms/High Emotion Regulation classes experiencing better outcomes in certain areas. Results indicate that distinct classes of youth internalizing and externalizing symptoms and emotion regulation can be identified in late childhood and middle adolescence and are differentially associated with outcomes related to wellbeing and adaptive functioning in young adulthood. Further, the frequency and quality of co-occurring symptoms evidenced among youth may change over time as reflected in transitions from classes identified in middle childhood to adolescence.

Emotion regulation and parenting may be potential targets for enhanced interventions intended to promote subjective wellbeing and adaptive functioning among youth with internalizing and externalizing symptoms.

ACKNOWLEDGMENTS

First and foremost, I would like to thank my advisor, Dr. Deb Drabick. From the moment that I began working with her, she has provided warm, supportive mentorship and training. I admire her dedication to helping her students grow professionally and personally. I have learned a tremendous amount from her, and look forward to continuing to do so throughout my career.

I would also like to thank my Doctoral Advisory committee members, Dr. Mike McCloskey and Dr. Tom Olino. Their feedback and insight as I was planning and writing my dissertation was very valuable. Further, I am very grateful to my Dissertation Defense Committee members, Dr. Robert Fauber, Dr. Ronald Taylor, and Dr. Hongling Xie for their time and thoughtfulness in providing feedback on my dissertation. I would also like to thank the rest of the Temple Clinical Psychology faculty, who all played a role in providing an enriching and fulfilling graduate training experience over the past four years.

I am extremely grateful to Dr. Maureen Reynolds, Dr. Ralph Tarter, Steve Knopf, and the rest of the Center for Education and Drug Abuse Research (CEDAR) team for their generosity in sharing their data, and their guidance and support in working with it. Thank you also to the participating families at CEDAR, without whom this project would not be possible. This parent project was sponsored by the National Institute for Drug Abuse.

TABLE OF CONTENTS

	Page
ABSTRACT	iii
ACKNOWLEDGEMENTS	vi
LIST OF TABLES	x
LIST OF FIGURES	xii
CHAPTER	
1. INTRODUCTION	1
Subjective Wellbeing and Adaptive Functioning	3
Internalizing Behaviors	9
Externalizing Behaviors	10
Emotion Regulation	12
Internalizing Behaviors and Emotion Regulation	13
Externalizing Behaviors and Emotion Regulation	15
Parenting	17
Parenting, Emotion Regulation, and Internalizing Behaviors	19
Parenting, Emotion Regulation, and Externalizing Behaviors	21
Substance Use: A Developmental Perspective	24
Integrated Conceptual Model	26
The Current Study	29
Aim 1: Identification of classes	29
Hypothesis 1: LCA at Times 1 and 2	30
Aim 2: Stability of Class Membership	31
Hypothesis 2: LTA at Time 1 to 2	31

Aim 3: Examination of Parenting Behaviors as Predictors of Class Membership and Class Transitions	32
Hypothesis 3a: Tests of Equality of Means	32
Hypothesis 3b: Prediction of Transitions.....	32
Aim 4: Examination of Subjective Wellbeing, Adaptive Functioning, And Substance Use Among Latent Classes	33
Hypothesis 4.....	33
2. METHOD	35
Participants.....	35
Procedure	37
Measures	38
Statistical Analyses	43
Aim 1: Identification of Classes	44
Latent Class Analysis.....	44
Aim 2: Stability of Class Membership.....	47
Latent Transition Analysis.....	47
Aim 3: Examination of Parenting Behaviors as Predictors of Class Membership and Class Transitions.....	48
Tests Of Equality Of Means	48
Prediction Of Transitions.....	48
Aim 4: Auxiliary Analyses of Substance Use, SWB, and Adaptive Functioning	49
Tests of Equality of Means	49
3. RESULTS	50
Descriptive Statistics.....	50
Aim 1: Identification of Classes	56
LCA at Time 1	56

LCA at Time 2	59
Aim 2: Stability of Classes across Times 1 and 2.....	62
Cross Tabulation of Class Membership.....	62
LTA of Class Membership.....	63
Aim 3: Parenting Behaviors as Predictors of Transitions among Classes	65
Aim 3a.....	65
Aim 3b	68
Aim 4: Auxiliary Analyses of Substance Use, SWB, and Adaptive Functioning	82
4. DISCUSSION	87
Aim 1: Identification of Classes of Internalizing and Externalizing Symptoms and Emotion Regulation	87
Aim 2: Stability of Class Membership across Times 1 and 2.....	92
Aim 3: Parenting Behaviors as Predictors of Transitions among Classes	93
Aim 4: Concurrent Substance Use; And Levels Of Subjective Wellbeing, Interpersonal, Occupational, And Educational Adaptive Functioning, And Substance Use In Early Adulthood	100
Strengths, Limitations, and Future Directions	105
Conclusions and Clinical Implications	109
REFERENCES CITED.....	113

LIST OF TABLES

Table	Page
1. Bivariate Correlations Among Study Variables	51
2. Class Model Comparison at Ages 10-12	57
3. Class Model Comparison at Age 16	60
4. Percentage of Sample (n) in Classes Across Times 1 and 2	63
5. Transition Probabilities for Latent Classes from Time 1 to Time 2	64
6. Omnibus Equality of Means Tests and Follow-Up Pairwise Comparisons for Predictors at Times 1 and 2.....	67
7. Estimated Transition Probabilities for Time 1 to Time 2 with Paternal Acceptance as a Predictor	69
8. Estimated Transition Probabilities for Time 1 to Time 2 with Maternal Acceptance as a Predictor	70
9. Estimated Transition Probabilities for Time 1 to Time 2 with Paternal Child-Centeredness as a Predictor	71
10. Estimated Transition Probabilities for Time 1 to Time 2 with Maternal Child-Centeredness as a Predictor	72
11. Estimated Transition Probabilities for Time 1 to Time 2 with Paternal Guilt as a Predictor	73
12. Estimated Transition Probabilities for Time 1 to Time 2 with Maternal Guilt as a Predictor.....	74
13. Estimated Transition Probabilities for Time 1 to Time 2 with Paternal Use of Anxiety as a Predictor	75
14. Estimated Transition Probabilities for Time 1 to Time 2 with Maternal Use of Anxiety as a Predictor	76
15. Estimated Transition Probabilities for Time 1 to Time 2 with Paternal Lax Discipline as a Predictor	77
16. Estimated Transition Probabilities for Time 1 to Time 2 with Maternal Lax Discipline as a Predictor	78

17. Estimated Transition Probabilities for Time 1 to Time 2 with Paternal Nonenforcement of Rules as a Predictor	80
18. Estimated Transition Probabilities for Time 1 to Time 2 with Maternal Nonenforcement of Rules as a Predictor	81
19. Omnibus Equality of Means Tests and Follow-Up Pairwise Comparisons for Concurrent and Future Substance Use Behavior (Times 2 and 3) at Times 1 and 2.....	84
20. Omnibus Equality of Means Tests and Follow-Up Pairwise Comparisons for Time 3 (age 25) Subjective Wellbeing and Adaptive Functioning at Times 1 (Age 10-12) and 2 (Age 16)	86

LIST OF FIGURES

Figure	Page
1. Mean Summary Scores for the Four-Class Model of Internalizing and Externalizing Symptoms and ER at Ages 10-12 ($N=775$).....	59
2. Mean Summary Scores for the Four-Class Model of Internalizing and Externalizing Symptoms and ER at Age 16 ($n=627$).....	61

CHAPTER 1

INTRODUCTION

As individuals and as a society, our goal is generally for youth to develop into well-adjusted, productive members of society. Further, we strive for wellbeing, which also can be thought of as life satisfaction. Our understanding of development is often oversimplified – we tend to examine problem behaviors on a linear basis, implying that “good” and “bad” lie on opposite ends of a spectrum. However, research demonstrates that for many behaviors and symptoms deemed risk factors or problematic behaviors, such as impulsivity and substance use, some degree of the behavior at particular developmental periods (e.g., adolescence) may actually be predictive of more adaptive functioning (e.g., Baumrind & Moselle, 1985; Gullo & Dawe, 2008; MacLean, Paradise & Cauce, 1999; Steinberg, 2008). Further, we often define a positive developmental outcome as a lack or absence of psychiatric symptoms as opposed to adaptive functioning (Diener, Suh, Lucas, & Smith; 1999; Park, 2004). The current dissertation argues that by better understanding normative development in multiple important domains of risk and resilience during adolescence, and by understanding developmental outcomes in terms of wellbeing and adaptive functioning in several areas of life among young adults, we can take a more holistic view of mental health (Park, 2004) and thus better support positive youth development.

Wellbeing can be thought of as perceived quality of life (Huppert et al., 2009; Park, 2004). It is a term widely used in many areas of research, including physical health, economics, and psychology (Halleröd & Selden, 2013). The concept of wellbeing has come from a long-standing discussion on how to measure and improve general quality of life (Diener, 2000; Halleröd & Selden, 2013). Traditional measures of prosperity have

relied on objective indicators (e.g., wealth, educational attainment). However, these objective indicators often fail to explain the disconnection that exists between relative prosperity and individual and social problems (Huppert et al., 2009). In other words, objective markers of relative prosperity (such as wealth) may not predict societal or individual problems such as violent crime and suicide. This dichotomy may apply on both a group and an individual level. In terms of cultures or geographical regions, groups may rank highly on traditional indicators of objective wellbeing such as GDP, infrastructure, and educational systems, but also have high rates of mental health problems and crime. On an individual level, one may have a relatively high income, a high level of education, and a prestigious occupation, but also have high rates of mental health problems, interpersonal conflict, and poor physical health. It is thought that markers of wellbeing may help to explain these discrepancies (Diener, 2000; Huppert et al., 2009). For example, low levels of subjective wellbeing may explain the presence of individual and social problems (e.g., violent crime or suicide rates) in the presence of high levels of objective wellbeing (e.g., educational attainment, income).

Empirical research related to wellbeing spans multiple disciplines (e.g., economics, public policy, psychology) and centers around multiple domains of human functioning (e.g., economic, social, physical health). The current paper will focus on the psychological construct of subjective wellbeing (SWB) and use the following working definition: a generally positive state of mind that involves the entire life experience (Diener, 2002; Tomy, Norrish, & Cummins, 2013). According to Diener (2000), individuals are thought to experience SWB when they are generally satisfied with life,

engage in interesting activities, and experience many pleasant and few unpleasant emotions.

SWB broadly is comprised of several components: overall life satisfaction; satisfaction with important domains (e.g., occupation, education); positive affect; and low levels of negative affect (Diener, 2000). Within the research literature on SWB, these domains frequently are used interchangeably and with the construct of happiness (Proctor, Linley, & Maltby, 2009; Seligman & Csikszentmihalyi, 2000). Researchers have argued that the SWB construct is useful for its ability to provide insight into individuals' feelings about themselves and their lives, regardless of perceived life circumstances (Diener, Oishi & Lucas, 2003). This aspect is particularly important given that objective (e.g., high school completion rates, abuse, income) and subjective quality of life indicators have demonstrated weak relations with one another (e.g., Cummins, 2000). Importantly, though earlier conceptions of SWB treated it as such, SWB is not simply the absence of psychopathology or psychological distress, but rather the presence of a generally positive state of mind or sense of life satisfaction (Greenspoon & Saklofske, 2001; Keyes, 2002; Sanjuán & Magallares, 2013). Researchers of SWB generally argue that it is a better marker of mental health than reduced or absent symptoms because it incorporates positive factors that may provide a more complete picture of an individual's psychological health (Cowen, 1991, 1994; Diener, 1994; Park 2004).

Subjective Wellbeing and Adaptive Functioning

Some researchers also contend that adaptive functioning and domain satisfaction are important components of wellbeing, and incorporate it into working definitions of the

SWB construct (Diener et al., 1999; Huppert et al., 2009). Other researchers characterize domains of adaptive functioning as predictors of SWB and happiness (Myers, 2000). A public health perspective maintains that overall wellbeing depends on adaptive functioning in multiple domains (Halleröd & Selden, 2013). There are strong correlations between functioning and satisfaction in different areas of life, and problems in one domain can affect another, causing a more general wellbeing problem (Halleröd & Bask, 2008). For the purposes of this paper, adaptive functioning in several domains important to contextual development (i.e., family, friends, spouse or partner, education, occupation) are considered as separate but related constructs from SWB.

Multiple associations between family functioning and family support with SWB have been demonstrated. Perceived family functioning, perceived quality of attachment to parents, and perceived maternal and paternal support have positive associations with SWB (Heaven, Searight, Chastain, & Skitka, 1996; Young, Miller, Norton, & Hill, 1995), whereas SWB has negative (inverse) associations with parent-child conflict and poor family functioning (McFarlane, Bellissimo, & Norman, 1995; Shek 1997a-c, 1998, 2002). For example, youth who report being emotionally close with and supported by their parents, not surprisingly, also report greater SWB than youth who report frequent conflictual interactions with parents and within the family. Findings on relations between parental marital status and SWB among youth are mixed. Generally speaking, parental separation, divorce, and remarriage are associated with lowered SWB among adolescents (Demo & Acock, 1996), but research also has demonstrated a significant amount of variation in how youth respond to these experiences (Greene, Anderson, Doyle, & Riedelbach, 2006). For example, some youth may be buffered from negative effects of

parental divorce by parental warmth and consistency, whereas other youth may experience exacerbation of the negative effects of parental divorce if other risk factors arise, such as insufficient family financial resources following separation.

Further, positive correlations have been demonstrated among greater social support, interpersonal functioning, and SWB (e.g., Myers, 2000; Suldo & Huebner, 2006). Youth and adults with close social relationships (familial and nonfamilial) appear to cope more effectively with life stressors such as bereavement, job loss, and illness (Abbey & Andrews, 1985; Perlman & Rook, 1987). Developmentally, the need for social support from parents and peers shifts over time (Proctor et al., 2009). Reliance on peers for support generally increases in middle to late adolescence as reliance on social support from parents diminishes (Proctor et al., 2009; Steinberg, 1987). Given this normative developmental shift, one would expect that the importance of peer social support in associations with SWB increases during adolescence. Research has supported this notion, finding that particularly among youth, social competence and social self-efficacy are positively linked to SWB (e.g., Ash & Huebner, 2001; Fogle, Huebner, & Laughlin, 2002; Greenspoon & Saklofske, 2001; McKnight, Huebner, & Suldo, 2002; Proctor et al., 2009). As with many SWB correlates and predictors, self-perceptions of social factors may be just as, if not more, important than more objective measures of the same constructs. Examining individuals' self-perception of social factors is particularly important when considering the influence of social support on youth and young adults who experience internalizing symptoms, given the propensity of such individuals to negatively evaluate themselves and their environment (e.g., Beck, 2008; Rapee & Heimberg, 1997).

In terms of adult spousal or partner relationships, SWB is higher when people are in a romantic relationship than when they are single (for review, see Myers, 2000). However, this finding does not hold among individuals in marriages described as not happy. Relations between marriage and SWB appear to be bidirectional (Myers, 2000), such that happy people may make more appealing partners (Gotlib, 1992; Veenhoven, 1988) and marital intimacy and support positively influence SWB (Mastekaasa, 1995). Further, a large body of literature supports the importance of patterns of adolescent relationship functioning as predictors of relationship competence in adulthood (see Rauer, Pettit, Lansford, Bates, & Dodge, 2013). For example, adolescents who experience positive, adaptive functioning in relationships are likely to have similar experiences as adults, even in the context of different partners. Therefore, relationship functioning throughout the lifespan may influence SWB.

Behaviors, attitudes, experiences, and achievement in educational settings have been associated with SWB as well. On the most basic level, educational attainment accounts for a small but significant amount of variance in SWB in adulthood (Witter, Okun, Stock, & Haring, 1984). Taking a more nuanced perspective, high levels of adolescent SWB are associated with academic self-efficacy, greater levels of participation in structured extracurricular activities, and grade point average (Gilman, 2001; Gilman & Huebner, 2006). Further, perceived control at school is associated with perceived quality of life, which can be conceptualized as a component of SWB (Adelman, Taylor, & Nelson, 1989). In general, investigations of SWB as it relates to education highlight the importance of opportunities for engagement in appropriately challenging, personally meaningful academics and activities (Maton, 1990; Wong &

Csikszentmihalyi, 1991). Consistent with this position, SWB is negatively associated with poor attitude toward school and teachers (Gilman & Huebner, 2006; Huebner, Funk, & Gilman, 2000). Educational experiences are likely to influence other domains of adaptive functioning as well. For instance, negative experiences in school are likely to make it less probable that an adolescent will pursue higher education, which generally limits occupational opportunities. Thus, adaptive functioning in the occupational domain may be negatively affected as well, highlighting the interrelated nature of SWB and domains of adaptive functioning in early adulthood.

In terms of occupational functioning among adolescents and adults, decreased SWB has been observed in the context of unemployment or underemployment (Creed, Muller, & Patton, 2003; Guardiola & Guillen-Royo, 2014). Among employed individuals, increased SWB is observed when one's occupation is engaging and aligns with one's skillset (Csikszentmihalyi, 1990, 1999). In terms of youth occupational functioning, longitudinal research with adolescents has demonstrated that youth who leave school without obtaining employment report lower levels of SWB in comparison to those who leave school and are employed (Patton & Noller, 1984). This finding follows the example presented above, wherein impaired adjustment in one domain (e.g., education) may impact adjustment in other domains (e.g., occupation), further supporting the notion of strong associations among SWB and contexts of adaptive functioning. As demonstrated, adaptive functioning in multiple contextual domains and SWB are highly related, and thus each of these related constructs will be examined in the current study.

In addition to the adaptive functioning constructs outlined above, internalizing and externalizing behaviors and emotion regulation (ER), as well as parenting and

substance use, have demonstrated associations with SWB and can be thought of as components of risk and resilience processes that are present in adolescence and predictive of adjustment in early adulthood. ER capacities are strongly associated with and likely underpin development and maintenance of internalizing and externalizing behaviors, and provide a richer picture of youth functioning within varied contexts than internalizing and externalizing behaviors alone. Parenting and substance use may confer risk or resilience depending on the nature of the parenting behavior and/or frequency of substance use, as well as the developmental period examined.

Further, internalizing and externalizing behaviors and ER may predict later SWB. Indeed, the promotion of wellbeing and the prevention of emotional and behavioral problems are thought to be closely linked (Bartels, Cacioppo, van Beijsterveldt, & Boomsma, 2013). SWB is negatively correlated with psychopathology, with correlations generally ranging from -0.40 to -0.55, demonstrating that the constructs have distinct but also overlapping features that may be explained by correlated biological or contextual factors (Bartels et al., 2013). Prior to the mid-twentieth century, mental health was typically conceptualized as the absence of psychopathology, implying that SWB and psychopathology fall on opposite ends of a continuum (Greenspoon & Saklofske, 2001). An early challenge to this notion was put forth by Jahoda (1958), who wrote that it is “unlikely that the concept of mental health can be usefully defined by identifying it with the absence of disease” (p.14). However, this paradigm has shifted, and current researchers generally support a dual factor model in which psychopathology and SWB constitute separate continua (for reviews, see Diener, 2000; Greenspoon & Saklofske,

2001). Consistent with this literature, the current dissertation considers psychological symptoms and SWB as separate constructs.

Internalizing Behaviors

Internalizing behaviors are comprised of both depression and anxiety symptoms (Zahn-Waxler et al., 2000). Conceptualizations of internalizing behavior also often include social withdrawal (e.g., Bornstein, Hahn, & Haynes, 2010). Internalizing problems represent enormous public health issues. Depression has a lifetime prevalence rate of 16.6%-41.4% (Kessler et al., 2005; Moffitt et al., 2010) and incurs risk for suicide, decreased productivity in society, and significant impairment in functioning and quality of life. Anxiety has a lifetime prevalence rate of 28.8%-49.5% (Kessler et al., 2005; Moffitt et al., 2010) and is associated with risk for depression, substance abuse problems, and educational underachievement (Woodward & Fergusson, 2001). Prevalence rates vary as a function of whether data are collected prospectively or retrospectively, and recent data have suggested that retrospective reports underestimate prevalence rates of depression and anxiety (Moffitt et al., 2010; Olino et al., 2012b). Anxiety and depression frequently co-occur (e.g., Angold, Costello, & Erkanli, 1999a), and these symptom profiles are impairing even at subthreshold levels (Avenevoli, Knight, Kessler, & Merikangas, 2008). Research on the developmental course of internalizing symptoms suggests that they may increase during adolescence (Costello, Mustillo, Erkanli, Keeler, & Angold, 2003), particularly among females (Hankin et al., 1998; Hayward & Sanborn, 2002; Nolen-Hoeksema & Girgus, 1994).

Research demonstrates associations between internalizing behaviors and SWB. SWB is negatively correlated with depression, other mood disorders, and anxiety (Bartels

et al., 2013; Gilman, Huebner, & Laughlin, 2000; Greenspoon & Saklofske, 2001; Kendler, Myers, Maes, & Keyes, 2011; Proctor, Linley, Maltby, 2009; Suldo & Huebner, 2004a). SWB is also negatively associated with loneliness, social anxiety, and shyness among children and adolescents (Neto, 1993).

In studies of children, adolescents, and adults, depression consistently is negatively correlated with SWB (Bartels et al., 2013; Funk et al., 2006; Gilman & Huebner, 2006; Greenspoon & Saklofske, 1997; Headey et al., 1993). Further, studies of adults (e.g., Xu et al., 2013) and adolescents (e.g., Valois, Zullig, Huebner, & Drane, 2004) have suggested a link between low SWB and suicidal behavior. Valois and colleagues (2004) identified negative associations among SWB and poor mental and physical health, suicidal ideation, planning for suicide, and suicide attempts among adolescents. Taken together, prior research indicates associations between SWB and internalizing problems. Though studies are largely cross-sectional, relations among the two constructs are likely bidirectional and involve other contextual risk and resilience factors. For example, depression and anxiety in adolescence may negatively contribute to SWB over time, which may in turn be associated with correlates (e.g., low social support) that confer risk for maintaining or exacerbating internalizing symptoms and low SWB.

Externalizing Behaviors

Externalizing behaviors include aggression, defiance, oppositionality, hyperactivity, and impulsivity. They often involve the violation of societal norms, property destruction, and harm toward others (Keil & Price, 2006). In terms of *DSM-5* disorders, they are generally thought to include oppositional defiant disorder (ODD), conduct disorder (CD), and attention-deficit/hyperactivity disorder (ADHD) (American

Psychiatric Association, 2013). Externalizing behaviors are relatively common in early childhood, with mothers of preschoolers reporting that 5%-13% of their children exhibit moderate to severe externalizing behaviors (Campbell, Shaw, & Gilliom, 2000; Lavigne et al., 1996). As with internalizing problems, externalizing symptom profiles are impairing even at a subthreshold level (Angold, Costello, Farmer, Burns, & Erkanli, 1999b). Left untreated, externalizing behaviors are linked to a wide range of adverse outcomes among children and adolescents. Negative effects of externalizing problems often last into adulthood, resulting in such outcomes as substance abuse, instability in employment, and relationship difficulties (Champion, Goodall, & Rutter, 1995; McMahon, Wells, & Kotler, 1998; Offord & Bennett, 1994). However, research on the developmental course of externalizing symptoms demonstrates that some domains such as hyperactivity and aggression generally decline over the course of development (Loeber, 1982; Mick, Faraone & Biederman, 2004). Given findings of differential stability among externalizing behaviors, it is important to consider typical and atypical externalizing behavior across developmental periods.

Though conceptualizations of externalizing symptoms historically have been negative, researchers recently have called for a reexamination of certain externalizing symptoms that could be cast in a more benign or even positive light, such as impulsivity. For example, Gullo and Dawe (2008) argue that the field has dismissed prematurely the positive associations with a heightened reward drive and disinhibition in adolescence and overlooked evidence suggesting that such features are associated with positive outcomes in adulthood (Gullo & Dawe, 2008; Shiner, 2000; Shiner, Masten, & Roberts, 2003). For example, approach-based temperament traits (e.g., extraversion, positive emotionality,

behavioral approach have been shown to be associated with increases in striving for academic and personal achievement goals (Elliot & Thrash, 2002). Further, reward-driven individuals demonstrate greater involvement in and pleasure from their jobs (van der Linden, Beckers, & Taris, 2007) and are more likely to achieve leadership positions (Anderson, John, Keltner, & Kring, 2001; Bono & Judge, 2004). Such reward-driven individuals also might experience success in interpersonal relationships if they find social interaction sufficiently motivating and rewarding (Steinberg, 2008). In short, achieving certain goals such as those related to academic and occupational success, as well as perhaps interpersonal success, may require sometimes risky and reward-driven behaviors.

Externalizing behaviors are typically negatively correlated with SWB, particularly in the domains of violence and aggression (MacDonald, Piquero, Valois & Zullig, 2005; Suldo & Huebner, 2004a; Valois, Zullig, Huebner, & Drane, 2001). In general, SWB is negatively associated with many adolescent risk behaviors: physical fighting, fighting requiring medical treatment, carrying a weapon inside or outside of school, and engaging in relationship violence (Thatcher et al., 2002; Valois et al., 2001; Valois, Paxton, Zullig, & Huebner, 2006). It may be that adolescents engaging in such behavior also are associating with deviant peers, which has implications for other problems in adaptive functioning (e.g., family conflict, maladaptive substance use) and thus further contributes to diminished SWB.

Emotion Regulation

The construct of ER has been widely studied, despite continued discrepancies in its precise definition and disagreement over how the construct is best assessed (Cole, Martin & Dennis, 2004; Thompson, Lewis, & Calkins, 2008). This dissertation will

utilize a working definition of ER, adopted from Cole et al. (2004), which refers to changes in psychological processes that appear to result from activated emotions, as well as changes in the activated emotion (which may include changes in emotion valence, intensity, and time course). These changes in the activated emotions may result from behavioral strategies used by the individual (Cole et al., 2004; Thompson, 1994).

One of the earliest developmental tasks is to learn to employ such strategies to regulate behaviors and emotions in an appropriate manner. According to Cole, Zahn-Waxler, and Smith (1994b), the well-adjusted individual is generally emotionally well-regulated, readily attenuating the intensity and duration of emotions as needed and strengthening and prolonging emotion states when necessary. Further, adaptive ER includes the capacity to generate and sustain emotions in order to carry out activity and to effectively communicate with others, particularly in coordination with the emotion of others (Cole et al., 1994b). Deficits in such regulatory behaviors continue throughout adolescence and adulthood and are associated with and thought to underlie psychopathology and other problems, such as difficulties with interpersonal functioning (Braet et al., 2014; Zahn-Waxler, Klimes-Dougan, & Slattery, 2000). In considering associations among ER and internalizing and externalizing behaviors, deficits in ER are considered as both a risk factor and a correlate of such behaviors.

Internalizing Behaviors and Emotion Regulation

Research has shown consistently positive associations between deficits in ER skills and internalizing symptoms throughout the lifespan (Eisenberg et al., 2001; Esbjørn, Bender, Reinholdt-Dunne, Munck & Ollendick, 2012; Feng et al., 2009; Garber, Braafladt, & Weiss, 1995; Lougheed & Hollenstein, 2012; Silk, Steinberg, & Morris,

2003; Suveg & Zeman, 2004; Zahn-Waxler, Klimes-Dougan, & Slattery, 2000).

Similarly, stronger ER skills are associated with attenuated internalizing problems among children and also serve a protective function against the development of internalizing symptoms (Eisenberg et al., 2001; Feng et al., 2009; Lougheed & Hollenstein, 2012; Suveg, Shaffer, Morelen & Thomassin, 2011; Suveg & Zeman, 2004). For example, youth with strong ER skills who are exposed to risk factors for internalizing problems, such as peer rejection or family conflict, may be better able to process and adaptively express the negative emotions associated with these experiences than their peers with poorer ER skills. Thus, their ER skills may buffer these contextual risk factors and thereby protect them against the development of internalizing symptoms.

Anxious youth and young adults tend to employ mainly inhibited and emotionally dysregulated response styles when they experience sad, scared, and angry emotions, neglecting more adaptive regulation techniques (Carthy, Horesh, Apter, & Gross, 2010; Kerns, Mennin, Farach, & Nocera, 2014; Mennin, McLaughlin, & Flanagan, 2009; Muris, van der Pennin, Sigmond, & Mayer, 2008; Suveg & Zeman, 2004). They also tend to experience emotions more intensely and evidence decreased ability to improve their mood relative to non-anxious youth (Southam-Gerow & Kendall, 2000; Suveg & Zeman, 2004).

Depressive symptoms among children, adolescents, and young adults are associated with more intense and labile emotions and less effective regulation of these emotions, increased negative emotionality and intensity of sadness, decreased positive emotions, and poor effortful control (Chaplin, Cole, & Zahn-Waxler, 2005; Compas, Connor-Smith, & Jaser, 2004; Feng et al., 2009; Rothbart & Bates, 2006; Silk et al.,

2003). Depression is associated with different types of regulation difficulties, however; indeed, youth who experience depressive symptoms evidence both problematic over-regulation of positive emotion and under-regulation of negative emotion (Cole, Michel, & Teti, 1994a). In sum, youth with internalizing symptoms exhibit deficits in ER, particularly in response to negative emotions such as sadness and fear, though these deficits include both under- and over-regulation of emotions. Although ER skills generally improve and become increasingly sophisticated over time (John & Gross, 2004), ER deficits continue to be evidenced among young adults, suggesting that ER difficulties may continue to contribute to internalizing problems across developmental periods.

Externalizing Behaviors and Emotion Regulation

ER deficits also are associated with externalizing behaviors. Externalizing problems are associated with emotional and behavioral lability; moreover, the underregulation of negative affect contributes to risk for and maintenance of behavior problems including ADHD (Barkley, 1997; Calkins, 1994; Hinshaw, 2003; Kochanska & Knaack, 2003). Specifically, children with behavioral disorders typically display negative temperamental styles and negative emotionality, and have difficulty regulating anger, aggression, and other negative emotions (Frick & Morris, 2004; Martel & Nigg, 2006; Melnick & Hinshaw, 2000; Sobanski et al., 2010). Additionally, among children and adolescents, individuals with more intense and labile emotions and less effective regulation of these emotions report more problem behaviors (Drabick, Beauchaine, Gadow, Carlson, & Bromet, 2006; Silk et al., 2003). Empirical research also has demonstrated that youth aggression, particularly reactive aggression, is associated with

deficits in regulation of emotional states (Marsee & Frick, 2007; Melnick & Hinshaw, 2000; Shields & Cicchetti, 1998). Youth with ER impairments are likely to be less equipped to adaptively handle negative emotions or adverse circumstances, and thus react in maladaptive ways, resulting in problem behavior such as oppositionality, conduct problems, and antisocial behavior.

With specific regard to ADHD, emotion dysregulation is present among individuals with ADHD throughout the lifespan, particularly in the context of co-occurring aggression (Melnick & Hinshaw, 2000). Some researchers hypothesize that ER deficits may be related to the heightened attending to external stimuli present among those with ADHD (Shaw, Stringaris, Nigg, & Leibenluft, 2014). Individuals with attentional difficulties who may be more prone to attend to the environment may have fewer resources available to monitor and attend to internal states, and thus exhibit heightened emotion dysregulation. Given that learning to observe, interpret, and react appropriately to internal states (e.g., sadness, anger) is continually developing and integral to ER, missed opportunities for learning and improvement in this domain may compound ER deficits over time.

Though associations between ER and externalizing behaviors are well established, the directionality of this relation is not fully understood. As described, ER capacities represent basic processes that contribute to adjustment and the development and maintenance of psychological symptoms. However, externalizing problems typically are associated with dysregulated affect. Therefore, expressed impairments in ER may be symptomatic of such disorders rather than causal (Halligan et al., 2013). Researchers have long hypothesized that ER deficits are causal in the etiology of externalizing

disorders (Barkley, 1997; Calkins, 1994; Hinshaw, 2003), but direct, longitudinal evidence that would help to elucidate whether ER represents a correlate or a cause of externalizing problems is limited. However, some research suggests that ER deficits may precede the onset of externalizing symptoms in some cases (e.g., Halligan et al., 2013) and that particularly ER strategies may protect against the development of externalizing symptoms (Gilliom, Shaw, Beck, Schonberg, & Lukon, 2002). Overall, associations between ER and externalizing behavior typically involve deficits in addressing anger or responding to external stimuli, rather than deficits in regulating emotions such as fear and sadness as is more commonly associated with internalizing behaviors.

Parenting

Parenting broadly involves everyday behavior towards offspring. It includes parents' cognition, emotions, and attributions toward their child, as well as parenting attitudes and values (Berg-Nielsen, Vikan, & Dahl, 2002). It has long been understood that parenting practices play a role in the trajectory of youth development, including the development of youth psychopathology. The relation between parenting and youth development may be best conceptualized as a transactional process between parents and youth in which the development of the child is seen as the product of dynamic transactions between the child and his or her context (Bell, 1979; Collins, Maccoby, Steinberg, Hetherington, & Bornstein, 2000; Sameroff, 1975, 2010).

Child socialization research has identified two global domains of parenting: parental warmth and parental control (Baumrind, 1971; Maccoby & Martin, 1983). Parental warmth is characterized by nurture, support, and reassurance toward offspring, and implies being emotionally sensitive and available to children's needs. Parental

control involves teaching children to act in accordance with rules, setting consistent limits in an unemotional way, having age-appropriate expectations, and monitoring activities. Generally speaking, youth who perceive their parents to be high in both warmth and positive control are better adjusted than youth whose parents are low in warmth and/or positive control (Lamborn, Mounts, Steinberg, & Dornbusch, 1991; Steinberg, Lamborn, Dornbusch & Darling, 1992). Relatedly, psychological control is a process associated with overprotective parenting by which parents engage in a variety of intrusive tactics to make children behave, think, or feel in parentally approved ways, which may include guilt induction, shaming, or instilling anxiety (Barber, 1996; Schaefer, 1965). Psychological control has been associated with elevated internalizing and externalizing symptoms among youth (Faubert, Forehand, Thomas, & Wierson, 1990; Pettit, Laird, Dodge, Bates, & Criss, 2001).

Adaptive parenting in these domains differs across developmental periods. For example, adaptive parental control among young children may involve comprehensive behavioral management, including setting and enforcing sleep routines and establishing appropriate behavior in social interactions (Dishion & McMahon, 1998; Frosch & Mangelsdorf, 2001). As youth enter adolescence, adaptive parental control allows for more autonomy (e.g., flexible or later bedtimes, some independence in social behavior with peers), but the need for consistency and increases in monitoring are important (Capaldi & Patterson, 1991; Dorsey & Forehand, 2003; Forehand & Nousiainen, 1993). Youth factors may influence adaptive parenting styles. For example, an adolescent prone to impulsivity and other externalizing behaviors may benefit from more parental monitoring than an anxious or withdrawn adolescent who may benefit from more

autonomy from parents (Chorpita & Barlow, 1998; Dishion & McMahon, 1998; McLeod, Wood, & Weisz, 2007). Across different developmental periods, adaptive parenting practices are associated with the development of ER among youth as well through a process known as emotion socialization. Through parental use of such behaviors as acceptance, positive and negative control, discussion of emotion, and reactions to children's emotions, parents play an important role in children's ability to understand, express, and regulate emotions (e.g., Eisenberg, Cumberland, & Spinrad, 1998; Fabes, Poulin, Eisenberg, & Madden-Derdich, 2002; Shaffer, Suveg, Thomassin, & Bradbury, 2012).

Parenting, Emotion Regulation, and Internalizing Behaviors

Links between parenting practices and internalizing behaviors have been well established. Some research suggests that children's perception of parental behavior (rather than more objective measures of parenting) is the most salient predictor of internalizing problems (Barber, 1996). Overcontrolled parenting, parental psychological control, rejection, inconsistency, and a lack of positive parenting are associated with anxiety symptoms among youth (Barber, 1996; Pfiffner & McBurnett, 2006; Rapee, 1997; Rubin, Coplan, & Bowker, 2009; Rudolph, Flynn, & Abaied, 2008; Wei & Kendall, 2014). Chorpita and Barlow (1998) suggested that uncontrollability and unpredictability are important components in the development of anxiety. Specifically, children who, perhaps because of controlling, critical, and inconsistent parenting style, have early experiences with limited control and influence over events in their surroundings may develop a psychological diathesis that may eventually develop into anxiety symptoms.

Research also has examined associations between parenting practices and depressive symptoms among youth. Parenting styles that are less warm and accepting and more critical have been identified among depressed children and adolescents when compared with non-depressed youth (Garber, 2006; Hipwell et al., 2008; Kaslow, Deering & Racusin, 1994; Restifo, & Bögels, 2009; Rey, 1995). Inconsistent parenting also is associated with depressive symptoms among children (Ostrander & Herman, 2006). Alloy and colleagues (2001) demonstrated support for three related theories regarding associations between parenting and depression: modeling of parental negative cognitive style, a tendency for parents of depressed youth to attribute negative life events and stressors to factors intrinsic to the child, and negative parenting practices (e.g., low acceptance and high psychological control). Given our understanding of multiple interacting influences on adolescent and young adult development, it is likely that all of these factors may confer risk at various periods in development. Last, positive parenting may demonstrate a protective function; for example, maternal warmth and acceptance attenuated the correlation between stressful life events and depressive symptoms among adolescent girls (Ge, Lorenz, Conger, Elder, & Simons, 1994).

Further, youth ER may represent a mechanism by which parenting behaviors influence youth internalizing symptoms and vice versa. As discussed, through emotion socialization, parents play an important role in youth's ability to regulate emotion (e.g., Eisenberg et al., 1998), and stronger ER skills are associated with attenuated internalizing problems among children (e.g., Eisenberg et al., 2001; Feng et al., 2009; Loughheed & Hollenstein, 2012; Suveg & Zeman, 2004). Consistent with this association, families of children with internalizing problems are less likely to use adaptive emotion socialization

strategies than families of children without internalizing problems (e.g., Hunter et al., 2011; Suveg et al., 2008). Thus, positive parental emotion socialization strategies such as acceptance of children's emotions and positive control may buffer children from experiencing internalizing problems, and lower levels of these positive emotion socialization strategies may confer risk for internalizing symptoms among youth.

Parenting, Emotion Regulation, and Externalizing Behaviors

Research has established associations between parenting and externalizing behavior, with coercive interchanges increasing problematic behavior among both parents and youth (e.g., Bates, Pettit, & Dodge, 1995; Patterson, 1982; Sameroff, 2010). Overall, poor parenting has been linked to child noncompliance, aggression, and oppositionality, as well as problems with attention and hyperactivity (Johnston & Mash, 2001; McKee, Colletti, Rakow, Jones, & Forehand, 2008). Cycles of parent-child interactions characterized by a high degree of coercion influence and maintain child externalizing symptoms over time (Granic & Patterson, 2006; McKee et al., 2008; Patterson, 1982). Following Patterson's (1982) coercion theory, which was updated and extended developmentally by Granic and Patterson (2006), aversive behaviors instinctual in the newborn infant, such as crying, shape parental behaviors associated with the infant's survival and wellbeing. Early parent-infant relationships also shape children's ER skills; for example, infants' crying cues parents about their internal states and needs, and infants are dependent on parents to regulate their experience and environment (Cole et al., 1994a). Most infants develop progressively more adaptive social and verbal skills as they age, but some children continue to rely on aversive strategies that progress from crying to noncompliance that may increase over time. Ineffective parenting influences children's

use of aversive, noncompliant, and dysregulated behavior. Specifically, parents who fail to enforce commands consistently and/or encourage regulated responding in challenging circumstances reinforce the child's negative and defiant behavior. In the short term, this strategy provides parental relief from the adverse experience of a conflictual interaction, which provides negative reinforcement for the parental behavior. Children thus increase negative behavior in response to future directives from parents, and the parent may begin to rely on increasingly harsh parenting strategies to control the child's behavior. As this cycle continues, these behaviors become more frequent and intense as parents and children are reinforced for their maladaptive responses (Granic & Patterson, 2006; McMahon & Forehand, 2003; Patterson, 1982).

In terms of types of externalizing behaviors, ODD and CD are often considered jointly (Angold et al., 1999a), and research indicates that ODD/CD are associated with inconsistent and coercive parenting, a lack of parental warmth and positive involvement, and poor monitoring of children's behavior (Drabick, Gadow, & Sprafkin, 2006; Johnston & Mash, 2001; Kashdan et al., 2004). Children who exhibit ADHD behaviors experience higher levels of parental harsh or reactive discipline compared to youth without ADHD behaviors (Johnston & Mash, 2001). Over a wide developmental range, observations of parent-youth interactions among youth with ADHD have revealed that mothers of youth with ADHD tend to be more directive and negative and less socially interactive, and youth with ADHD tend to be less compliant and more negative than their counterparts without ADHD (Barkley, Karlsson, Pollard, & Murphy, 1985; Campbell, Breaux, Ewing, Szumowski, & Pierce, 1986; DuPaul, McGoey, Eckert, & VanBrakle, 2001; Mash & Johnston, 1982). Overall, studies of parenting involving youth with

ADHD demonstrate high levels of negative and controlling behaviors, which are likely bidirectional wherein parenting negatively influences child behavior and difficult child behavior elicits negative parental responses.

Studies examining parenting among children with co-occurring externalizing problems (e.g., ADHD+ODD) have demonstrated that parents display more directive, rejecting, and overall negative behavior than parents of children without these conditions or children with only one externalizing disorder (Gomez & Sanson, 1994; Shaw, Owens, Giovannelli, & Winslow, 2001). Longitudinal studies evidence similar influences to those identified with cross-sectional research. One study demonstrated that children who met criteria for the comorbid diagnoses of ADHD and ODD/CD experienced higher levels of parental rejection in early childhood compared to youth who met criteria for only one disorder (Shaw, Owens, Giovannelli, & Winslow, 2001). Other findings have suggested that positive parenting in early childhood acts as a protective factor against conduct problems (Chronis et al., 2007). Evidence also has suggested that child disruptive behavior symptoms may exert a greater influence on parenting practice than parenting behavior on child symptoms (Burke, Pardini, & Loeber, 2008). Youth with externalizing behaviors may require socialization of negative emotions given that they typically display difficulties in regulating feelings of anger and frustration, and may exhibit behavior problems for lack of a more adaptive response (Cole et al., 1994a). Indeed, particular parental emotion socialization strategies (e.g., parental expression of anger, emotional discussion, and warmth) are associated with attenuation or exacerbation of externalizing symptoms over time (e.g., Denham et al., 2000; Eisenberg et al., 2001). In sum, externalizing behaviors among youth are associated with negative parenting behaviors,

particularly harsh and inconsistent parenting and poor acceptance. As with internalizing problems, evidence suggests that relations among these variables are likely bidirectional, with parent and youth behaviors exacerbating one another over time. However, it is important to note that positive parenting behaviors may aid in attenuating externalizing problems.

Substance Use: A Developmental Perspective

Substance abuse typically is conceptualized as the use of substances, such as drugs or alcohol, in a manner that is disruptive to functioning (Forman, Bry, & Urga, 2006). Youth substance use is a commonly encountered problem (Marschall-Lévesque, Castellanos-Ryan, Vitaro, & Séguin, 2014). Among children and adolescents, alcohol, cigarettes, and marijuana are the most commonly used substances (Forman et al., 2006).

According to a recent study, by grade nine, 29.8% of adolescents in the US had consumed alcohol in the past 30 days, 14.0% had binge drank, and 30.8% had tried marijuana at least once in their lives (Eaton et al., 2012). Prevalence rates are much lower during early adolescence, and these rates increase as adolescents age. Earlier age of onset of first alcohol or drug use is associated with greater risk for future substance use and psychiatric disorders (Chassin, Pitts, & Prost, 2002; DeWit, Adlaf, Offord, & Ogborne, 2000; McGue et al., 2001).

SWB and adaptive functioning are negatively correlated with substance use and abuse when examined on average (Bartels et al., 2013). Specifically, smoking is negatively correlated with academic achievement, a marker of adaptive functioning, among adolescents across cultures (Piko, Luszczynska, Gibbons, & Tekozel, 2005). Further, the age of first alcohol use and use of tobacco, cocaine, alcohol, marijuana, and

steroids is negatively correlated with SWB (Thatcher et al., 2002; Zullig, Valois, Huebner, Oeltmann, & Drane, 2001). Kuntsche and Gmel (2004) found that among Swiss adolescents, binge drinkers had lower SWB and higher depression compared to individuals who do not engage in binge drinking. In terms of directionality of these associations, although one could speculate that lower SWB might lead to increased levels of substance use, Newcomb, Bentler, and Collins (1986) found that early alcohol use led directly to a worsening of dissatisfaction with life as young adults.

However, when subclinical, lower levels of substance use are examined, the pattern of results differs (e.g., Baumrind & Moselle, 1985; Shedler & Block, 1990). For example, Katja, Päivi, Marja-Terttu, and Pekka (2002) found that among youth in the early years of high school, low-intensity drinking was significantly associated with global satisfaction, whereas high-intensity drinking (among girls) and regular drinking (among boys) were associated with lower levels of SWB. Other researchers have supported the notion that low levels of substance use during adolescence may not be indicative of later adjustment problems (e.g., Niemelä et al., 2006; Shedler & Block, 1990), but rather a developmentally normative task that facilitates learning to handle substance use as part of a culturally sanctioned social ritual (e.g., Baumrind & Moselle, 1985), establishing a unique identity from parents (Bukstein, Clancy, & Kaminer, 1992), assuming adult roles (Newcomb & Bentler, 1988), and/or developing and maintaining peer relations (Baumrind & Moselle, 1985). Further, abstention may be indicative of being socially withdrawn, fearful of new experiences, or overly controlled (MacLean et al., 1999; Shedler & Block, 1990). Such findings demonstrate the need to resist the strict categorization of certain behaviors as risk factors, and to consider adaptive and normative

levels within the context of developmental demands and knowledge of typical developmental trajectories related to factors that might be considered typical vs. problematic based on timing, frequency, and other individual and contextual factors. Understanding how earlier processes and individual characteristics confer risk for substance use can inform etiological models and more focused prevention and intervention efforts, consequently mitigating the potential negative sequelae of substance use.

Integrated Conceptual Model of Internalizing and Externalizing Behaviors, Emotion Regulation, Substance Use, and Parenting Behaviors

Prior evidence implicates internalizing and externalizing behaviors in the development of SWB, and ER as a crucial predictor and/or correlate of both internalizing and externalizing behaviors. Further, parenting behaviors and substance use represent other shared risk or resilience factors that likely contribute to internalizing and externalizing behaviors, as well as SWB and adaptive functioning outcomes in young adulthood. Despite these links, a comprehensive model that takes into account multiple facets of youth behavior and transactional relations between youth and their environments as predictors of adjustment in young adulthood is lacking. Additionally, there is a dearth of longitudinal analyses involving predictors of SWB and adaptive functioning in young adulthood. Further, as described, some behaviors widely considered to be risk factors (e.g., low to moderate levels of substance use, impulsivity) may actually predict later adjustment when observed during particular developmental periods. To address these gaps, I use a developmental psychopathology framework, including dimensional approaches, multiple levels of analysis, role of context, and transactional

relations between individuals and their environments, to frame the proposed model (Beauchaine, 2003; Drabick & Kendall, 2010; Rutter & Sroufe, 2000; Steinberg & Avenevoli, 2000).

Consistent with research and more linear, variable-based models, it is proposed that adolescents who display elevated internalizing and externalizing behaviors and ER deficits will be likely to experience poor SWB and adaptive functioning in young adulthood. Conversely, adolescents exhibiting lower levels of internalizing and externalizing behaviors and strong ER will be likely to experience good SWB and adaptive functioning in early adulthood. Thus, youth who have problems across domains will experience poor SWB, whereas youth without significant behavioral problems and good ER will exhibit good SWB. However, adopting a more person-centered perspective and in seeking to account for multifinality, parenting behaviors and substance use may moderate or interact with these domains and trajectories to confer differential risk or resilience. Thus, adolescents with varying profiles based on these core dimensions (i.e., internalizing, externalizing, ER) may experience different levels of SWB and adaptive functioning, depending on the salience of each component and contribution of moderating factors.

For example, given that adolescent internalizing and externalizing behaviors are associated with concurrent ER deficits and decreased SWB in adolescence and young adulthood, an adolescent with high internalizing and externalizing behaviors and low ER is at risk for poorer SWB and adaptive functioning in young adulthood, as noted above. However, other developmental factors (e.g., substance use, parenting) interact with youth and their many contexts to influence developmental trajectories. Thus, the adolescent

described above (high internalizing and externalizing behavior and poor ER) who experiences positive parenting behaviors (e.g., warmth, consistency, monitoring) during early adolescence when parental influences are still particularly salient may be buffered against the development of poor SWB and poor adaptive functioning in young adulthood via diminished problem behaviors and/or enhanced ER capacities.

Further, as reviewed, substance use may be conceptualized as a risk or resilience factor depending on the frequency and severity of use and development period, and thereby moderate paths from internalizing and externalizing behavior and ER profiles to young adult SWB and adaptive functioning. For example, youth internalizing and externalizing problems and ER deficits may be exacerbated by high levels of substance use in adolescence, and consequently increase risk for diminished SWB and adaptive functioning beyond risk associated with internalizing and externalizing behaviors and problematic ER alone. Alternatively, youth high in internalizing and externalizing behaviors with poor ER may be protected from the potential negative effects of substance use if parents engage in monitoring and other positive parenting behaviors during early and middle adolescence, making it likely that substance use levels remain within normative levels and are experienced in safe, controlled environments, thus potentially contributing to resilience domains such as positive peer relationships. In this scenario, such youth may not experience the poor SWB and poor adaptive functioning in young adulthood that might otherwise be associated with the risk profile described. Deriving profiles of adolescents characterized by internalizing and externalizing behaviors and ER and examining young adult SWB and adaptive functioning enables investigations of multifinality and equifinality, as one can explore whether particular profiles result in

SWB and adaptive functioning (equifinality) or similar profiles lead to different outcomes (multifinality).

The Current Study

To test this model, the current study examined whether subgroups of youth characterized by the quality and frequency of internalizing and externalizing behaviors and use of ER strategies could be identified and whether these subgroups of youth evidenced distinct young adult outcomes in a prospective model. I used a person-centered approach to discern classes of youth having similar patterns regarding (a) internalizing behaviors (depressed, anxious, withdrawn); (b) externalizing behaviors (hyperactivity, aggressive behaviors, attention problems, delinquent behaviors); and (c) ER. Latent class analysis (LCA) was used to identify unobserved groups (i.e., classes) of youth based on their symptoms and behaviors at developmentally relevant time points (Time 1, ages 10-12 and Time 2, age 16). I then examined whether parenting behaviors, substance use, and later SWB and adaptive functioning (Time 3, age 25) differed among the identified classes, and whether parenting behaviors predicted stability and transition among classes of youth. Specific aims and hypotheses of the current dissertation are outlined below.

Aim 1: To identify groups of youth based on internalizing and externalizing symptoms and emotion regulation. The first aim of the current project was to identify groups of youth at two time points (ages 10-12 and age 16) defined by type and levels of (a) internalizing behaviors, including depressed, anxious, and withdrawn behaviors; (b) externalizing behaviors, including hyperactivity, aggressive behaviors, attention problems, and delinquent behaviors; and (c) ER.

Hypothesis 1. It was expected that multiple classes would be identified by the LCAs during the two time points. Hypotheses regarding classes were formed based on prior literature on the development and co-occurrence of internalizing and externalizing behaviors and ER capacity.

At Time 1 (late childhood), I predicted that four classes of youth would emerge: (a) higher internalizing and externalizing behaviors, and lower ER (i.e., poor ER) (High Int./Ext.+Low ER); (b) higher internalizing and lower externalizing behaviors, and lower ER (High Int./Low Ext.+Low ER); (c) lower internalizing and higher externalizing behaviors, and lower ER (Low Int./High Ext.+Low ER); and (d) lower internalizing and externalizing behavior, and higher ER (i.e., good ER) (Low Sxs.+High ER). This expectation was based on evidence indicating that youth with internalizing and externalizing behaviors generally exhibit deficits in ER, but that differences across behavioral subtypes exist.

Classes at Time 2 were expected to follow similar patterns (i.e., four classes with similar characteristics to those in Time 1) but include different percentages of the sample based on expected developmental changes related to the frequency of internalizing and externalizing symptoms as individuals move from childhood to adolescence. Specifically, given typical increases in depression and some anxiety symptoms in adolescence (Costello et al., 2003), the High Int./Ext.+Low ER and High Int./Low Ext.+Low ER classes were expected to contain larger portions of the sample at Time 2 than Time 1. Further, the Low Int./High Ext.+Low ER class was expected to contain a smaller percentage of the sample at Time 2, given typical decreases in hyperactivity and certain aggressive behaviors such as fighting during adolescence (Loeber, 1982; Mick et al.,

2004). Additionally, ER skills generally improve and become increasingly sophisticated over time (John & Gross, 2004). Therefore, it was expected that mean levels of ER would increase across classes over time for the majority of youth.

Aim 2: To examine stability of class membership for internalizing and externalizing behaviors and emotion regulation classes across two time points. The second aim of the current project was to examine stability and transitions among classes (described above) from Time 1 (ages 10-12) to Time 2 (age 16).

Hypothesis 2. In terms of classes characterized by internalizing and externalizing behaviors and ER, I hypothesized that certain developmental patterns would be relatively stable, whereas others would likely be characterized by a shift in class membership. As reviewed, hyperactivity and aggression show normative decreases over time (Loeber, 1982; Mick et al., 2004). Thus, I expected that children who experience the highest levels of attenuation would move from the Low Int./High Ext.+Low ER class to the Low Sxs.+High ER class. At Time 2, hyperactivity is captured within the “Attention Problems” scale rather than a separate “Hyperactive” subscale as in Time 1. As discussed, antisocial behaviors generally increase as youth progress from early to middle adolescence (Farrell, Sullivan, Esposito, Meyer, & Valois, 2005; Steinberg, 2008). Thus, I hypothesized that children who evidenced increased antisocial behavior would move from the High Int./Low Ext.+Low ER or Low Sxs.+High ER classes to the High Int./Ext.+Low ER or High Ext. + Low Int./ER classes. Overall, I predicted that there would be stability in membership in some groups (e.g., Low Sxs.+High ER class) and also change or transitions in class membership over time based on documented developmental trajectories of internalizing and externalizing behaviors and ER skills.

Aim 3: To examine co-occurring and predictive effects of parenting behaviors on classes characterized by internalizing and externalizing behaviors and emotion regulation skills.

Hypothesis 3a. At Time 1, it was expected that the High Int./Ext.+Low ER class would experience the highest rates of poorer parenting behaviors (i.e., lower acceptance and child centeredness; higher parental psychological control through guilt and anxiety, lax discipline, and nonenforcement of household rules) relative to children in the other classes. The Low Sxs.+High ER class was expected to report the highest rates of positive parenting behaviors (i.e., higher acceptance and child centeredness; lower parental psychological control through guilt and anxiety, lax discipline, and nonenforcement of household rules) compared to the other classes. I predicted that the High Int./Low Ext.+Low ER class would experience the lowest rates of parental acceptance, child centeredness, lax discipline, and nonenforcement of household rules and the highest rates of parental psychological control. The Low Int./High Ext.+Low ER class was expected to experience the lowest rates of parental acceptance, child centeredness, and parental psychological control, and the highest rates of lax discipline and nonenforcement of household rules.

Hypothesis 3b. In terms of the predictive effects of parenting behavior on transition from Time 1 to Time 2 classes, I predicted that lower levels of acceptance and child centeredness would predict transitions to classes characterized by higher levels of internalizing and externalizing behaviors. Further, I expected that higher parental psychological control would predict transition to classes characterized by higher internalizing behaviors, and parental use of lax discipline and nonenforcement of

household rules would predict transition to classes with higher externalizing behaviors. It was hypothesized that greater parental use of acceptance and child-centeredness would predict transitions to classes with stronger ER skills, whereas higher levels of parental use of psychological control would predict transitions to classes with lower levels of ER skills.

Aim 4: To examine whether classes based on internalizing and externalizing behaviors and emotion regulation differ in cross-sectional levels of substance use; and levels of subjective wellbeing, interpersonal, occupational, and educational adaptive functioning, and substance use in early adulthood.

Hypothesis 4. Given low base rates of substance use in childhood, I only considered whether classes differed on substance use levels at Time 2 (age 16) and Time 3 (age 25). At Time 2, I expected that the groups with higher levels of externalizing behavior and lower levels of ER, regardless of internalizing behavior, would have higher levels of substance use relative to classes with lower externalizing behaviors (i.e., High Int./Ext.+Low ER, Low Int./High Ext.+Low ER > High Int./Low Ext.+ Low ER, Low Sxs.+High ER).

In terms of Time 3 (young adult) outcomes, it was hypothesized that the Time 2 Low Sxs.+High ER class of adolescents would display greater overall adaptive functioning and SWB compared to other classes (i.e., Low Sxs.+High ER > Low Int./High Ext.+Low ER, High Int./Low Ext.+Low ER, High Int./Ext. + Low ER). Groups with higher levels of externalizing and/or internalizing behavior, regardless of levels of ER, were expected to display the highest levels of substance use at Time 3, and the class with low symptoms and higher ER were hypothesized to display low to moderate levels

of substance use (Low Int./High Ext.+Low ER, High Int./Low Ext.+Low ER, High Int./Ext.+Low ER > Low Sxs.+High ER).

CHAPTER 2

METHOD

Participants

The current dissertation uses data collected at the Center for Education and Drug Abuse Research (CEDAR) at the University of Pittsburgh as part of a National Institute on Drug Abuse (NIDA)-funded longitudinal study. The CEDAR project has been continuously approved by the University of Pittsburgh's Institutional Review Board (grant number 2 P50 DA05605). The secondary data analyses in this sample were exempt because the analyses involved the study of existing data and the information was recorded by the investigators in such a manner that participants cannot be identified. For these reasons, these analyses met criteria for exemption from review by Temple University's Institutional Review Board.

The CEDAR project aimed to elucidate the etiology of substance use disorders using a longitudinal research design. Assessments began in 1990 and by 2009, 775 families had been recruited. Recruitment and baseline assessments occurred when index children were 10-12 years old (Time 1; $N=775$, 72% male). Follow-up assessments of interest for the current study occurred when index children were 16 years (Time 2; $n=627$, 73% male) and 25 years (Time 3; $n=480$, 71% male).

Time points were chosen to be representative of behavior during early and middle adolescence given that adolescence represents a developmentally important period for the emergence and maintenance of problems with behavior and ER, and provides a critical foundation for trajectories with long-term implications for adult health and SWB (Drabick & Steinberg, 2011). SWB, adaptive functioning, and substance use may look different during the college years, with increased substance use that generally declines

after the college-aged years upon transition into young adulthood (Spear, 2002), as well as varied expectations in domains of adaptive functioning (for example, familial responsibilities may be lower during than after college-aged years). Thus, the young adult time point was chosen to be beyond the college time period for most participants who attended college.

Because the original study was designed to examine the development of substance use disorders, males were purposely oversampled because they are more likely to develop substance use disorders than females. Recruitment of female index children began later than males because of changes in National Institutes of Health (NIH) gender equity regulations after the CEDAR project commenced.

Three groups of male and female children who were at high and low risk for substance use disorders were recruited. Biological fathers (probands) with and without a history of substance use disorders and/or psychiatric diagnoses who had a 10-12 year old child (index child) were recruited through substance use disorder treatment programs, social service agencies, newspaper and radio advertisements, public service announcements, and random digit telephone calls. Utilizing many recruitment strategies decreased the risk of sampling bias (Merikangas et al., 1998). Index children were classified into one of three groups according to their father's lifetime prevalence of mental health disorders: (a) history of substance use disorder, (b) history of other psychiatric diagnosis not including substance use disorder, or (c) no lifetime history of psychiatric diagnosis. Fathers were screened for substance abuse or dependence disorder history using *DSM-III-R* (APA, 1987) criteria, which was the most recent version of the *DSM* when the study began.

The sample is predominantly Caucasian (78%; 18% African-American, 4% other ethnicities). From birth to age 2, 85.2% of the sample was cared for mainly by mothers, 5.0% mainly by fathers, and 9.8% mainly by other relatives, babysitters, or day care. At Time 1 (ages 10-12), 84.4% of the sample lived with both parents, 12.3% resided with mothers, 3.1% resided with fathers, and 0.3% lived with other relatives. At Time 3 (age 25), 79.4% of index cases in the sample had completed partial college, technical, or business school and 41.6% had received a bachelor's or registered nursing degree. Families were excluded from the study on the basis of a history of neurological disorders, schizophrenia, or uncorrectable sensory incapacity in the father; or neurological injury requiring hospitalization, IQ less than 70, chronic physical disability, uncorrectable sensory incapacity, or psychosis in the index child. More extensive recruitment source information and procedures, as well as inclusionary and exclusionary criteria, are described in detail elsewhere (Clark et al., 1997; Tarter & Vanyukov, 2001).

Procedure

Procedures were approved by the University of Pittsburgh Institutional Review Board. Adult participants were provided with informed consent, as well as information about the goals, procedures, risks, and benefits of the research protocol. Of the fathers recruited and meeting criteria to participate, 87% consented. Minor children provided assent. A Certificate of Confidentiality was obtained from NIDA to protect participants. Mothers reported on child internalizing and externalizing behaviors and ER at Time 1. Index children reported on caregivers' parenting behaviors at Time 1, their own ER at Time 2, their substance use at Times 2 and 3, their internalizing and externalizing behaviors at Time 2, and their SWB and adaptive functioning at Time 3.

Measures

Internalizing and externalizing behaviors. At Time 1, mothers reported on their children's internalizing and externalizing behaviors using the Child Behavior Checklist (CBCL; Achenbach & Edelbrock, 1983). The CBCL is a widely used and well-validated instrument and has been shown to converge with and predict data derived from structured diagnostic interviews (e.g., Petty et al., 2008). The subscales of interest for the current study were as follows: Schizoid/Anxious, Depressed, Social Withdrawal, Hyperactivity, Aggressive Behaviors, and Delinquent Behaviors. T-scores were derived based on data from a normative sample, and higher scores on these measures indicate greater problems. The distribution of data from these CBCL variables was skewed, indicating the presence of outliers. Therefore, I recoded the data so that all T-scores above 70 were recoded to equal 70 (98th percentile).

At Time 2, index children reported on their own internalizing and externalizing behaviors using the Youth Self-Report (YSR; Achenbach, 1991), a complementary version of the CBCL. Like the CBCL, the YSR is a well-validated and extensively used instrument for assessing a range of youth symptoms, and has also demonstrated reliability and validity as a diagnostic tool to identify psychopathology among youth (Doyle, Mick & Biederman, 2007). The subscales of interest for the current study were as follows: Anxious/Depressed, Withdrawn, Attention Problems, Aggressive Behaviors, and Delinquent Behaviors. Because of skewed data distribution indicating outliers, YSR data were recoded using the method described above.

Emotion regulation. Parents and index children reported on children's ER at Times 1 and 2, respectively, using the Revised Dimensions of Temperament Survey

(DOTS-R; Windle, 1992). The Mood Quality subscale (7 items, mother-report $\alpha = .76$, child-report $\alpha = .86$) was used as an index of ER, consistent with prior research in the present sample (Giancola, 2000). Several studies have determined that the DOTS-R is reliable and valid (Carson, Council, & Volk, 1989; Windle, 1989, 1991). Mothers rated items on a four-point scale from 1 (*usually false*) to 4 (*usually true*). Items were summed and multiplied by a constant (3) to put them in a similar range with the other variables included in the LCA. Higher scores indicate higher levels of temperamental positive mood and lower scores indicate higher levels of negative mood. Based on previous research in this sample (Mezzich et al., 2007), ER was indexed by the sum of endorsed responses on this subscale. The DOTS-R has high reliability and stability, moderate-to-high inter-rater agreement, and good predictive validity with internalizing and externalizing problems (Chang et al., 2003; Masi et al., 2003), as well as substance use disorders in the present sample (Giancola & Mezzich, 2003). Further, the mood quality subscale has demonstrated moderate stability, with no statistically significant changes, across a six-year period during adolescence to early adulthood (Windle & Windle, 2006).

Parenting behaviors. Index children reported on their parents' parenting behaviors at Time 1 using the Children's Report of Parental Behavior Inventory (CRPBI; Schaefer, 1965; Schludermann & Schludermann, 1970). Children responded to questions about how their parents act toward them on a scale from 1 (*Very True*) to 3 (*Not at all True*). The 162-item measure used in the current study yields three factors: acceptance/rejection, psychological autonomy/psychological control, and firm control/lax control. The factors break down into the six subscales (with sample items) used in the current study: Acceptance (16 items; father $\alpha = .91$, mother $\alpha = .90$; "My mother seems to

see my good points more than my faults”); Child Centeredness (8 items; father $\alpha = .79$, mother $\alpha = .75$; “My father likes to talk to me and be with me much of the time”); Control through Guilt (8 items; father $\alpha = .77$, mother $\alpha = .77$; “My mother says if I loved her, I’d do what she wants me to do”); Control through Anxiety (8 items; father $\alpha = .77$, mother $\alpha = .76$; “My father says that someday I’ll be sorry that I wasn’t better as a child”); Lax Discipline (8 items; father $\alpha = .55$, mother $\alpha = .54$; “My father lets me get away without doing work I am supposed to do”); and Non-Enforcement of Rules (8 items; father $\alpha = .64$, mother $\alpha = .61$; “My father lets me stay up late if I keep asking”). Separate scores were derived for maternal and paternal behavior. The CRPBI has demonstrated good internal consistency, validity, and reliability (Margolies & Weintraub, 1977; Safford, Alloy, & Pieracci, 2007; Schludermann & Schludermann, 1970). The CRPBI has significant relations with both internalizing and externalizing disorders, as well as temperament (Bogels, 2004; Lengua, 2006).

Substance use. At Times 2 and 3, index participants reported on their alcohol and drug use over the past month using the substance use domain scores of the Drug Use Screening Inventory (DUSI; Tarter, Mezzich, Kirisci, & Kaczynski, 1994). Participants rated their use on a scale from 0 (*0 times*) to 4 (*more than 20 times*) for each of 19 different substances. Ratings were collapsed into 4 categories: alcohol, tobacco (smoking and/or chewing), marijuana, and “hard” drugs (e.g., ecstasy, hallucinogens, heroin, methadone, prescription pain killer pills, barbiturates, inhalants, amphetamine, and cocaine). Because of its skewed distribution, the hard drug category was dichotomized. Participant data were recoded to indicate “yes” or “no” as to whether they had used a hard drug in the past month. Among the present sample, scores from the DUSI-R

distinguish among those at risk for conduct problems and substance use disorders (Kirisici, Tarter, Mezzich, & Reynolds, 2008).

Adaptive functioning. Index young adults reported on adaptive functioning in a variety of domains (i.e., family, job, spouse/partner, and friends) at Time 3 using the competence scales from the Young Adult Self-Report (YASR; Achenbach, 1997) or the Adult Self-Report (ASR; Achenbach, 2003). Both forms are parallel measures to the CBCL and YSR. During the course of data collection, the YASR was updated to become the ASR. Thus, 55% of the sample received the YASR, and 45% of the sample received the ASR. Both forms demonstrate good reliability and validity (Achenbach, 1997; Achenbach & Rescorla, 2003) and their competence scales have been used as measures of adaptive functioning in a number of studies of young adults (e.g., Barkley, Fischer, Smallish, & Fletcher, 2006; Shiner, Masten, & Roberts, 2003; Stavro, Ettenhofer, & Nigg, 2007). The family subscale contains 3 items (e.g., “How well do you get along with your brothers and sisters?”) rated on a scale from 0 (*worse than others*) to 2 (*better than others*). The friends subscale contains 4 items (e.g., “How well do you get along with your close friends?”) rated on a scale from 0 (*not well*) to 2 (*very well*) or, for questions pertaining to quantity of friends or frequency of contact with friends (e.g., “About how many times a month do you have contact with any of your close friends? (including in-person contact, phone, letters, email)”), 0 (*less than 1*) to 2 (*3 or more*). Seven items comprise the job subscale (e.g., “I have trouble getting along with bosses,” “I do my work well”). The spouse/partner subscale contains 7 items (e.g., “My spouse or partner and I have trouble sharing responsibilities,” “I feel satisfied with my spouse or partner”). This subscale was administered only when applicable. The job and spouse/partner

domains are rated on a scale from 0 (*not true*) to 2 (*very true or often true*). A T-score was derived for each domain based on a normative sample using the Achenbach computer scoring system. Lower scores indicate poorer functioning. Index young adults also self-reported their highest level of education achieved at Time 3.

Subjective wellbeing. Index young adults reported on SWB at Time 3 using the Wellbeing subscale of the Multidimensional Personality Questionnaire (MPQ; Tellegen, 1999), which asks participants to rate 300 statements as *True* (1) or *False* (0) about themselves. The MPQ has demonstrated convergent and discriminant validity (Patrick, Curtin, & Tellegen, 2002), and its Wellbeing subscale has been used to index SWB in prior research (e.g., Lykken & Tellegen, 1996). There have been alternate conceptualizations of this subscale, with some authors describing it as indexing positive emotional disposition (Patrick et al., 2002) and others describing it as indexing the broader construct of SWB, a tendency to feel good about oneself and one's place in the world (Lykken & Tellegen, 1996). Items address both life satisfaction and positive emotionality. The Wellbeing subscale (referred to as SWB for clarity) contains 24 items ($\alpha = .90$) including "It is easy for me to become enthusiastic about things I am doing," "I live a very interesting life," and "Most days I have moments of real fun or joy." Items are summed and higher scores indicate greater SWB.

Socioeconomic status. Household socioeconomic status (SES), an objective index of wellbeing, was indexed using Hollingshead ratings (Hollingshead, 1975). SES has demonstrated associations with parenting strategies, given that limited economic resources are associated with family stress and parenting difficulties (Campbell et al.,

2000; Hoff, Laursen, & Tardif, 2002). Given the association between SES and several of the study variables, SES was considered as a covariate in analyses.

Statistical Analyses

Consistent with the aims of the current study, analyses sought to identify classes of youth based on internalizing and externalizing symptoms and ER at ages 10-12 and age 16, as well as examine transitions among classes over time. Further, analyses examined whether classes differed in cross-sectional levels of substance use and parenting behaviors, as well as levels of subjective wellbeing; interpersonal, occupational, and educational adaptive functioning; and substance use in early adulthood (age 25).

Preliminary analyses were conducted using SPSS Version 21. Descriptive analyses and correlation matrices were completed to determine whether distributions were appropriate for the proposed analyses, and to identify any potential issues with multicollinearity among variables. Primary analyses were conducted using Mplus 7.11 (Muthén & Muthén, 1998-2014) statistical software. To address missing data, Mplus uses Full-Information Maximum Likelihood (FIML) estimation, which conducts parameter estimation and estimates standard errors using all available data (Graham, 2009). FIML does not estimate the missing data, as would be the case with mean- or regression-based imputation techniques; instead, it fits the covariance structure model directly to the observed (and available) raw data for each participant (Enders, 2001). This approach allows for maintenance of participants with missing data in model estimation and yields smaller errors in parameter estimates and standard errors relative to other strategies for addressing missing data (Enders, 2001; Graham, 2009; Newman, 2003). FIML assumes

that the missing data are either missing completely at random (MCAR) or missing at random (MAR).

Aim 1: To identify groups of youth based on internalizing and externalizing symptoms and emotion regulation.

Latent class analysis. To address the first goal, LCA was conducted using Mplus. LCA (Muthén & Muthén, 2000) empirically derives groups of individuals based on the aggregation of observed items. LCA is a person-centered data analytic approach for identifying unmeasured class membership among participants using categorical and/or continuous observed variables, capturing unobserved heterogeneity in outcomes (Heinen, 1996; McCutcheon, 2002). LCA was used to estimate models examining subgroups of children with varying levels of internalizing and externalizing behaviors and ER at Times 1 and 2. LCA refers to these groups of individuals as latent categorical classes. Each latent class (e.g., high on internalizing and externalizing problem scales and low on ER) describes the relations among observed items (i.e., frequency of endorsed items on the internalizing and externalizing and ER subscales). Using a dimensional approach to observed items is more effective than alternative classifications such as those using cut-off scores (Nylund, Bellmore, Nishina, & Graham, 2007b). Cut-off scores and categorical approaches do not account for symptom levels that do not reach clinical threshold or significance, but are nonetheless impairing among youth (Angold et al., 1999; Drabick, 2009). This dimensional method also reduces classification errors resulting in false positives or negatives, decreased ability to predict differences in outcomes, difficulties in identifying and generalizing rates of behavior, and decreased validity for identifying youth who potentially may benefit from prevention and intervention efforts (Angold et

al., 1999; Drabick & Kendall, 2010). Thus, LCA is an appropriate approach for identifying subgroups of youth who differ on internalizing and externalizing behaviors and ER, given that levels likely will vary in frequency and quality across classes and developmental periods.

LCA uses both statistical indices and conceptual or practical implications in selection of the best-fitting model (Nylund, Asparouhov, & Muthén, 2007a). The 1-class model, which is the independence model based on the observed means in the data, is fit first (Nylund et al., 2007a). Next, the number of classes incrementally increases, one class at a time, until the models no longer converge and/or no longer are conceptually sound. The fit of each model to the data is determined by model fit parameters, with an emphasis on model parsimony. Each model is compared to the model with one fewer class (Nylund et al., 2007a).

Statistical fit indices were used to assess the model fit and to determine the number of classes at each time point. Given that there is no “gold standard” for determining the model that best fits the data, several statistical indices were considered in determining model selection. The Bootstrap Likelihood Ratio Test (BLRT; Nylund, et al., 2007a) estimates the log likelihood differences and compares the fit of the model with k classes to the model with $k-1$ classes to evaluate if adding an additional class significantly improves model fit. This method of bootstrapping for LCA models has been demonstrated to be an accurate indicator of the true number of classes. The Akaike Information Criterion (AIC; Akaike, 1987); Bayesian Information Criterion (BIC; Schwartz, 1978); and sample-size Adjusted BIC (ABIC; Sclove, 1987) are other frequently used indices and the model that yields the smallest values on these indices

indicates the best-fitting model (Nylund et al., 2007a). Although often considered, the AIC is less consistent as an index of model fit for LCAs (Yang, 2006), whereas the BLRT and BIC indices are the most reliable indicators of model fit in LCA (Nylund et al., 2007a). However, it also is important to consider conceptual information about the model when determining the best fit with the BIC index. For instance, the BIC value may decrease with each additional class, though the decrements with each additional class may become relatively small and the classes may no longer be conceptually meaningful.

Model selection is also based on substantive theory and the conceptual model underpinning the analyses, as well as smallest class size. Very small class sizes (e.g., < 5% of sample) would suggest possible over-fitting of the data and lower likelihood of replicating the model (Nylund et al., 2007a). In addition, posterior class probabilities are estimated, which are an index of the individual's probability of belonging to each class of the fitted model, given the individual's observed response pattern for internalizing and externalizing scales and ER. Last, the utility of the classes can be assessed using entropy, which measures the degree to which the latent classes are distinguishable and the precision with which individuals are placed into classes. Entropy ranges from 0 to 1, with higher values indicating clearer class separation, and is based on individual estimated posterior class probabilities (Masyn, Henderson, & Greenbaum, 2010).

Auxiliary analyses examined whether classes differed on demographic variables (age, sex, and SES) at Times 1 and 2. Omnibus equality of means tests examined differences in means. For any significant omnibus tests, pairwise comparisons were considered to identify significant differences among the classes.

Aim 2: To examine stability of class membership for internalizing and externalizing behaviors and emotion regulation classes across two time points.

Latent transition analysis. Latent transition analysis (LTA; Clogg, 1995) was used to examine developmental patterns of internalizing and externalizing behaviors and ER between late childhood and middle adolescence. LTA examines change in latent class membership of individuals over time (e.g., change from a low internalizing and externalizing and high ER class to a moderate internalizing, low externalizing, and moderate ER class; Nylund, 2007). LTA models provide transition probabilities, which are conditional probabilities describing the likelihood of class membership at time = t , conditional on the state at time = $t - 1$ (Cosden, Larsen, Donahue, & Nylund-Gibson, 2015).

To conduct the LTA, the best-fitting LCA model for each time point first was used as a measurement model (Nylund, 2007). Next, autoregressive models were conducted using the measurement models from the LCAs at both time points to assess transitions or continuity in classes over time. Thus, individuals were assigned to a class (i.e., modal class assignment) based on the LCA at both time points; subsequently, cross-tabulation of transitions from classes were examined. Then, autoregressive models were used to examine developmental transitions of individuals based on severity and type of internalizing and externalizing behaviors and ER capacity from Time 1 to Time 2.

Aim 3: To examine co-occurring and predictive effects of parenting behaviors on classes characterized by internalizing and externalizing behaviors and emotion regulation skills.

Tests of equality of means. Tests of equality of means across classes were conducted to determine whether classes identified by the LCAs at Times 1 and 2 differed in levels (frequencies) of parenting behaviors. The test of equality of means holds class membership constant and weights individuals based on their posterior probabilities. This test provides chi-square statistics for omnibus analyses and pairwise comparisons across classes. Pairwise comparisons were examined only if the omnibus tests were significant.

Prediction of transitions. Parenting behaviors also were examined as predictors of transitions from Time 1 to Time 2 classes. Specifically, I considered transition probabilities from Time 1 to Time 2 for low and high levels of the parenting variables. Youth were divided into low and high levels of parenting predictors using a median split within the current sample for these variables because of the (a) range of the variables in the present sample and (b) lack of gold standard cut-offs for these measures that could inform which cut-points to use to determine high and low levels of these predictors. The median split also allows the full sample to be maintained in these analyses and preserves power. This is a benefit for person-centered analyses given the likelihood of identifying classes with varying sizes and profiles. Alternate approaches such as using cut-offs of 1 *SD* above and below the mean for each parenting behavior were considered; however, I chose not to use this method because it would have led to a reduction in participants given the skewed distributions of the parenting behavior variables. Transition probabilities from Time 1 to Time 2 were examined to determine whether youth

remained stable or transitioned to other classes based on whether youth were low or high on predictors. For example, probabilities were examined among youth low and high on a particular parenting subscale (e.g., acceptance) to determine whether these youth remained in a class with a similar profile at Time 2 or transitioned to a class with a different symptom or ER profile.

Aim 4: To examine whether classes based on internalizing and externalizing behaviors and emotion regulation differ in cross-sectional levels of substance use; and levels of subjective wellbeing, interpersonal, occupational, and educational adaptive functioning, and substance use in early adulthood.

Tests of equality of means. To test the predictive validity of the identified classes, I used tests of equality of means and compared levels of substance use across the identified latent classes at Times 1 and 2 to determine whether and to what extent classes differ regarding concurrent (Time 2) and future (Times 2 and 3) substance use frequency. As noted above, the test of equality of means holds class membership constant and weights individuals based on their respective posterior probabilities. These analyses provide chi-square statistics for omnibus and pairwise comparisons across latent classes; pairwise comparisons were examined only if the omnibus tests were significant. Similarly, tests of equality of means across the identified latent classes at Times 1 and 2 were conducted to determine whether and to what extent classes differed regarding SWB and adaptive functioning (in family, job, spouse/partner, friends, and highest level of education achieved) at Time 3.

CHAPTER 3

RESULTS

Descriptive Statistics

Continuous study variables were correlated in expected directions (see Table 1). Most correlations among variables derived from separate measures were small in magnitude. For example, Time 1 SES was negatively correlated with internalizing and externalizing behaviors at Time 1, and delinquent behaviors at Time 2. Bivariate correlations indicated continuity in internalizing and externalizing behaviors from Time 1 to Time 2 (e.g., Time 1 Delinquent Behavior with Time 2 Delinquent Behavior). ER and parenting behaviors were correlated in expected directions with internalizing and behaviors symptoms across Times 1 and 2 (Table 1). For example, ER at Time 1 was negatively correlated with anxious, depressed, socially withdrawn, aggressive, hyperactive, and delinquent behaviors. Externalizing behaviors at Time 1 were positively associated with alcohol, tobacco, and marijuana use at Time 2 and tobacco and hard drug use at Time 3. Educational attainment by Time 3 was negatively correlated with most internalizing and externalizing behaviors at Time 1, but only delinquent behaviors at Time 2. Adaptive functioning in the friends, family, and job domains at Time 3 was positively correlated with ER at Time 2. Marijuana and tobacco use at Time 2 and marijuana and hard drug use at Time 3 were negatively correlated with adaptive functioning in the job and spouse domains.

Table 1.
Bivariate Correlations Among Continuous Study Variables.

Variable	1	2	3	4	5	6	7	8	9	10
1. T1 Age	-									
2. T1 SES	.07	-								
3. T2 SES	.03	.77**	-							
4. Sc/Anx T1	.00	-.06	-.07	-						
5. Dep T1	.00	-.12**	-.09	.48**	-					
6. SocW T1	-.01	-.14**	-.09	.35**	.54**	-				
7. Hyp T1	.08	-.16**	-.12**	.32**	.50**	.61**	-			
8. Agg T1	.03	-.15**	-.12**	.31**	.55**	.49**	.66**	-		
9. Del T1	-.05	-.22**	-.16**	.18**	.37**	.39**	.60**	.66**	-	
10. With T2	-.01	-.02	-.05	.14**	.15**	.17**	.06	.09**	.04	-
11. An/De T2	.03	-.02	-.05	.11**	.17**	.13**	.09*	.15**	.11**	.64**
12. Att T2	.03	-.05	-.06	.10*	.12*	.12*	.17**	.22**	.19**	.43**
13. Del T2	.09*	-.14**	-.12**	-.01	.11*	.11*	.17**	.27**	.27**	.28**
14. Agg T2	.04	-.05	-.05	.06	.15**	.13*	.21**	.31**	.26**	.29**
15. ER T1	-.01	.12**	.10*	-.16**	-.37**	-.21**	-.20**	-.24**	-.20**	-.06
16. ER T2	-.04	.14**	.10*	-.07	-.17**	-.14**	-.22**	-.20**	-.20**	-.33**
17. F Acc	-.06	.12**	.11**	-.02	-.11*	-.14**	-.14**	-.22**	-.19**	-.13**
18. F Chi Cen	-.06	-.01	.01	-.05	-.09*	-.14**	-.11**	-.17**	-.13**	-.11**
19. F Guilt	-.14**	-.17**	-.15**	.04	.08	.09	.14**	.11**	.18**	.01
20. F Anx	-.08*	-.23**	-.24**	.02	-.01	.09	.16**	.14**	.21**	.03
21. F Lax Disc	.05	-.01	-.02	-.05	.04	-.05	.04	.04	-.02	.06
22. F Nonenf	.02	-.06	-.03	-.06	.02	-.06	.07	.00	.00	-.04
23. M Acc	-.09*	.09	.09	.02	-.11*	-.07	-.09*	-.20**	-.16**	-.09*
24. M Chi Cen	-.08*	-.08*	-.06	.00	-.04	-.04	-.03	-.09*	-.04	-.03
25. M Guilt	-.13**	-.17**	-.17**	.07	.10*	.12*	.15**	.16**	.21**	.01
26. M Anx	-.07	-.24**	-.26**	.01	.03	.07	.20**	.18**	.24**	.01
27. M Lax Disc	.05	.00	-.03	-.06	.00	-.01	.03	.00	-.02	.06
28. M Nonenf	-.01	-.09*	-.10*	-.03	.02	.03	.05	.03	.02	.02
29. Job T3	.02	.04	.00	-.12*	-.09	-.21**	-.14**	-.13*	-.09	-.11*
30. Friends T3	-.01	.13**	.14**	-.07	-.08	-.12*	-.06	-.03	-.07	-.12*
31. Family T3	-.03	.05	.10*	-.02	-.10	-.08	-.05	-.06	-.09*	-.09
32. Spouse T3	.10	.15*	.15	-.05	-.01	-.10	-.05	-.12	-.12	-.06
33. Educ T3	.00	.38**	.38*	-.09*	-.08	-.11*	-.15**	-.15**	-.23**	-.03
34. SWB T3	.02	.19**	.20**	.03	-.14**	-.14*	-.03	-.07	-.10*	-.23**

35. Alc T2	.12**	-.05	-.04	-.03	.04	.00	.09*	.10*	.10*	.03
36. Marij T2	.11**	-.13**	-.11**	-.02	.09	.03	.13**	.16**	.19*	.09*
37. Tobacco T2	.12**	-.08	-.12**	-.01	.06	.05	.16**	.16**	.23**	.05
38. Drugs T2	.05	-.10*	-.02	.02	.03	.03	.01	.04	-.01	.11**
39. Alc T3	-.02	.09	.10*	-.07	-.09	-.06	.03	.03	.06	-.07
40. Marij T3	-.05	-.10*	-.12*	-.02	-.03	.00	.06	.07	.18**	.00
41. Tobacco T3	.01	-.08	-.06	-.06	.06	.13	.13*	.13**	.20**	.00
42. Drugs T3	.02	-.03	-.13*	.13**	.11*	.11	.18**	.17**	.15**	.12*
Mean	11.42	41.69	42.19	56.83	56.82	57.40	57.37	56.77	58.23	52.42
SD	.92	13.74	14.29	3.70	3.74	4.55	4.32	3.83	4.39	4.82

Table 1. (continued)

Bivariate Correlations Among Continuous Study Variables

Variable	11	12	13	14	15	16	17	18	19	20	21
12. Att T2	.57**	-									
13. Del T2	.32**	.44**	-								
14. Agg T2	.42**	.61**	.52**	-							
15. ER T1	-.05	-.03	-.14**	-.06	-						
16. ER T2	-.34**	-.25**	-.22**	-.16**	.14**	-					
17. F Acc	-.13**	-.14**	-.22**	-.13**	.14**	.15**	-				
18. F Chi Cen	-.10*	-.09*	-.16**	-.11*	.11**	.12**	.79**	-			
19. F Guilt	.09*	.12**	.08	.09*	-.12**	-.08*	.04	.14**	-		
20. F Anx	.10*	.12**	.14**	.10*	-.09*	-.16**	-.12**	.04**	.66**	-	
21. F Lax Disc	.00	-.01	.09*	.00	.01	-.08	-.28**	-.23**	.10**	-.11**	-
22. F Nonenf	-.05	.02	.05	.01	.02	-.01	.22**	.29**	.16**	.07	.43**
23. M Acc	-.10*	-.06	-.20**	-.07	.13**	.17**	.77**	.60**	.02	-.07	-.33**
24. M Chi Cen	-.04	.00	-.11**	-.03	.09*	.09*	.54**	.73**	.12**	.10**	-.24**
25. M Guilt	.12**	.15**	.08*	.13**	-.11**	-.08*	-.06	.04	.91**	.64**	-.07
26. M Anx	.08	.11*	.15**	.10*	-.09*	-.16**	-.13**	.05	.63*	.91**	-.03
27. M Lax Disc	.03	.02	.11*	.04	-.02	-.07	-.32**	-.24**	-.08*	-.02	.75**
28. M Nonenf	.04	.09*	.13**	.08*	-.03	-.03	.01	.10**	.12**	.20**	.29**
29. Job T3	-.15**	-.18**	-.19**	-.08	.06	.14**	.23**	.15**	-.03	-.10*	-.16**
30. Friends T3	-.03	.00	-.05	.10	.11*	.22**	.15**	.09	-.13**	-.15**	-.05
31. Family T3	-.18**	-.05	-.13**	-.05	.16**	.14**	.18**	.13**	-.08	-.05	-.06
32. Spouse T3	-.08	-.16*	-.22**	-.10	.06	.12	.04	.06	-.12	-.16*	.04
33. Education T3	-.03	-.08	-.19**	-.04	.08	.20**	.18**	.08	-.12*	-.23**	-.04
34. SWB T3	-.26**	-.18**	-.20**	-.07	.11*	.32**	.21**	.15**	-.07	-.09	-.08
35. Alc T2	.07	.12**	.40*	.15**	-.05	.09*	-.11*	-.07	.00	.04	.05
36. Marij T2	.11**	.15**	.52**	.19**	-.10*	-.14**	-.18**	-.12**	.09*	.12**	.13**
37. Tobacco T2	.10*	.19**	.45**	.21**	-.03	-.16**	-.12**	-.07	.01	.07	.07
38. Drugs T2	.10*	.09*	.24**	.12**	-.03	-.10*	-.05	-.02	.11**	.07	.03
39. Alc T3	.01	.07	.13**	.10	.02	.06	-.02	.00	.04	.04	-.02
40. Marij T3	.05	.11*	.20**	.10*	-.10*	-.02	-.13**	-.07	.13**	.19**	-.05
41. Tobacco T3	.07	.14**	.30**	.14**	-.09	-.05	-.08	-.01	.13**	.16**	-.05
42. Drugs T3	.13**	.16**	.34**	.21**	-.12*	-.03	-.05	-.04	.11*	.13**	-.01
Mean	52.32	52.71	54.98	52.91	75.86	71.79	40.82	19.05	13.90	13.33	12.15
SD	4.76	5.02	6.47	5.30	9.44	11.80	6.11	3.14	3.47	3.49	2.42

Table 1. (continued)

Bivariate Correlations Among Continuous Study Variables

Variable	22	23	24	25	26	27	28	29	30	31	32
23. M Acc	.06	-									
24. M Chi Cen	.14**	.74**	-								
25. M Guilt	.12**	-.01	.12**	-							
26. M Anx	.14**	-.10**	.10*	.66*	-						
27. M Lax Disc	.29**	-.33**	-.24**	-.07	-.06	-					
28. M Nonenf	.65**	.12**	.22**	.19**	.16**	.45**	-				
29. Job T3	.01	.17**	.05	-.12*	-.13*	-.09	-.09	-			
30. Friends T3	-.02	.12	.05	-.11*	-.12*	-.08	-.09	.21**	-		
31. Family T3	.05	.17**	.11*	-.08	-.06	-.08	-.02	.11*	.17**	-	
32. Spouse T3	.09	.10	.07	-.12	-.14	.07	.05	.42**	.09	.02	-
33. Education T3	.00	.18**	.03	-.14**	-.25*	-.03	-.08	.17**	.23**	.07	.29**
34. SWB T3	.06	.19**	.06	-.10*	-.08	-.05	-.01	.36**	.27**	.26**	.41**
35. Alc T2	.02	-.11**	-.10	-.02	.03	.04	.01	-.11*	-.01	-.06	-.09
36. Marij T2	.04	-.21**	-.17**	.06	.12**	.13**	.08	-.18**	-.04	-.06	-.17*
37. Tobacco T2	.05	-.15**	-.09*	.02	.09*	.10*	.04	-.12*	.00	-.01	-.31**
38. Drugs T2	.02	-.03	-.03	.09*	.06	.02	.01	-.07	-.11*	.01	-.09
39. Alc T3	-.02	.00	.00	.03	.02	-.05	.02	-.03	.12*	-.03	-.12
40. Marij T3	-.04	-.10	-.02	.14**	.20**	-.07	.04	-.19**	-.02	-.01	-.39**
41. Tobacco T3	.08	-.06	.02	.14**	.17**	-.02	.10*	-.09	.03	-.01	-.37**
42. Drugs T3	.04	-.10*	-.05	.09	.12*	.01	.05	-.18**	-.11*	-.04	-.46**
Mean	14.19	41.94	19.75	14.25	13.51	11.91	14.48	48.62	49.44	49.04	49.12
SD	2.72	5.44	2.84	3.53	3.47	2.33	2.61	8.35	6.97	7.76	8.55

Table 1. (continued)

Bivariate Correlations Among Continuous Study Variables

Variable	33	34	35	36	37	38	39	40	41	42
34. SWB T3	.27**	-								
35. Alc T2	-.12*	-.14**	-							
36. Marij T2	-.19**	-.23**	.62**	-						
37. Tobacco T2	-.18**	-.19**	.46**	.48**	-					
38. Drugs T2	.04	-.15**	.26**	.28**	.16**	-				
39. Alc T3	.01	-.01	.25**	.19**	.15**	.04	-			
40. Marij T3	-.26**	-.16**	.24**	.31**	.23**	.03	.24**	-		
41. Tobacco T3	-.27**	-.12*	.26**	.26**	.44**	.12*	.27**	.36**	-	
42. Drugs T3	-.21**	-.20**	.33**	.33**	.31**	.19**	.14**	.31**	.36**	-
Mean	4.82	17.75	.42	.44	.40	.01	1.73	.91	.80	.04
SD	1.66	5.61	.75	.99	.85	.04	1.08	.42	.98	.12

Note. SES = socioeconomic status; T1 = Time 1 (ages 10-12), T2 = Time 2 (age 16), T3 = Time 3 (age 25); Sc/Anx = CBCL Schizoid/Anxious, Dep = CBCL Depressed, SocW = CBCL Social Withdrawal, Hyp = CBCL Hyperactivity, Agg = CBCL/YSR Aggressive Behaviors, Del = CBCL/YSR Delinquent Behaviors, With = YSR Withdrawn, An/De = CBCL Anxious/Depressed, Att = CBCL Attention Problems; ER = emotion regulation; F = Father, M = Mother, Accept = parental acceptance of child at Time 1, Chi Cen = parental child-centeredness at Time 1, Guilt = parental use of guilt to control child at Time 1, Anx = parental use of anxiety to control child at Time 1, Lax Disc = parental lax discipline at Time 1, Nonenf = parental nonenforcement of rules at Time 1; Educ = highest level of education obtained at Time 3; SWB = subjective wellbeing; Alc = alcohol use past month, Marij = marijuana use past month, Tobacco = tobacco use past month, Drugs = hard drug use past month

* $p < .05$; ** $p < .01$; *** $p < .001$.

Aim 1: Identification of Classes across Times 1 and 2

At Times 1 and 2, cross-sectional LCA models of internalizing and externalizing behaviors and ER were run by first testing a one-class model (i.e., the independence model) and then exploring models with more classes. For each of the LCA models at Times 1 and 2, Tables 2 and 3, respectively, describe fit information (i.e., log likelihood ratio, AIC, BIC, ABIC, *p* value for the BLRT, entropy, smallest class size) for LCA models with one through five classes. Row 1 contains the fit indices for a one-class model, row 2 for a two-class model, and so on. As previously noted, the BLRT and BIC indices provide the most reliable indicators of model fit (Nylund et al., 2007a), so these indices primarily were considered in determining which model best fit the data. In addition, for each LCA model, the class means for each symptom category and ER are displayed in Figures 1 and 2. Finally, relations with demographic covariates are reported in the text to further describe classes for each LCA model.

LCA at Time 1. Examining results for the LCA model at Time 1 (Table 2), the BIC is continuing to decrease in the four-class model and thus indicates that the four-class model fits the data best. Other indices continue to indicate a better fitting model with each additional class (i.e., log likelihood, AIC, ABIC, BLRT); however, the five-class model did not reveal substantively distinct or meaningful classes. Further, the two smallest class sizes in the five-class model included only 3.5% and 4.0% of the sample, respectively, suggesting possible over-fitting of the data. The four-class model had adequate delineation of classes as indicated by excellent entropy (.938). Posterior class probabilities ranged from .921 to .994, indicating that a high percentage of youth were placed into a class that reflected their respective levels of internalizing and externalizing

behaviors and ER. The smallest class size (6.8%, $n = 52$) was both reasonable in size and conceptually meaningful. In sum, multiple fit indices and parameters indicate that the four-class model best fits the data at Time 1.

Table 2.
Class Model Comparison at Ages 10-12

Class- es	Free para- meters	Log likelihood	AIC	BIC	ABIC	BLRT	Entropy	Smallest Class Size n (%)
1	14	-13796.95	27621.89	27686.87	27642.41	N/A ^a	1	766 (100%)
2	22	-12900.31	25844.62	25946.72	25876.86	0.000	0.946	112 (14.6%)
3	30	-12535.36	25130.72	25269.96	25174.70	0.000	0.966	52 (6.8%)
4	38	-12363.34	24802.67	24979.04	24858.37	0.000	0.938	52 (6.8%)
5	46	-12236.53	24565.06	24778.55	24632.48	0.000	0.941	27 (3.5%)

Note. AIC = Akaike Information Criterion; BIC = Bayesian Information Criterion, ABIC=Adjusted BIC; BLRT = Bootstrap Likelihood Ratio Test.

^aBLRT is not available for the one-class model.

Given the mean symptom category T-scores and ER summary scores for each class at Time 1 (see Figure 1), the four classes were distinguished by (1) low levels of all internalizing (schizoid/anxious, depressed, social withdrawal) and externalizing (hyperactive, aggressive, and delinquent) behaviors and high ER (labeled the Low Sxs.+High ER class); (2) low internalizing, moderate externalizing, and high ER (labeled the Low Int./Mod. Ext.+High ER class); (3) moderate internalizing, high externalizing, and low ER (labeled the Mod. Int./High Ext.+Low ER class); and (4) high social withdrawal and moderate hyperactivity, but otherwise low symptoms and moderate ER (labeled the Withdrawn+Mod. ER class). Consistent with (though less conservative than) the designations for clinical cut-offs associated with the CBCL and developmentally relevant versions (e.g., Achenbach, 1991), T-scores were interpreted for the present

dissertation as follows: below 60 (84th percentile) were considered low, 60-64.99 (84th-93rd percentiles) were considered moderate, and 65-70 (93rd-98th percentiles) were considered high. Although the Achenbach system (e.g., Achenbach, 1991) considers T-scores of 65-69.99 as borderline clinical and above 70 as clinical, I adopted a less conservative approach for describing classes because it allowed for more sensitive observation of developmental changes and individual differences among a non-clinical sample.

The Low Sxs.+High ER class (79.6%) included youth with levels of both internalizing and externalizing symptoms that were below the 84th percentile (T-score of 60). Youth in this class also had above average ER skills ($M = 77.26$) compared to the current sample mean. The Low Int./Mod. Ext.+High ER class (9.1%) did not exhibit clinically significant internalizing symptoms (schizoid/anxious and depressed), but exhibited externalizing symptoms (hyperactive, aggressive, and delinquent) and social withdrawal that fell in the moderate range (84th-93rd percentiles), suggesting that these symptoms may be associated with impairment among members of this class (e.g., Angold et al., 1999), although they exhibited relatively high levels of ER compared to the sample mean (.14 *SDs* below current sample mean). The Mod. Int./High Ext.+Low ER class (6.8%) demonstrated internalizing symptoms that fell in the moderate range, externalizing symptoms in the high range (93rd percentile and above), and low ER (.74 *SDs* below current sample mean). Finally, the Withdrawn+Mod. ER class exhibited high social withdrawal and moderate hyperactivity. Their scores in the schizoid/anxious, depressed, aggressive, and delinquent domains were low, and they exhibited moderate ER (.50 *SDs* below sample mean).

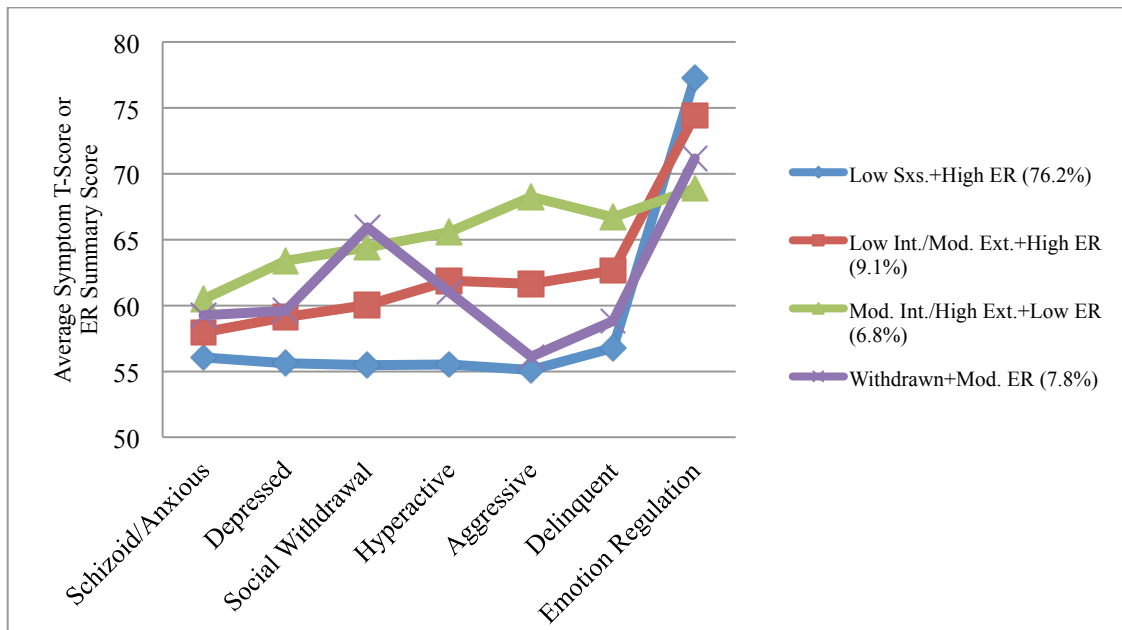


Figure 1. Mean Summary Scores for the Four-Class Model of Internalizing and Externalizing Symptoms and ER at Ages 10-12 ($N=775$). Percentage of sample classified in each latent class provided in legend.

In terms of demographic differences, omnibus chi-square analyses were conducted and pairwise comparisons were examined if the omnibus tests were significant. The omnibus test was significant for SES ($\chi^2(3) = 27.66, p = .000, \phi = .19$). Follow-up pairwise comparisons demonstrated that youth in the Low Sxs.+High ER ($M = 42.90; \chi^2(1) = 25.69, p = .000, \phi = .20$), Low Int./Mod. Ext.+High ER ($M = 41.08; \chi^2(1) = 8.20, p = .004, \phi = .26$), and Withdrawn+Mod. ER ($M = 38.95; \chi^2(1) = 3.86, p = .049, \phi = .19$) classes had significantly higher SES than children in the Mod. Int./High Ext.+Low ER class ($M = 34.21$). Further, youth in the Low Sxs.+High ER class had higher SES than children in the Withdrawn+Mod. ER class ($\chi^2(1) = 4.16, p = .041, \phi = .08$). Omnibus tests across classes were not significant for age ($\chi^2(3) = 0.473, p = .925, \phi = .02$) or sex ($\chi^2(3) = 5.921, p = .116, \phi = .09$).

LCA at Time 2. Similar to the LCA findings at Time 1, results for the LCA model at Time 2 (see Table 3) indicated that a four-class model best fit the data. The BIC is continuing to decrease in the four-class model, and it had good delineation of classes

(entropy=.976; posterior class probabilities ranging from .966 to .992). The smallest class size (4.9%, $n = 31$) represented a small percentage of the sample, though acceptable according to LCA model fit guidelines, and was a substantively meaningful class. As with Time 1, several indices suggest better fitting models with each additional class (i.e., log likelihood, AIC, ABIC, BLRT); however, the five-class model did not reveal substantively distinct or meaningful classes. Further, the smallest class size in the five-class model was small. Therefore, the four-class model was accepted.

Table 3.
Class Model Comparison at Age 16

Class- es	Free para- meters	Log likelihood	AIC	BIC	ABIC	BLRT	Entropy	Smallest Class Size n (%)
1	12	-11988.25	24000.50	24053.79	24015.69	N/A ^a	1	627 (100%)
2	19	-11317.52	22673.04	22757.42	22697.10	0.000	0.971	85 (13.6%)
3	26	-11120.94	22293.87	22409.34	22326.79	0.000	0.962	59 (9.4%)
4	33	-10905.44	21876.87	22023.42	21918.65	0.000	0.976	31 (4.9%)
5	40	-10812.26	21704.53	21882.16	21755.17	0.000	0.978	24 (3.8%)

Note. AIC = Akaike Information Criterion; BIC = Bayesian Information Criterion, ABIC=Adjusted BIC; BLRT = Bootstrap Likelihood Ratio Test.

^aBLRT is not available for the one-class model.

Examination of patterns of conditional item probabilities for each class at Time 2 (see Figure 2) indicates that the four classes at Time 2 were similar to the classes identified at Time 1 (i.e., Low Sxs.+High ER, Low Int./Mod. Ext.+High ER, Mod. Int./High Ext.+Low ER), with the exception of the Withdrawn+Mod. ER class, which was replaced with a Mod. Int./Low Ext.+Low ER class. The Mod. Int./Low Ext.+Low ER class displayed moderate levels of anxious/depressed and withdrawn symptoms; low levels of externalizing symptoms (attention, aggressive, and delinquent symptoms); and

low levels of ER (.79 SDs below current sample mean). Further, ER in the Mod. Int./High Ext.+Low ER class dropped from Time 1 to Time 2 (1.14 SDs below sample mean compared with .74 SDs below sample mean at Time 1). Contrary to hypotheses, ER decreased (i.e., poorer ER and less positive emotionality was reported) across all classes from Time 1 to Time 2. However, we can see that patterns of symptom profiles remained largely the same with the exception of the new Mod. Int./Low Ext.+Low ER class as described above.

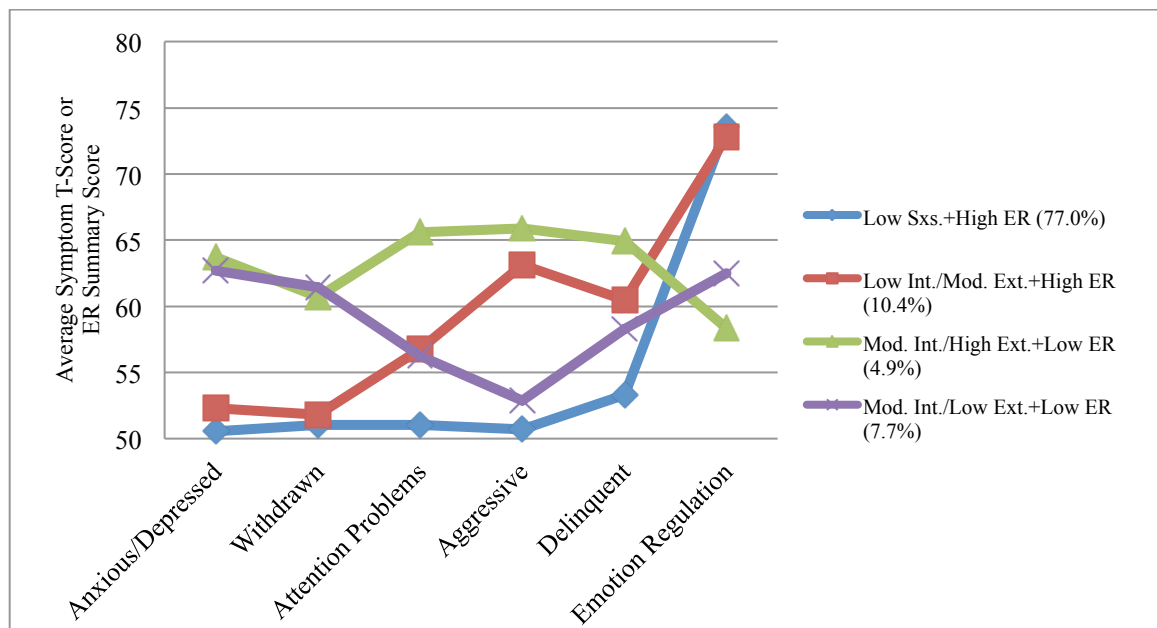


Figure 2. Mean Summary Scores for the Four-Class Model of Internalizing and Externalizing Symptoms and ER at Age 16 ($n=627$). Percentage of sample classified in each latent class provided in legend.

To examine demographic differences, follow-up omnibus chi-square tests were conducted. Analyses revealed that the four classes did not differ significantly in terms of SES ($\chi^2(3) = 6.17, p = .104, \phi = .10$); sex ($\chi^2(3) = 6.28, p = .099, \phi = .10$); or age ($\chi^2(3) = 0.72, p = .868, \phi = .03$).

Aim 2: Stability of Classes across Times 1 and 2

Stability of internalizing and externalizing symptoms and ER class membership was examined using LTA. Parameters for each class were set based on means obtained in the LCAs so that classes remained stable in the LTA models. For each class, cross-tabulation of stability and changes in class membership were examined. LTA models utilize FIML to retain the original sample size from each LCA time point; thus, the total sample from the LCA at Time 1 ($N=766$) was retained for estimating the variance-covariance matrix for the LTA model at Time 2. LTA conditional transition probabilities were explored to evaluate stability and change in class membership. With the addition of latent classes from different time points into the LTA model, slight alterations to class membership were evidenced. However, class interpretations remained consistent across all LTAs (e.g., the Low Sxs.+High ER classes continued to be characterized by low levels of internalizing and externalizing symptoms and high ER at Times 1 and 2).

Cross tabulation of class membership. Most youth (77%) were in the Low Sxs.+High ER class at Time 2 (Table 4). In addition, the Low Int./Mod. Ext.+High ER class increased from 9.1% of the Time 1 sample to 10.4% of the Time 2 sample. The Mod. Int./High Ext.+Low ER class decreased from 6.8% of the Time 1 sample to 4.9% of the Time 2 sample. A new class representing 7.7% of the sample (48 adolescents) emerged at Time 2 (Mod. Int./High Ext.+Low ER), characterized by moderate elevations across both internalizing domains (anxious/depressed and withdrawn behaviors) and low ER.

Table 4.

Percentage of Sample (n) in Classes Across Times 1 and 2

	10-12 years (N=766)	16 years (n=627)
Low Sxs.+High ER	76.2 (584)	77.0 (483)
Low Int./Mod. Ext.+High ER	9.1 (70)	10.4 (65)
Mod. Int./High Ext.+Low ER	6.8 (52)	4.9 (31)
Withdrawn+Mod. ER	7.8 (60)	--
Mod. Int./Low Ext.+Low ER	--	7.7 (48)

Note. Low Sxs.+High ER= low internalizing and externalizing symptoms and high ER class; Low Int./Mod. Ext.+High ER = low internalizing, moderate externalizing, and moderate ER means class; Mod. Int./High Ext.+Low ER = moderate internalizing, high externalizing, and low ER means class; Withdrawn+Mod. ER= high social withdrawal, moderate hyperactivity, but otherwise low symptoms and moderate ER means class; Mod. Int./Low Ext.+Low ER = moderate internalizing, low externalizing, and low ER means class.

LTA of class membership. Table 5 shows the transition probabilities from ages 10-12 to 16 (Time 1 to Time 2). The rows correspond to Time 1 and the columns correspond to Time 2. On the diagonal, the numbers represent stability across time for classes, with the exceptions of the Withdrawn+Mod. ER class and Mod. Int./Low Ext.+Low ER class, because they only emerged at Time 1 and Time 2, respectively. Numbers off the diagonal are the proportion of youth who transition to another class. Consistent with cross-tabulation results of classes across Times 1 and 2, results indicate high levels of stability of the Low Sxs.+High ER class (see Table 5). Most youth in the Low Sxs.+High ER class remained in that class at Time 2 (82.1%).

In contrast, lower levels of stability were evidenced among youth in the other three classes at Time 1. Among youth in the Low Int./Mod. Ext.+High ER class at Time 1, 69.6% transitioned into the Low Sxs.+High ER class and only 16.1% remained in the

Low Int./Mod. Ext.+High ER class at Time 2. Smaller numbers of individuals transitioned to the Mod. Int./High Ext.+Low ER (6.2%) and the Mod. Int./Low Ext.+Low ER (8.1%) classes at Time 2. Among youth in the Mod. Int./High Ext.+Low ER class at Time 1, only 23.9% remained in the same class at Time 2; 31.1% transitioned to the Low Sxs.+High ER class at Time 2, 33.0% moved to the Low Int./Mod. Ext.+High ER class, and 12.0% transitioned to the Mod. Int./Low Ext.+Low ER class. Most youth in the Withdrawn+Mod. ER class at Time 1 moved to the Low Sxs.+High ER class at Time 2 (71.1%). Among the rest of the Withdrawn+Mod. ER class at Time 1, 4.5% transitioned to the Low Int./Mod. Ext.+High ER class at Time 2, 10.5% transitioned to the Mod. Int./High Ext.+Low ER class, and 13.8% moved to the Mod. Int./Low Ext.+Low ER class.

Table 5.
Transition Probabilities for Latent Classes from Time 1 to Time 2

Time 1 (Ages 10-12)	Time 2 (Age 16)			
	Low Sxs.+ High ER (77.0%)	Low Int./Mod. Ext.+High ER (10.4%)	Mod. Int./High Ext.+Low ER (4.9%)	Mod. Int./Low Ext.+Low ER (7.7%)
Low Sxs.+High ER (76.2%)	.821	.083	.030	.066
Low Int./Mod. Ext.+High ER (9.1%)	.696	.161	.062	.081
Mod. Int./High Ext.+Low ER (6.8%)	.311	.330	.239	.120
Withdrawn+ Mod. ER (7.8%)	.711	.045	.105	.138

Note. Low Sxs.+High ER= low internalizing and externalizing symptoms and high ER class; Low Int./Mod. Ext.+High ER = low internalizing, moderate externalizing, and moderate ER means class; Mod. Int./High Ext.+Low ER = moderate internalizing, high externalizing, and low ER means class; Withdrawn+Mod. ER= high social withdrawal, moderate hyperactivity, but otherwise low symptoms and moderate ER means class; Mod. Int./Low Ext.+Low ER = moderate internalizing, low externalizing, and low ER means class.

Aim 3: Parenting Behaviors as Predictors of Transitions among Classes

Aim 3a. Prior to analyzing the role of parenting behaviors as potential predictors of transitions across time, I explored whether classes identified at Times 1 and 2 differed in terms of the levels of these predictor variables. At Time 1, classes differed in terms of many of the parenting variables (see Table 6). Specifically, youth in the Low Sxs.+High ER class rated their parents as exhibiting higher levels of acceptance than youth in the Low Int./Mod. Ext.+High ER and Mod. Int./High Ext.+Low ER classes. Further, youth in the Withdrawn+Mod. ER class experienced more parental acceptance than youth in the Mod. Int./High Ext.+Low ER class (both parents) and Low Int./Mod. Ext.+High ER (mother only). In terms of child-centeredness, youth in the Low Sxs.+High ER class experienced more paternal child-centeredness than youth in the Low Int./Mod. Ext.+High ER and Mod. Int./High Ext.+Low ER classes, but maternal child-centeredness did not differ across classes. Levels of parental control through guilt also differed across classes at Time 1. Children in the Withdrawn+Mod. ER and Mod. Int./High Ext.+Low ER classes experienced higher levels of paternal and maternal control through guilt than children in the Low Sxs.+High ER class. Children in the Mod. Int./High Ext.+Low ER class also experienced more control through guilt from both parents than children in the Low Int./Mod. Ext.+High ER class. In addition, youth in the Low Int./Mod. Ext.+High ER class experienced more maternal control through guilt than youth in the Low Sxs.+High ER class. Similar patterns emerged when parental control through anxiety was examined. Youth in the Low Int./Mod. Ext.+High ER, Mod. Int./High Ext.+Low ER, and Withdrawn+Mod. ER classes all experienced more maternal and paternal control through

anxiety than youth in the Low Sxs.+High ER class. Parental lax discipline and nonenforcement of rules did not differ across classes.

Youth in the Low Sxs.+High ER class at Time 2 class also experienced higher levels of paternal acceptance than youth in the Low Int./Mod. Ext.+High ER and Mod. Int./Low Ext.+Low ER classes, but maternal acceptance did not differ across classes. Parental control through guilt was higher in the Mod. Int./High Ext.+Low ER class than in the Low Sxs.+High ER and Mod. Int./Low Ext.+Low ER classes. Further, youth in the Low Int./Mod. Ext.+High ER class experienced more maternal control through guilt than youth in the Low Sxs.+High ER class. In terms of parental control through anxiety, results followed a similar pattern, with higher levels of control through anxiety in the Low Int./Mod. Ext.+High ER and Mod. Int./High Ext.+Low ER classes than in the Low Sxs.+High ER class. However, paternal control through anxiety was also higher in the Mod. Int./High Ext.+Low ER class than in the Mod. Int./Low Ext.+Low ER class, and maternal control through guilt did not differ between the Mod. Int./High Ext.+Low ER and Mod. Int./Low Ext.+Low ER classes. Finally, youth in the Mod. Int./High Ext.+Low ER class experienced more maternal nonenforcement of rules at Time 1 than youth in the Low Sxs.+High ER class. Levels of child-centeredness, lax discipline, and paternal nonenforcement of rules did not differ across Time 2 classes.

Table 6.
Omnibus Equality of Means Tests and Follow-Up Pairwise Comparisons for Significant Omnibus Tests for Predictors at Times 1 and 2

Effect	Class Means (SD)				χ^2	Post Hoc	ϕ
Time 1	Low Sxs. +High ER (1)	Low Int./ Mod. Ext. + High ER (2)	Mod. Int./ High Ext.+ Low ER (3)	Withdrawn + Mod. ER (4)			
<i>F Acceptance</i>	41.51 (6.36)	38.18 (7.41)	37.68 (7.76)	40.39 (6.07)	23.65***	1>2,3; 4>3	0.18
<i>M Acceptance</i>	42.33 (5.78)	40.61 (5.97)	38.87 (7.07)	42.84 (4.88)	17.46**	1,4>2,3	0.15
<i>F Child-Centered</i>	19.34 (3.33)	17.8 (3.64)	17.85 (4.12)	18.93 (2.87)	16.75**	1>2,3	0.15
<i>M Child-Centered</i>	19.84 (3.04)	19.26 (3.39)	19.23 (3.7)	20.05 (2.55)	3.64	NA	0.07
<i>F Guilt</i>	13.62 (3.79)	14.00 (3.19)	15.28 (3.53)	15.28 (3.53)	13.48**	3>1,2; 4>1	0.13
<i>M Guilt</i>	13.9 (3.87)	14.88 (3.39)	16.13 (3.32)	20.05 (2.55)	25.29***	2,3,4>1; 3>2	0.18
<i>F Anxiety</i>	13.02 (3.82)	13.98 (3.9)	14.79 (3.24)	14.29 (3.68)	19.88***	2,3,4>1	0.16
<i>M Anxiety</i>	13.13 (3.77)	14.57 (3.56)	15.24 (3.72)	14.22 (3.82)	24.85***	2,3,4>1	0.18
<i>F Lax Discipline</i>	12.12 (2.61)	12.34 (2.59)	12.32 (3.16)	11.86 (2.49)	1.34	NA	0.04
<i>M Lax Discipline</i>	11.91 (2.51)	12.02 (2.23)	11.7 (3.18)	11.82 (2.52)	0.46	NA	0.02
<i>F Non-enforcement</i>	14.19 (2.92)	14.32 (3.2)	14.12 (3.32)	14.09 (2.87)	0.22	NA	0.02
<i>M Non-enforcement</i>	14.42 (2.9)	14.83 (2.51)	14.49 (2.94)	14.67 (2.63)	1.90	NA	0.05
Time 2	Low Sxs. +High ER (1)	Low Int./ Mod. Ext. + High ER (2)	Mod. Int./ High Ext.+ Low ER (3)	Mod. Int./ Low Ext.+ Low ER (4)			
<i>F Acceptance</i>	41.41 (5.93)	39.59 (6.86)	39.48 (7.93)	38.29 (7.48)	12.41**	1>2,4	0.14
<i>M Acceptance</i>	42.31 (5.30)	42.11 (5.36)	40.95 (7.76)	39.93 (7.51)	5.37	NA	0.09
<i>F Child-Centered</i>	19.26 (3.08)	18.66 (3.64)	18.37 (4.15)	18.11 (3.70)	6.68	NA	0.10
<i>M Child-Centered</i>	19.74 (2.86)	19.87 (3.12)	19.46 (3.56)	19.48 (3.54)	0.55	NA	0.03
<i>F Guilt</i>	13.65 (3.60)	14.48 (3.47)	15.65 (4.39)	13.80 (3.53)	8.94*	3>1,4	0.12
<i>M Guilt</i>	14.00 (3.69)	15.10 (3.44)	16.05 (4.02)	14.15 (3.64)	12.56**	2,3>1; 3>4	0.14
<i>F Anxiety</i>	12.98 (3.63)	14.08 (3.95)	15.13 (3.67)	13.38 (3.63)	13.97*	2,3>1; 3>4	0.15
<i>M Anxiety</i>	13.18 (3.63)	14.22 (4.01)	14.98 (3.78)	13.53 (3.40)	10.08*	2,3>1	0.13
<i>F Lax Discipline</i>	12.13 (2.53)	11.91 (2.33)	12.04 (2.46)	12.79 (3.08)	2.87	NA	0.07
<i>M Lax Discipline</i>	11.87	11.77	12.40	12.00	1.35	NA	0.05

<i>Discipline</i>	(2.37)	(2.64)	(2.69)	(2.85)			
<i>F Non-enforcement</i>	14.18 (2.94)	14.27 (2.95)	14.49 (2.81)	14.13 (3.32)	0.42	NA	0.03
<i>M Non-enforcement</i>	14.37 (2.81)	15.06 (2.65)	15.69 (2.99)	14.40 (2.73)	9.01*	3>1	0.12

Note. F = Father; M = Mother; Accept = parental acceptance of child at Time 1; Child-Centered = parental child-centeredness at Time 1; Guilt = parental use of guilt to control child at Time 1; Anxiety = parental use of anxiety to control child at Time 1; Lax Discipline = parental lax discipline at Time 1; Nonenforcement = parental nonenforcement of rules at Time 1; Low Sxs.+High ER = low internalizing and externalizing symptoms and high emotion regulation (ER) means class; Low Int./Mod. Ext.+ High ER = low internalizing and moderate externalizing symptoms and high ER means class; Mod. Int./High Ext.+Low ER = moderate internalizing and high externalizing symptoms and low ER means class; Withdrawn+Mod. ER = high withdrawn behavior and low other internalizing and externalizing symptoms and moderate ER means class; Mod. Int./Low Ext.+Low ER = moderate internalizing and low externalizing symptoms and low ER means class.

* $p < .05$; ** $p < .01$; *** $p < .001$.

Aim 3b. Predictors of transitions among classes. Next, I examined whether parenting predictors were associated with transition probabilities. Estimated transition probabilities based on high and low levels of the predictors were examined. Given that there is no “gold” standard for determining “low” and “high” on the ER and parenting measures, median splits were used to divide youth into low and high groups on each parenting predictor to facilitate categorical covariate analyses of the effects on youth’s transition probabilities among youth low vs. high on the predictor. For each set of analyses, transition probabilities are presented according to low and high levels of the predictor. Percentages on the diagonals are associated with stability in classes from Time 1 to Time 2. Percentages off the diagonal indicate, for each level of the predictor (low vs. high), the likelihood that an individual would transition to a different class at Time 2.

Table 7.
Estimated Transition Probabilities for Time 1 to Time 2 with Paternal Acceptance as a Predictor

Time 1	Low Paternal Acceptance				High Paternal Acceptance			
	Time 2				Time 2			
	Low Sxs. (77.0%)	Low In./ Mod. Ex. (10.4%)	Mod. In./ High Ex. (4.9%)	Mod. In./ Low Ex. (7.7%)	Low Sxs. (77.0%)	Low In./ Mod. Ex. (10.4%)	Mod. In./ High Ex. (4.9%)	Mod. In./ Low Ex. (7.7%)
Low Sxs. (76.2%)	80.0%	9.5%	3.6%	6.9%	82.1%	6.8%	3.9%	7.3%
Low In./ Mod. Ex. (9.1%)	66.6%	20.5%	9.0%	3.9%	28.9%	40.7%	30.4%	0.0%
Mod. In./ High Ex. (6.8%)	19.1%	26.0%	16.9%	38.0%	40.0%	34.7%	25.3%	0.0%
With- drawn (7.8%)	47.7%	16.2%	11.7%	24.4%	100.0%	0.0%	0.0%	0.0%

Note. Low Sxs. = low internalizing and externalizing symptoms and high emotion regulation (ER) means class; Low In./Mod. Ex. = low internalizing and moderate externalizing symptoms and moderate-high ER means class; Mod. In./High Ex. = moderate internalizing and high externalizing symptoms and low ER means class; Withdrawn+Mod. ER = high withdrawn behavior and low other internalizing and externalizing symptoms and moderate ER means class; Mod. In./Low Ex. = moderate internalizing and low externalizing symptoms and low ER means class; Low Paternal Acceptance = Time 1 paternal acceptance at or below sample median; High Paternal Acceptance = Time 1 paternal acceptance above sample median. At Time 1, Internalizing = Schizoid/Anxious, Depressed, Social Withdrawal subscales; Externalizing = Hyperactive, Aggressive, Delinquent subscales. At Time 2, Internalizing = Anxious/Depressed, Withdrawn subscales; Externalizing = Attention, Aggressive, Delinquent subscales.

Table 8.
Estimated Transition Probabilities for Time 1 to Time 2 with Maternal Acceptance as a Predictor

Time 1	Low Maternal Acceptance				High Maternal Acceptance			
	Time 2				Time 2			
	Low Sxs. (77.0%)	Low In./ Mod. Ex. (10.4%)	Mod. In./ High Ex. (4.9%)	Mod. In./ Low Ex. (7.7%)	Low Sxs. (77.0%)	Low In./ Mod. Ex. (10.4%)	Mod. In./ High Ex. (4.9%)	Mod. In./ Low Ex. (7.7%)
Low Sxs. (76.2%)	79.6%	9.3%	2.7%	8.4%	83.1%	6.6%	4.7%	5.6%
Low In./ Mod. Ex. (9.1%)	63.9%	14.1%	18.1%	3.8%	32.1%	67.9%	0.0%	0.0%
Mod. In./ High Ex. (6.8%)	18.6%	26.1%	17.4%	37.8%	41.8%	30.0%	28.2%	0.0%
With- drawn (7.8%)	49.5%	15.6%	16.3%	18.5%	83.5%	2.7%	4.2%	9.5%

Note. Low Sxs. = low internalizing and externalizing symptoms and high emotion regulation (ER) means class; Low In./Mod. Ex. = low internalizing and moderate externalizing symptoms and moderate-high ER means class; Mod. In./High Ex. = moderate internalizing and high externalizing symptoms and low ER means class; Withdrawn+Mod. ER = high withdrawn behavior and low other internalizing and externalizing symptoms and moderate ER means class; Mod. In./Low Ex. = moderate internalizing and low externalizing symptoms and low ER means class; Low Maternal Acceptance = Time 1 maternal acceptance at or below sample median; High Maternal Acceptance = Time 1 maternal acceptance above sample median. At Time 1, Internalizing = Schizoid/Anxious, Depressed, Social Withdrawal subscales; Externalizing = Hyperactive, Aggressive, Delinquent subscales. At Time 2, Internalizing = Anxious/Depressed, Withdrawn subscales; Externalizing = Attention, Aggressive, Delinquent subscales.

As Tables 7 and 8 demonstrate, when examining maternal and paternal acceptance as predictors, there was some stability within classes across time, particularly among the Low Sxs.+High ER class. However, certain transitions are notable. There was movement from the Time 1 Low Int./Mod Ex., Mod. Int./High Ext.+Low ER, and Withdrawn+Mod. ER classes to the Time 2 Low Sxs.+High ER class among youth with both high and low parental acceptance. When paternal acceptance was high, 100% of youth in the Withdrawn+Mod. ER class (Time 1) transitioned to the Low Sxs.+High ER class (vs. 47.7% for low paternal acceptance). Youth in the Mod. Int./High Ext.+Low ER class were also more likely to move to the Low Sxs.+High ER class when paternal

(40.0% for high acceptance, 19.1% for low acceptance) and maternal (41.8% for high acceptance, 18.6% for low acceptance) acceptance were high. However, youth in the Low Int./Mod. Ext.+High ER class were more likely to transition to the Low Sxs.+High ER class when paternal (28.9% for high acceptance, 66.6% for low acceptance) and maternal (32.1% for high acceptance, 63.9% for low acceptance) acceptance were low.

Table 9.
Estimated Transition Probabilities for Time 1 to Time 2 with Paternal Child-Centeredness as a Predictor

Time 1	<u>Low Paternal Child-Centeredness</u>				<u>High Paternal Child-Centeredness</u>			
	Time 2				Time 2			
	Low Sxs. (77.0%)	Low In./ Mod. Ex. (10.4%)	Mod. In./ High Ex. (4.9%)	Mod. In./ Low Ex. (7.7%)	Low Sxs. (77.0%)	Low In./ Mod. Ex. (10.4%)	Mod. In./ High Ex. (4.9%)	Mod. In./ Low Ex. (7.7%)
Low Sxs. (76.2%)	80.6%	9.8%	3.5%	6.1%	81.6%	6.5%	4.0%	8.0%
Low In./ Mod. Ex. (9.1%)	67.5%	22.0%	10.5%	0.0%	35.6%	28.8%	23.4%	12.2%
Mod. In./ High Ex. (6.8%)	25.4%	23.6%	15.7%	35.3%	29.0%	42.7%	28.3%	0.0%
With- drawn (7.8%)	44.6%	17.3%	11.8%	26.2%	100%	0%	0%	0%

Note. Low Sxs. = low internalizing and externalizing symptoms and high emotion regulation (ER) means class; Low In./Mod. Ex. = low internalizing and moderate externalizing symptoms and moderate-high ER means class; Mod. In./High Ex. = moderate internalizing and high externalizing symptoms and low ER means class; +Mod. ER = high withdrawn behavior and low other internalizing and externalizing symptoms and moderate ER means class; Mod. In./Low Ex. = moderate internalizing and low externalizing symptoms and low ER means class; Low Paternal Child-Centeredness = paternal child-centeredness at Time 1 at or below sample median; High Paternal Child-Centeredness = paternal child-centeredness at Time 1 above sample median. At Time 1, Internalizing = Schizoid/Anxious, Depressed, Social Withdrawal subscales and Externalizing = Hyperactive, Aggressive, Delinquent subscales. At Time 2, Internalizing = Anxious/Depressed, Withdrawn subscales and Externalizing = Attention, Aggressive, Delinquent subscales.

Table 10.
Estimated Transition Probabilities for Time 1 to Time 2 with Maternal Child-Centeredness as a Predictor

Time 1	Low Maternal Child-Centeredness				High Maternal Child-Centeredness			
	Time 2				Time 2			
	Low Sxs. (77.0%)	Low In./ Mod. Ex. (10.4%)	Mod. In./ High Ex. (4.9%)	Mod. In./ Low Ex. (7.7%)	Low Sxs. (77.0%)	Low In./ Mod. Ex. (10.4%)	Mod. In./ High Ex. (4.9%)	Mod. In./ Low Ex. (7.7%)
Low Sxs. (76.2%)	80.4%	6.6%	3.2%	9.8%	76.3%	6.4%	7.0%	10.3%
Low In./ Mod. Ex. (9.1%)	71.8%	14.0%	2.8%	11.4%	56.7%	5.0%	21.1%	17.2%
Mod. In./ High Ex. (6.8%)	32.2%	33.3%	34.5%	0.0%	18.3%	62.9%	18.7%	0.0%
With- drawn (7.8%)	45.6%	0.7%	25.4%	28.3%	76.0%	4.6%	0.0%	19.4%

Note. Low Sxs. = low internalizing and externalizing symptoms and high emotion regulation (ER) means class; Low In./Mod. Ex. = low internalizing and moderate externalizing symptoms and moderate-high ER means class; Mod. In./High Ex. = moderate internalizing and high externalizing symptoms and low ER means class; Withdrawn+Mod. ER = high withdrawn behavior and low other internalizing and externalizing symptoms and moderate ER means class; Mod. In./Low Ex. = moderate internalizing and low externalizing symptoms and low ER means class; Low Maternal Child-Centeredness = maternal child-centeredness at Time 1 at or below sample median; High Maternal Child-Centeredness = Maternal child-centeredness at Time 1 above sample median. At Time 1, Internalizing = Schizoid/Anxious, Depressed, Social Withdrawal subscales and Externalizing = Hyperactive, Aggressive, Delinquent subscales. At Time 2, Internalizing = Anxious/Depressed, Withdrawn subscales and Externalizing = Attention, Aggressive, Delinquent subscales.

Tables 9 and 10 demonstrate the transitions from Time 1 to Time 2 with paternal and maternal child-centeredness as predictors. In general, youth were most likely to move from a symptoms class (Low Int./Mod. Ext.+High ER, Mod. Int./High Ext.+Low ER, or Withdrawn+Mod. ER) to the Low Sxs.+High ER class, with the exception of youth in the Time 1 Mod. Int./High Ext.+Low ER class who experienced high parental child-centeredness. Of youth in the Mod. Int./High Ext.+Low ER class who experienced high paternal child-centeredness, 42.7% moved to the Low Int./Mod. Ext.+High ER group (vs. 23.6% who experienced low paternal child-centeredness). When youth experienced high maternal child-centeredness, 62.9% of those in the Mod. Int./High Ext.+Low ER class at

Time 1 moved to the Low Int./Mod. Ext.+High ER group at Time 2 (vs. 33.3% who experienced low paternal child-centeredness). Youth in the Withdrawn+Mod. ER class at Time 1 were more likely to move to the Low Sxs.+High ER class at Time 2 when paternal (100% for high, 44.6% for low) and maternal (76% for high, 45.6% for low) child-centeredness were high.

Table 11.
Estimated Transition Probabilities for Time 1 to Time 2 with Paternal Guilt as a Predictor

Time 1	Low Paternal Guilt				High Paternal Guilt			
	Time 2				Time 2			
	Low Sxs. (77.0%)	Low In./ Mod. Ex. (10.4%)	Mod. In./ High Ex. (4.9%)	Mod. In./ Low Ex. (7.7%)	Low Sxs. (77.0%)	Low In./ Mod. Ex. (10.4%)	Mod. In./ High Ex. (4.9%)	Mod. In./ Low Ex. (7.7%)
Low Sxs. (76.2%)	83.1%	7.4%	2.5%	7.0%	78.5%	10.0%	4.0%	7.5%
Low In./ Mod. Ex. (9.1%)	85.1%	3.7%	3.4%	7.8%	50.9%	34.4%	5.6%	9.0%
Mod. In./ High Ex. (6.8%)	21.5%	52.1%	0.0%	26.4%	22.1%	21.9%	44.6%	11.4%
With- drawn (7.8%)	73.6%	7.0%	4.3%	15.0%	79.1%	0.0%	16.5%	4.4%

Note. Low Sxs. = low internalizing and externalizing symptoms and high emotion regulation (ER) means class; Low In./Mod. Ex. = low internalizing and moderate externalizing symptoms and moderate-high ER means class; Mod. In./High Ex. = moderate internalizing and high externalizing symptoms and low ER means class; Withdrawn+Mod. ER = high withdrawn behavior and low other internalizing and externalizing symptoms and moderate ER means class; Mod. In./Low Ex. = moderate internalizing and low externalizing symptoms and low ER means class; Low Paternal Guilt = paternal use of guilt to control child at Time 1 at or below sample median; High Paternal Guilt = paternal use of guilt to control child at Time 1 above sample median. At Time 1, Internalizing = Schizoid/Anxious, Depressed, Social Withdrawal subscales and Externalizing = Hyperactive, Aggressive, Delinquent subscales. At Time 2, Internalizing = Anxious/Depressed, Withdrawn subscales and Externalizing = Attention, Aggressive, Delinquent subscales.

Table 12.
Estimated Transition Probabilities for Time 1 to Time 2 with Maternal Guilt as a Predictor

Time 1	Low Maternal Guilt				High Maternal Guilt			
	Time 2				Time 2			
	Low Sxs. (77.0%)	Low In./ Mod. Ex. (10.4%)	Mod. In./ High Ex. (4.9%)	Mod. In./ Low Ex. (7.7%)	Low Sxs. (77.0%)	Low In./ Mod. Ex. (10.4%)	Mod. In./ High Ex. (4.9%)	Mod. In./ Low Ex. (7.7%)
Low Sxs. (76.2%)	83.3%	3.3%	4.2%	9.3%	71.7%	10.9%	6.4%	11.0%
Low In./ Mod. Ex. (9.1%)	73.0%	3.4%	10.0%	13.6%	58.8%	20.0%	8.1%	13.1%
Mod. In./ High Ex. (6.8%)	43.6%	28.4%	28.0%	0.0%	20.9%	50.0%	29.1%	0.0%
With- drawn (7.8%)	63.3%	8.6%	8.1%	19.9%	55.2%	0.0%	16.9%	27.9%

Note. Low Sxs. = low internalizing and externalizing symptoms and high emotion regulation (ER) means class; Low In./Mod. Ex. = low internalizing and moderate externalizing symptoms and moderate-high ER means class; Mod. In./High Ex. = moderate internalizing and high externalizing symptoms and low ER means class; Withdrawn+Mod. ER = high withdrawn behavior and low other internalizing and externalizing symptoms and moderate ER means class; Mod. In./Low Ex. = moderate internalizing and low externalizing symptoms and low ER means class; Low Maternal Guilt = maternal use of guilt to control child at Time 1 at or below sample median; High Maternal Guilt = maternal use of guilt to control child at Time 1 above sample median. At Time 1, Internalizing = Schizoid/Anxious, Depressed, Social Withdrawal subscales and Externalizing = Hyperactive, Aggressive, Delinquent subscales. At Time 2, Internalizing = Anxious/Depressed, Withdrawn subscales and Externalizing = Attention, Aggressive, Delinquent subscales.

Transitions from Time 1 to Time 2 with paternal and maternal control through guilt as predictors are displayed in Tables 11 and 12. Youth were less likely to remain in the Low Sxs.+High ER class from Time 1 to Time 2 when paternal and maternal guilt were high (paternal: 78.5% with high guilt, 83.1% with low guilt; maternal: 71.7% with high guilt, 83.3% with high guilt). When paternal guilt was low, 100% of youth in the Mod. Int./High Ext.+Low ER transitioned to classes with lower symptom levels at Time 2, whereas 44.6% of these youth remained in the Mod. Int./High Ext. class at Time 2 when paternal guilt was high. This pattern differed based on maternal guilt. Youth in the Mod. Int./High Ext. class were more likely to transition to the Time 2 Low Sxs.+High ER

class when maternal guilt was low (43.6% vs. 20.9% for high maternal guilt), but the percentage of youth who remained in the Mod. Int./High Ext.+Low ER class at Time 2 did not differ based on maternal guilt (28% vs. 29.1%). Further, youth in the Low. Int./Mod. Ext. class at Time 1 were more likely to transition to the Time 2 Low Sxs.+High ER class when paternal and maternal guilt were low (85.1% vs. 50.9% and 73.0% vs. 58.8%, respectively).

Table 13.

Estimated Transition Probabilities for Time 1 to Time 2 with Paternal Use of Anxiety as a Predictor

Time 1	<u>Low Paternal Anxiety</u>				<u>High Paternal Anxiety</u>			
	Time 2				Time 2			
	Low Sxs. (77.0%)	Low In./ Mod. Ex. (10.4%)	Mod. In./ High Ex. (4.9%)	Mod. In./ Low Ex. (7.7%)	Low Sxs. (77.0%)	Low In./ Mod. Ex. (10.4%)	Mod. In./ High Ex. (4.9%)	Mod. In./ Low Ex. (7.7%)
Low Sxs. (76.2%)	82.6%	8.0%	1.9%	7.5%	80.1%	8.8%	4.8%	6.3%
Low In./ Mod. Ex. (9.1%)	86.5%	6.8%	0.0%	6.7%	43.6%	35.4%	10.3%	10.6%
Mod. In./ High Ex. (6.8%)	37.9%	26.2%	15.0%	20.9%	16.1%	35.5%	33.4%	15.0%
With- drawn (7.8%)	73.2%	0.0%	8.1%	18.7%	77.6%	9.6%	12.8%	0.0%

Note. Low Sxs. = low internalizing and externalizing symptoms and high emotion regulation (ER) means class; Low In./Mod. Ex. = low internalizing and moderate externalizing symptoms and moderate-high ER means class; Mod. In./High Ex. = moderate internalizing and high externalizing symptoms and low ER means class; Withdrawn+Mod. ER = high withdrawn behavior and low other internalizing and externalizing symptoms and moderate ER means class; Mod. In./Low Ex. = moderate internalizing and low externalizing symptoms and low ER means class; Low Paternal Anxiety = paternal use of anxiety to control child at Time 1 at or below sample median; High Paternal Anxiety = paternal use of anxiety to control child at Time 1 above sample median. At Time 1, Internalizing = Schizoid/Anxious, Depressed, Social Withdrawal subscales and Externalizing = Hyperactive, Aggressive, Delinquent subscales. At Time 2, Internalizing = Anxious/Depressed, Withdrawn subscales and Externalizing = Attention, Aggressive, Delinquent subscales.

Table 14.

Estimated Transition Probabilities for Time 1 to Time 2 with Maternal Use of Anxiety as a Predictor

Time 1	Low Maternal Anxiety				High Maternal Anxiety			
	Time 2				Time 2			
	Low Sxs. (77.0%)	Low In./ Mod. Ex. (10.4%)	Mod. In./ High Ex. (4.9%)	Mod. In./ Low Ex. (7.7%)	Low Sxs. (77.0%)	Low In./ Mod. Ex. (10.4%)	Mod. In./ High Ex. (4.9%)	Mod. In./ Low Ex. (7.7%)
Low Sxs. (76.2%)	80.4%	4.9%	4.8%	10.0%	76.0%	8.6%	5.4%	10.0%
Low In./ Mod. Ex. (9.1%)	78.4%	10.7%	3.6%	7.4%	54.0%	11.1%	15.0%	19.9%
Mod. In./ High Ex. (6.8%)	50.0%	25.7%	24.3%	0.0%	18.5%	50.8%	30.7%	0.0%
With- drawn (7.8%)	50.6%	0.0%	17.5%	31.9%	71.9%	7.1%	7.6%	13.4%

Note. Low Sxs. = low internalizing and externalizing symptoms and high emotion regulation (ER) means class; Low In./Mod. Ex. = low internalizing and moderate externalizing symptoms and moderate-high ER means class; Mod. In./High Ex. = moderate internalizing and high externalizing symptoms and low ER means class; Withdrawn+Mod. ER = high withdrawn behavior and low other internalizing and externalizing symptoms and moderate ER means class; Mod. In./Low Ex. = moderate internalizing and low externalizing symptoms and low ER means class; Low Maternal Anxiety = maternal use of anxiety to control child at Time 1 at or below sample median; High Maternal Anxiety = maternal use of anxiety to control child at Time 1 above sample median. At Time 1, Internalizing = Schizoid/Anxious, Depressed, Social Withdrawal subscales and Externalizing = Hyperactive, Aggressive, Delinquent subscales. At Time 2, Internalizing = Anxious/Depressed, Withdrawn subscales and Externalizing = Attention, Aggressive, Delinquent subscales.

Tables 13 and 14 demonstrate the transitions from Time 1 to Time 2 with paternal and maternal use of control through anxiety as predictors. Youth in the Low Sxs.+High ER class were slightly more likely to remain in that class at Time 2 when parental control through anxiety was low (82.6% vs. 80.1% for paternal, 80.4% vs. 76.0% for maternal). Further, youth in the Low Int./Mod. Ext.+High ER and Mod. Int./High Ext.+Low ER classes were more likely to move to the Time 2 Low Sxs.+High ER class when parental control through anxiety was low as opposed to high (see Tables 13 and 14 for transition probabilities). However, youth in the Time 1 Withdrawn+Mod. ER class were more likely to transition to the Time 2 Low Sxs.+High ER class when parental control through

anxiety was high rather than low (77.6% vs. 73.2% for paternal, 71.9% vs. 50.6% for maternal). Differences in transition probabilities for the Time 1 Withdrawn+Mod. ER group were more pronounced for maternal, as opposed to paternal, low and high control through anxiety. Youth in the Low Int./Mod. Ext.+High ER were also more likely to move to the Time 2 Mod. Int./High Ext.+Low ER class when both paternal (10.3% for high, 0.0% for low) and maternal (15.0% for high, 3.6% for low) control through anxiety were high.

Table 15.
Estimated Transition Probabilities for Time 1 to Time 2 with Paternal Lax Discipline as a Predictor

Time 1	Low Paternal Lax Discipline				High Paternal Lax Discipline			
	Time 2				Time 2			
	Low Sxs. (77.0%)	Low In./ Mod. Ex. (10.4%)	Mod. In./ High Ex. (4.9%)	Mod. In./ Low Ex. (7.7%)	Low Sxs. (77.0%)	Low In./ Mod. Ex. (10.4%)	Mod. In./ High Ex. (4.9%)	Mod. In./ Low Ex. (7.7%)
Low Sxs. (76.2%)	81.7%	9.0%	3.8%	5.6%	80.1%	6.7%	3.8%	9.4%
Low In./ Mod. Ex. (9.1%)	45.2%	45.9%	8.9%	0.0%	66.1%	8.9%	19.4%	5.6%
Mod. In./ High Ex. (6.8%)	42.2%	14.8%	21.1%	21.9%	0.0%	46.1%	21.7%	32.2%
With- drawn (7.8%)	70.5%	2.5%	15.2%	11.9%	60.5%	18.8%	0.0%	20.7%

Note. Low Sxs. = low internalizing and externalizing symptoms and high emotion regulation (ER) means class; Low In./Mod. Ex. = low internalizing and moderate externalizing symptoms and moderate-high ER means class; Mod. In./High Ex. = moderate internalizing and high externalizing symptoms and low ER means class; Withdrawn+Mod. ER = high withdrawn behavior and low other internalizing and externalizing symptoms and moderate ER means class; Mod. In./Low Ex. = moderate internalizing and low externalizing symptoms and low ER means class; Low Paternal Lax Discipline = paternal use of lax discipline at Time 1 at or below sample median; High Paternal Lax Discipline = paternal use of lax discipline at Time 1 above sample median. At Time 1, Internalizing = Schizoid/Anxious, Depressed, Social Withdrawal subscales and Externalizing = Hyperactive, Aggressive, Delinquent subscales. At Time 2, Internalizing = Anxious/Depressed, Withdrawn subscales and Externalizing = Attention, Aggressive, Delinquent subscales.

Table 16.

Estimated Transition Probabilities for Time 1 to Time 2 with Maternal Lax Discipline as a Predictor

Time 1	Low Maternal Lax Discipline				High Maternal Lax Discipline			
	Time 2				Time 2			
	Low Sxs. (77.0%)	Low In./ Mod. Ex. (10.4%)	Mod. In./ High Ex. (4.9%)	Mod. In./ Low Ex. (7.7%)	Low Sxs. (77.0%)	Low In./ Mod. Ex. (10.4%)	Mod. In./ High Ex. (4.9%)	Mod. In./ Low Ex. (7.7%)
Low Sxs. (76.2%)	77.5%	6.7%	5.0%	10.8%	80.5%	5.7%	5.1%	8.7%
Low In./ Mod. Ex. (9.1%)	68.1%	3.1%	12.7%	16.1%	64.0%	22.2%	4.3%	9.6%
Mod. In./ High Ex. (6.8%)	35.6%	35.9%	28.5%	0.0%	0.0%	69.7%	30.3%	0.0%
With- drawn (7.8%)	63.0%	3.1%	12.5%	21.4%	50.4%	6.3%	13.2%	30.2%

Note. Low Sxs. = low internalizing and externalizing symptoms and high emotion regulation (ER) means class; Low In./Mod. Ex. = low internalizing and moderate externalizing symptoms and moderate-high ER means class; Mod. In./High Ex. = moderate internalizing and high externalizing symptoms and low ER means class; Withdrawn+Mod. ER = high withdrawn behavior and low other internalizing and externalizing symptoms and moderate ER means class; Mod. In./Low Ex. = moderate internalizing and low externalizing symptoms and low ER means class; Low Maternal Lax Discipline = maternal use of lax discipline at Time 1 at or below sample median; High Maternal Lax Discipline = maternal use of lax discipline at Time 1 above sample median. At Time 1, Internalizing = Schizoid/Anxious, Depressed, Social Withdrawal subscales and Externalizing = Hyperactive, Aggressive, Delinquent subscales. At Time 2, Internalizing = Anxious/Depressed, Withdrawn subscales and Externalizing = Attention, Aggressive, Delinquent subscales.

Transitions from Time 1 to Time 2 with paternal and maternal use of lax discipline as predictors are displayed in Tables 15 and 16. High lax discipline implies a lenient discipline style, whereas low lax discipline indicates a stricter discipline style. Among youth in the Low Sxs.+High ER class at Time 1, transition probabilities did not differ greatly based on high or low parental lax discipline. Youth in the Low Int./Mod. Ext.+High ER class were more likely to transition to the Time 2 Low Sxs.+High ER class when paternal lax discipline was high (66.1% for high lax discipline, 45.2% for low lax discipline). However, youth in the Low Int./Mod. Ext.+High ER class were also more likely to transition to the Time 2 Mod. Int./High Ext.+Low ER class when paternal lax

discipline was high (19.4% for high vs. 8.9% for low). This pattern was not consistent when examining low and high maternal lax discipline among youth in the Time 1 Low Int./Mod. Ext.+High ER class. Youth were more likely to move to a more severe (Mod. Int./High Ext.+Low ER) or characteristically different symptom class (Mod. Int./Low Ext.+Low ER) at Time 2 when maternal lax discipline was low (see Table 16). Moreover, the probability of these youth transitioning to the Time 2 Low Sxs.+High ER class was similar based on low and high maternal lax discipline (68.1% for low, 64.0% for high maternal lax discipline). Youth in the Mod. Int./High Ext.+Low ER class were more likely to move to the Time 2 Low Sxs.+High ER class when both paternal (42.2% for low, 0.0% for high) and maternal (35.6% for low, 0.0% for high) use of lax discipline was low. The same pattern was true among youth in the Time 1 Withdrawn+Mod. ER class (see Tables 15 and 16).

Table 17.

Estimated Transition Probabilities for Time 1 to Time 2 with Paternal Nonenforcement of Rules as a Predictor

Time 1	Low Paternal Nonenforcement				High Paternal Nonenforcement			
	Time 2				Time 2			
	Low Sxs. (77.0%)	Low In./ Mod. Ex. (10.4%)	Mod. In./ High Ex. (4.9%)	Mod. In./ Low Ex. (7.7%)	Low Sxs. (77.0%)	Low In./ Mod. Ex. (10.4%)	Mod. In./ High Ex. (4.9%)	Mod. In./ Low Ex. (7.7%)
Low Sxs. (76.2%)	81.6%	7.6%	3.4%	7.5%	81.2%	9.2%	2.6%	7.0%
Low In./ Mod. Ex. (9.1%)	77.7%	15.9%	0.0%	6.5%	56.7%	20.5%	9.6%	13.3%
Mod. In./ High Ex. (6.8%)	20.0%	32.8%	25.0%	22.2%	25.5%	35.6%	30.8%	8.1%
With- drawn (7.8%)	75.3%	0.0%	11.9%	12.8%	78.5%	8.2%	9.2%	4.2%

Note. Low Sxs. = low internalizing and externalizing symptoms and high emotion regulation (ER) means class; Low In./Mod. Ex. = low internalizing and moderate externalizing symptoms and moderate-high ER means class; Mod. In./High Ex. = moderate internalizing and high externalizing symptoms and low ER means class; Withdrawn+Mod. ER = high withdrawn behavior and low other internalizing and externalizing symptoms and moderate ER means class; Mod. In./Low Ex. = moderate internalizing and low externalizing symptoms and low ER means class; Low Paternal Nonenforcement = paternal nonenforcement of rules at Time 1 at or below sample median; High Paternal Nonenforcement = paternal nonenforcement of rules at Time 1 above sample median. At Time 1, Internalizing = Schizoid/Anxious, Depressed, Social Withdrawal subscales and Externalizing = Hyperactive, Aggressive, Delinquent subscales. At Time 2, Internalizing = Anxious/Depressed, Withdrawn subscales and Externalizing = Attention, Aggressive, Delinquent subscales.

Table 18.
Estimated Transition Probabilities for Time 1 to Time 2 with Maternal Nonenforcement of Rules as a Predictor

Time 1	Low Maternal Nonenforcement				High Maternal Nonenforcement			
	Time 2				Time 2			
	Low Sxs. (77.0%)	Low In./ Mod. Ex. (10.4%)	Mod. In./ High Ex. (4.9%)	Mod. In./ Low Ex. (7.7%)	Low Sxs. (77.0%)	Low In./ Mod. Ex. (10.4%)	Mod. In./ High Ex. (4.9%)	Mod. In./ Low Ex. (7.7%)
Low Sxs. (76.2%)	77.7%	6.2%	5.8%	10.3%	80.2%	7.3%	3.6%	9.1%
Low In./ Mod. Ex. (9.1%)	74.7%	6.1%	3.1%	16.1%	55.0%	17.8%	17.7%	9.6%
Mod. In./ High Ex. (6.8%)	25.6%	46.3%	28.1%	0.0%	27.7%	41.7%	30.7%	0.0%
With- drawn (7.8%)	67.4%	0.0%	9.6%	22.9%	45.9%	7.2%	19.1%	27.9%

Note. Low Sxs. = low internalizing and externalizing symptoms and high emotion regulation (ER) means class; Low In./Mod. Ex. = low internalizing and moderate externalizing symptoms and moderate-high ER means class; Mod. In./High Ex. = moderate internalizing and high externalizing symptoms and low ER means class; Withdrawn+Mod. ER = high withdrawn behavior and low other internalizing and externalizing symptoms and moderate ER means class; Mod. In./Low Ex. = moderate internalizing and low externalizing symptoms and low ER means class; Low Maternal Nonenforcement = maternal nonenforcement of rules at Time 1 at or below sample median; High Maternal Nonenforcement = maternal nonenforcement of rules at Time 1 above sample median. At Time 1, Internalizing = Schizoid/Anxious, Depressed, Social Withdrawal subscales and Externalizing = Hyperactive, Aggressive, Delinquent subscales. At Time 2, Internalizing = Anxious/Depressed, Withdrawn subscales and Externalizing = Attention, Aggressive, Delinquent subscales.

Tables 17 and 18 demonstrate the transitions from Time 1 to Time 2 with paternal and maternal nonenforcement of rules as predictors. When parental nonenforcement of rules is high, parents are unlikely to enforce and be consistent with rules. When nonenforcement is low, parents consistently enforce household rules. Youth in the Time 1 Low Int./Mod. Ext.+High ER class were more likely to move to the Time 2 Low Sxs.+High ER class when paternal (77.7% for low, 56.7% for high) and maternal (74.7% for low, 55.0% for high) nonenforcement was low. Youth in the Time 1 Withdrawn+Mod. ER class also evidenced greater likelihood of moving to the Low Sxs.+High ER class when maternal nonenforcement was low (67.4% for low, 45.9% for

high). However, this transition likelihood was similar regardless of paternal nonenforcement (75.3% for low, 78.5% for high). For the most part, transition probabilities among youth in the Time 1 Mod. Int./High Ext.+Low ER did not vary greatly based on low or high levels of parental nonenforcement of rules. However, youth in this group who experienced low paternal nonenforcement were more likely to transition to the Mod. Int./Low Ext.+Low ER class at Time 2 (22.2% for low, 8.1% for high). Finally, youth in Low Int./Mod. Ext.+High ER and Mod. Int./High Ext.+Low ER classes at Time 1 were more likely to move to or stay in the Mod. Int./High Ext.+Low ER at Time 2 when paternal and maternal nonenforcement was high.

Aim 4: Auxiliary analyses of cross-sectional levels of substance use; and levels of subjective wellbeing, interpersonal, occupational, and educational adaptive functioning, and substance use in early adulthood.

I explored whether classes identified at Times 1 and 2 differed on levels of substance use at Times 2 and 3 (see Table 19). First, I examined whether classes identified at Time 1 differed in levels of Time 2 and 3 substance use. In terms of tobacco and marijuana use at Time 2, youth in the Low Int./Mod. Ext.+High ER and Mod. Int./High Ext.+Low ER classes at Time 1 used tobacco and marijuana more frequently at Time 2 than youth in the Low Sxs.+High ER class. Time 1 classes did not differ in terms of Time 2 levels of alcohol and hard drugs. Youth in the Low Int./Mod. Ext.+High ER and Mod. Int./High Ext.+Low ER classes at Time 1 were also more likely to use hard drugs at Time 3 than youth in the Time 1 Low Sxs.+High ER class. Time 3 levels of other substance use did not differ with regards to Time 1 class membership.

Next, I explored whether classes identified at Time 2 differed based on concurrent substance use. Adolescents in the Mod. Int./High Ext.+Low ER class used alcohol, tobacco, and marijuana more frequently than youth in the Low Sxs.+High ER class. Adolescents in the Low Int./Mod. Ext.+High ER used alcohol and tobacco more often than youth in the Low Sxs.+High ER class. Adolescents in the Mod. Int./Low Ext.+Low ER class used tobacco, marijuana, and hard drugs more frequently than those in the Low Sxs.+High ER class.

Classes identified at Time 2 also differed based on Time 3 substance use. Adolescents in the Low Int./Mod. Ext.+High ER class at Time 2 used alcohol, tobacco, and hard drugs more frequently at Time 3 than adolescents in the Low Sxs.+High ER class. They also used more alcohol at Time 3 than youth in the Mod. Int./Low Ext.+Low ER class. Further, youth in the Mod. Int./High Ext.+Low ER class used tobacco more often than youth in the Low Sxs.+High ER class. Time 2 classes did not differ based on Time 3 marijuana use.

Table 19.

Omnibus Equality of Means Tests and Follow-Up Pairwise Comparisons for Significant Omnibus Tests for Concurrent and Future Substance Use Behavior (Times 2 and 3) at Times 1 and 2

Effect	Class Means (SD)				χ^2	Post Hoc	ϕ
Time 1	Low Sxs. +High ER (1)	Low Int./ Mod. Ext. + High ER (2)	Mod. Int./ High Ext.+ Low ER (3)	Withdrawn + Mod. ER (4)			
<i>T2 Alcohol</i>	0.38 (0.82)	0.59 (0.92)	0.55 (1.00)	0.49 (0.98)	5.10	NA	0.08
<i>T2 Tobacco</i>	0.31 (0.89)	0.80 (1.20)	0.68 (1.10)	0.59 (1.15)	17.77***	2,3>1	0.15
<i>T2 Marijuana</i>	0.36 (1.04)	0.78 (1.41)	0.82 (1.60)	0.51 (1.29)	9.82*	2,3>1	0.11
<i>T2 Hard Drugs</i>	0.08 (0.29)	0.20 (0.45)	0.11 (0.37)	0.11 (0.36)	4.78	NA	0.08
<i>T3 Alcohol</i>	1.72 (1.35)	2.03 (1.75)	1.74 (1.36)	1.51 (1.50)	3.39	NA	0.07
<i>T3 Tobacco</i>	0.73 (1.21)	1.10 (1.62)	1.08 (1.47)	1.00 (1.48)	7.26	NA	0.10
<i>T3 Marijuana</i>	0.86 (1.79)	1.23 (2.23)	1.10 (1.97)	0.94 (1.98)	2.38	NA	0.06
<i>T3 Hard Drugs</i>	0.17 (0.43)	0.41 (0.70)	0.36 (0.61)	0.33 (0.70)	14.24**	2,3>1	0.14
Time 2	Low Sxs. +High ER (1)	Low Int./ Mod. Ext. + High ER (2)	Mod. Int./ High Ext.+ Low ER (3)	Mod. Int./ Low Ext.+ Low ER (4)			
<i>T2 Alcohol</i>	0.36 (0.73)	0.60 (0.79)	0.70 (0.85)	0.59 (0.91)	12.05**	2,3>1	0.14
<i>T2 Tobacco</i>	0.30 (0.75)	0.69 (1.06)	1.07 (1.28)	0.62 (1.08)	22.65**	2,3,4>1	0.19
<i>T2 Marijuana</i>	0.34 (0.86)	0.65 (1.27)	1.14 (1.51)	0.74 (1.29)	15.82**	3,4>1	0.16
<i>T2 Hard Drugs</i>	0.08 (0.26)	0.15 (0.38)	0.18 (0.44)	0.20 (0.26)	8.06*	4>1	0.11
<i>T3 Alcohol</i>	1.71 (1.34)	2.17 (1.31)	1.72 (1.82)	1.64 (1.05)	7.86*	2>1,4	0.11
<i>T3 Tobacco</i>	0.69 (1.12)	1.05 (1.35)	1.41 (2.02)	0.83 (1.09)	8.48*	2,3>1	0.12
<i>T3 Marijuana</i>	0.82 (1.69)	1.00 (1.87)	1.34 (2.20)	0.92 (1.61)	2.24	NA	0.06
<i>T3 Hard Drugs</i>	0.15 (0.40)	0.31 (0.58)	0.40 (0.70)	0.29 (0.52)	10.11*	2>1	0.13

Note. T2 = Time 2 (Age 16); T3 = Time 3 (Age 25). Hard Drugs = drugs not including alcohol, tobacco, and marijuana (e.g., ecstasy, hallucinogens, heroin, methadone, prescription pain killer pills, barbiturates, inhalants, amphetamine, and cocaine). Low Sxs.+High ER = low internalizing and externalizing symptoms and high emotion regulation (ER) means class; Low Int./Mod. Ext.+ High ER = low internalizing and moderate externalizing symptoms and high ER means class; Mod. Int./High Ext.+Low ER = moderate internalizing and high externalizing symptoms and low ER means class; Withdrawn+Mod. ER = high withdrawn behavior and low other internalizing and externalizing symptoms and moderate ER means class; Mod. Int./Low Ext.+Low ER = moderate internalizing and low externalizing symptoms and low ER means class.

* $p < .05$; ** $p < .01$; *** $p < .001$.

Next, I explored whether classes identified at Times 1 and 2 differed in terms of Time 3 SWB (see Table 20). Time 2, but not Time 1, classes differed based on Time 3 subjective wellbeing. Specifically, adolescents in the Low Int./Mod. Ext.+High ER and Low Sxs.+High ER classes at Time 2 experienced greater levels of SWB than those in the Mod. Int./Low Ext.+Low ER and Mod. Int./High Ext.+Low ER classes.

I also examined whether Time 3 adaptive functioning in several domains differed across Time 1 and 2 classes (see Table 20). At Time 1, youth in the Low Sxs.+High ER, Low Int./Mod. Ext.+High ER, and Mod. Int./High Ext.+Low ER classes experienced greater competence in the friend domain than youth in the Withdrawn+Mod. ER class. Youth in the Low Sxs.+High ER class displayed greater occupational functioning at Time 3 than youth in the Low Int./Mod. Ext.+High ER and Withdrawn+Mod. ER classes. Further, youth in the Low Sxs.+High ER class achieved higher levels of education by Time 3 than youth in the Low Int./Mod. Ext.+Low ER class. Time 1 classes did not differ on Time 3 adaptive functioning in the family or spouse/partner domains.

Adolescents in the Low Sxs.+High ER class at Time 2 experienced greater occupational adaptive functioning at Time 3 than adolescents in the Mod. Int./Low Ext.+Low ER class. Time 2 classes did not differ based on Time 3 adaptive functioning in the friends, family, or spouse/partner domains. They also did not differ based on level of education achieved.

Table 20.

Omnibus Equality of Means Tests and Follow-Up Pairwise Comparisons for Significant Omnibus Tests for Time 3 (Age 25) Subjective Wellbeing and Adaptive Functioning at Times 1 (Age 10-12) and 2 (Age 16)

Effect	Class Means (SD)				χ^2	Post Hoc	ϕ
Time 1	Low Sxs. +High ER (1)	Low Int./ Mod. Ext. + High ER (2)	Mod. Int./ High Ext.+ Low ER (3)	Withdrawn+ Mod. ER (4)			
<i>T3 Subjective Wellbeing</i>	18.11 (7.01)	17.01 (6.71)	17.10 (9.22)	15.51 (8.88)	6.14	NA	0.09
<i>T3 Friends</i>	49.12 (10.27)	48.24 (11.51)	48.57 (11.38)	43.89 (13.25)	8.60*	1,2,3>4	0.11
<i>T3 Job</i>	50.20 (8.80)	46.50 (12.20)	48.01 (11.70)	45.43 (11.75)	15.23**	1>2,4	0.14
<i>T3 Family</i>	49.32 (9.59)	48.76 (10.66)	48.06 (10.01)	47.40 (12.69)	1.93	NA	0.05
<i>T3 Spouse/ Partner</i>	49.80 (17.18)	48.77 (14.81)	46.40 (17.54)	45.47 (20.81)	3.84	NA	0.07
<i>T3 Education</i>	4.96 (2.05)	4.46 (2.62)	4.09 (1.49)	4.48 (2.51)	17.32**	1>3	0.15
Time 2	Low Sxs. +High ER (1)	Low Int./ Mod. Ext. + High ER (2)	Mod. Int./ High Ext.+ Low ER (3)	Mod. Int./ Low Ext.+ Low ER (4)			
<i>T3 Subjective Wellbeing</i>	18.32 (6.46)	19.38 (5.51)	12.78 (9.96)	14.20 (8.29)	23.07***	1,2>3,4	0.19
<i>T3 Friends</i>	48.66 (10.11)	50.71 (9.42)	49.29 (7.27)	46.22 (9.80)	6.24	NA	0.10
<i>T3 Job</i>	50.10 (8.70)	47.94 (9.17)	48.30 (10.88)	45.92 (9.03)	11.93**	1>4	0.14
<i>T3 Family</i>	49.65 (8.92)	48.98 (8.95)	48.69 (9.79)	45.86 (11.56)	5.09	NA	0.09
<i>T3 Spouse/ Partner</i>	49.85 (14.75)	52.00 (20.66)	43.50 (18.98)	50.04 (13.63)	4.07	NA	0.08
<i>T3 Education</i>	4.85 (2.00)	4.88 (1.93)	4.17 (2.63)	4.84 (2.09)	2.03	NA	0.06

Note. T3 = Time 3 (Age 25). Friends = adaptive functioning in friendships (T-score, higher scores indicate better functioning); Job = adaptive functioning in occupation (T-score, higher scores indicate better functioning); Family = adaptive functioning in family of origin (T-score, higher scores indicate better functioning); Spouse/Partner = adaptive functioning in romantic partner relationship (T-score, higher scores indicate better functioning); Education = highest level of education achieved. Low Sxs.+High ER = low internalizing and externalizing symptoms and high emotion regulation (ER) means class; Low Int./Mod. Ext.+High ER = low internalizing and moderate externalizing symptoms and high ER means class; Mod. Int./High Ext.+Low ER = moderate internalizing and high externalizing symptoms and low ER means class; Withdrawn+Mod. ER = high withdrawn behavior and low other internalizing and externalizing symptoms and moderate ER means class; Mod. Int./Low Ext.+Low ER = moderate internalizing and low externalizing symptoms and low ER means class.

* $p < .05$; ** $p < .01$; *** $p < .001$.

CHAPTER 4

DISCUSSION

Certain aspects of the relations among internalizing and externalizing behaviors, ER, and SWB have been established, but little research has examined these constructs together from childhood to young adulthood using a prospective model and considering potential contributions of parenting and substance use during development. The current study addressed these gaps by (a) identifying profiles of internalizing and externalizing behaviors and ER, (b) observing transitions among classes over time from late childhood to middle adolescence, (c) examining whether particular youth profiles were associated with SWB and adaptive functioning outcomes in early adulthood, and (d) determining whether parenting factors and substance use buffer or exacerbate risk for various developmental outcomes. Results shed light on the influences of these child-specific and contextual factors across late childhood, middle adolescence, and early adulthood. Further, findings can aid in informing targeted, preventive interventions among youth to promote positive functioning and adjustment in young adulthood and beyond.

Aim 1: Identification of Classes of Internalizing and Externalizing Symptoms and Emotion Regulation

Use of a person-centered approach to identify classes of youth based on internalizing and externalizing behaviors and ER and allowed for identification of relatively homogeneous developmental profiles that differ in terms of the frequency and quality of youth behavior and symptoms. Results were largely consistent with hypotheses and were consistent with established understanding of developmental pathways. A large body of literature examines co-occurring internalizing and externalizing symptoms using

a person-centered approach (e.g., DiStefano & Kamphaus, 2006; Krueger, Markon, Patrick, & Iacono, 2005; Olino, Klein, Farmer, Seeley, & Lewinsohn, 2012a; Tolan & Henry, 1996; Vaidyanathan, Patrick, & Iacono, 2011), and a small but growing body of research examines co-occurring symptoms across time among preschool and school-aged children (Connell et al., 2008; Fanti & Henrich, 2010; Gilliom & Shaw, 2004; Keiley, Bates, Dodge, & Pettit, 2000). However, there is a lack of literature examining co-occurring internalizing and externalizing symptoms concurrently across time among adolescents, a gap that the present study sought to address. Further, I do not know of any published studies to date that have examined symptoms and ER concurrently, a gap in the literature that the present study sought to address.

At ages 10-12, four classes emerged as hypothesized. As expected, a large Low Sxs.+High ER class was identified, representing typically developing youth with low levels of internalizing and externalizing behaviors and relatively high ER. Although it was expected that combinations of low or high externalizing symptoms and ER would characterize the other classes, those identified were more nuanced in their symptom profiles than predicted. The second largest class was the Low Int./Mod. Ext.+High ER class, which was characterized by low levels of depressed, schizoid/anxious, and social withdrawal symptoms, moderate levels of hyperactive, aggressive, and delinquent symptoms, and relatively high ER. The presence of well-developed ER in this class was surprising given that children with externalizing problems generally exhibit deficits in addressing anger or responding to external stimuli (Barkley, 1997; Calkins, 1994; Frick & Morris, 2004; Hinshaw, 2003; Kochanska & Knaack, 2003; Martel & Nigg, 2006; Melnick & Hinshaw, 2000; Sobanski et al., 2010). This discrepancy from previous

literature may be due to the focus of the ER measure used, which was more related to mood and temperament than typical conceptualizations of behavioral or cognitive ER.

A third class, the Mod. Int./High Ext.+Low ER class, evidenced moderate internalizing symptoms and high externalizing symptoms. ER in this class was low. This profile of youth is consistent with a large body of cross-sectional and longitudinal research indicating that externalizing and internalizing problems commonly co-occur among youth (e.g., Drabick et al., 2006; Lilienfeld, 2003; Oland & Shaw, 2005). Finally, a Withdrawn+Mod. ER class demonstrated high social withdrawal, moderate hyperactivity, low levels of schizoid/anxious, depressed, aggressive and delinquent behaviors, and moderate ER. Youth in this class are likely similar to children who present with ADHD-like symptoms and also experience peer difficulties because of difficulty with self-regulation (e.g., Murray-Close et al., 2010). Further, the presence of elevated hyperactivity without elevations in other externalizing domains supports prior research using the CBCL indicating that youth may experience difficulties with attention, hyperactivity, and impulsivity without experiencing other externalizing problems such as aggression or rule-breaking behavior, but that youth who experience aggression or rule-breaking behavior are also likely to experience difficulties with attention, hyperactivity, and impulsivity (de Nijs, van Lier, Verhulst, & Ferdinand, 2007).

At age 16, similar classes emerged in the LCA. Contrary to hypotheses and prior research (e.g., John & Gross, 2004), the mean level of ER in the sample did not increase from Time 1 to Time 2 and, in fact, evidenced a slight decrease. This lack of increase in ER over time may be due to informant discrepancies. Mothers reported on ER at Time 1 and index children self-reported on ER at Time 2, and index children reported slightly

lower mean ER levels than mothers at Time 1 when reports from both informants were available. Mother- and youth self-report methods of identifying ER have both demonstrated convergent validity with other methods of measuring ER (e.g., psychophysiology, observational data; Carlson & Wang, 2007; Vasilev, Crowell, Beauchaine, Mead, & Gatzke-Kopp, 2009), but do not correlate reliably with one another because of individual differences (e.g., parents and children may vary in their perception of the frequency of certain behaviors) in reporting (e.g., Lengua, 2002), a phenomenon that is not unique to the study of ER (e.g., Sourander, Helstelä, & Helenius, 1999). Nonetheless, important differences in mean levels of ER within two of the classes were apparent at Time 2 as compared with Time 1, which will be discussed further below.

The four classes identified at Time 2 were similar in nature (i.e., low symptoms, mainly internalizing, mainly externalizing, and both internalizing and externalizing) to those identified by Vaidyanathan and colleagues (2011) and Olino and colleagues (2012a), who considered *DSM-III-R* (American Psychiatric Association, 1987) and *DSM-IV* (American Psychiatric Association, 1994) diagnoses, a wider range of internalizing and externalizing diagnoses, and lifetime diagnoses up to early adulthood (Olino et al., 2012a) or middle to late adulthood (Vaidyanathan et al., 2011). Notably, however, Vaidyanathan and colleagues (2011) identified two class mainly identified by internalizing problems, bringing their total classes identified to five. As expected, in the current study, the largest class at age 16 displayed low symptoms in each domain (anxious/depressed, withdrawn, attention problems, aggressive behavior, delinquent behavior) and high ER. The Low Int./Mod. Ext.+High ER class continued to display low levels of anxious/depressed and withdrawn behaviors, and moderate levels of aggressive

and delinquent behaviors. Attention problems were measured for the first time at age 16, and adolescents in this class evidenced low scores on this subscale. The attention problems subscale at age 16 contained several items indexing hyperactive and impulsive symptoms, but primarily indexed symptoms of inattention. ER in this class was very similar to that in the Low Sxs.+High ER class, whereas Time 1 ER in this class was slightly lower than that of the Time 1 Low Sxs.+High ER class. It may be that the aggressive and delinquent behaviors displayed in this class are more related to associations with deviant peers (e.g., Dishion, Spracklen, Andrews, & Patterson, 1996) than deficits in ER. At age 16, the Mod. Int./High Ext.+Low ER class evidenced a similar symptom pattern to the Mod. Int./High Ext.+Low ER class at Time 1. However, ER dropped markedly. At Time 1, mean ER in this class was .74 *SDs* below the sample mean, whereas at Time 2, ER was 1.14 *SDs* below the sample mean. This decrease may suggest greater impairment among youth in this group at Time 2, and/or may be due to measurement discrepancies between parent and youth report of ER, given that different reporters were used at each time point and an overall decrement in ER was reported from Time 1 to Time 2 across all classes.

Finally, a different class emerged at Time 2 (Mod. Int./Low Ext.+Low ER) that evidenced moderate levels of anxious/depressed and withdrawn behaviors and low levels of attention problems and aggressive and delinquent behaviors. ER in this class was low at .79 *SDs* below the sample mean, consistent with prior research demonstrating that internalizing problems are associated with deficits in ER (e.g., Esbjørn et al., 2012; Silk et al., 2003). This class may be considered an internalizing class of youth, supporting the well-established finding that anxiety and depression symptoms frequently co-occur

(Angold et al., 1999a). The emergence of this class of adolescents is not surprising given the normative increase in internalizing symptoms during adolescence (Costello, et al., 2003). Although this increase is particularly prevalent among females (Hayward & Sanborn, 2002; Nolen-Hoeksema & Girgus, 1994), girls were not more likely to be in the Mod. Int./Low Ext.+Low ER class than other identified classes. No sex differences were present among Time 2 classes.

Aim 2: Stability of Class Membership across Times 1 and 2

Youth in the Low Sxs.+High ER class evidenced a high level of stability, with many of these youth remaining in this class at Age 16. This pattern represents typically developing youth with low levels of internalizing and externalizing symptoms and high ER. However, low levels of stability were evidenced among youth in the Low Int./Mod. Ext.+High ER and Mod. Int./High Ext.+Low ER classes at Time 1. Most of the youth in the Low Int./Mod. Ext.+High ER class moved to the Low Sxs.+High ER class at Time 2. This transition likely represents a subgroup of youth who experienced a developmentally normative decline in externalizing behaviors such as hyperactivity and aggression that has been established in prior research (Loeber, 1982; Mick, Faraone & Biederman, 2004). This developmental pattern is also evident when examining transitions among youth in the Mod. Int./High Ext.+Low ER class at Time 1. Although some of these youth remained in the same class at Time 2, indicating developmental stability among these individuals, many of them transitioned to classes characterized by lower levels of externalizing behaviors.

With regard to transitions in terms of internalizing behaviors, about two thirds of these youth evidenced an attenuation of internalizing symptoms, whereas about one third

continued to display moderate internalizing symptoms. Youth in the Time 1 Withdrawn+Mod. ER class largely transitioned to the Low Sxs.+High ER class at Time 2. This transition pattern also may be related to our understanding of normative decreases in hyperactivity as described above. Youth in the Withdrawn+Mod. ER exhibited moderate hyperactivity at Time 1, which may have contributed to the high levels of social withdrawal, as discussed above. Some youth who exhibit ADHD-like symptoms also experience peer difficulties because of poor self-regulation (e.g., Murray-Close et al., 2010). With decreases in hyperactivity in middle adolescence, we may in turn expect a reduction in peer difficulties and thus social withdrawal symptoms, and hence a transition to the Low Sxs.+High ER class would be expected.

Aim 3: Parenting Behaviors as Predictors of Transitions among Classes

Both paternal and maternal parenting behaviors differed across class at ages 10-12 and age 16 as evidenced by auxiliary analyses. Predictors differed the most by class at Time 1, the point at which parenting behaviors were assessed. At Time 1, as expected, paternal and maternal acceptance, control through guilt, control through anxiety, and paternal child-centeredness differed among classes in expected directions (i.e., classes characterized by elevated internalizing and/or externalizing symptoms and poorer ER had higher levels of negative parenting behaviors, and classes characterized by lower symptom levels and higher ER had higher levels of positive parenting behaviors). However, maternal child-centeredness and maternal and paternal lax discipline and nonenforcement of rules did not differ among classes at Time 1. Overall, the Low Sxs.+High ER class experienced more acceptance and less negative parenting behaviors (control through guilt and anxiety) than other classes, as hypothesized. This pattern of

findings is consistent with prior research demonstrating that youth who perceive their parents as high in warmth and positive control and low in psychological control are better adjusted than youth whose parents are low in warmth and/or positive control and/or high in psychological control (Barber, 1996; Lamborn, Mounts, Steinberg, & Dornbusch, 1991; Schaefer, 1965; Steinberg, Lamborn, Dornbusch & Darling, 1992).

Interestingly, youth in the Withdrawn+Mod. ER at Time 1 class evidenced greater paternal and maternal acceptance than youth in the Mod. Int./High Ext.+Low ER and Low Int./Mod. Ext.+High ER (maternal acceptance only) classes. It may be that fathers and mothers whose children exhibit withdrawn behaviors are concerned about their children's peer functioning and thus are more available for emotional support; moreover, these parents might focus more on these children in terms of planning special time with them given that children may have fewer opportunities for positive peer interactions. Relations among parental acceptance youth withdrawn behaviors are likely bidirectional, wherein children experiencing difficulty with peers also may elicit more support and seek more interaction from parents than children who have more successful peer relationships. Additionally, it should be noted that reports of parental behaviors were derived from youth participants. Thus, another potential explanation for this pattern of findings is that parents' accepting behaviors may be more salient to children in the Withdrawn+Mod. ER class than youth in other classes who may have other opportunities for social reinforcement and positive interpersonal interactions, and in turn youth in the Withdrawn+Mod. ER class may be more likely to rate their parents as high on these behaviors.

In terms of parental psychological control, youth in the Low Int./Mod. Ext.+High ER class experienced less paternal and maternal control through guilt than youth in the Mod. Int./High Ext.+Low ER class. Relations among parental control through guilt and elevated externalizing symptoms are likely also bidirectional, wherein poor parenting may exacerbate child symptoms and poor behavior, and child symptoms and negative behaviors may elicit more coercive parenting (Patterson, 1982; Granic & Patterson, 2006). In considering relations among elevated child internalizing symptoms and parental control through guilt, findings support established research demonstrating similar patterns of positive associations among anxiety, depression, and parental psychological control (e.g., Alloy et al., 2001; Barber, 1996; Rapee, 1997).

Lack of mean differences across classes for parental lax discipline and nonenforcement of rules was contrary to hypotheses. A large body of literature has demonstrated that inconsistent parenting is associated with depression, anxiety, ADHD, and behavior problems (e.g., Chorpita & Barlow, 1998; Drabick, Gadow, & Sprafkin, 2006; Johnston & Mash, 2001; Ostrander & Herman, 2006). It may be that the unpredictability of inconsistent parenting is the key ingredient in this association, rather than simply parenting characterized by leniency. Because of the wording in the parenting measure used in the current study, inconsistency as it is typically conceptualized as a construct (i.e., disparate use of reward and punishment in response to child behavior over time and between parents; Gardner, 1989; Stormshak, Bierman, McMahon, & Lengua, 2000) may not have been captured in these subscales (e.g., “My father excuses the bad things I do,” “My mother doesn’t pay much attention to my bad behavior”). Indeed, the

lax discipline and nonenforcement of rules subscales are likely more related to lenient or uninvolved parenting than to inconsistent parenting.

Fewer differences in levels of Time 1 parenting behaviors across Time 2 classes were found, suggesting that, not surprisingly, parenting behavior indexed in late childhood is more differentially associated with childhood than adolescent patterns of behavior. However, certain Time 1 parenting behaviors did differ across Time 2 classes: paternal acceptance, parental control through guilt and anxiety, and maternal nonenforcement of rules. Thus, as described below, certain types of parenting behaviors are associated with differential outcomes in middle adolescence, and thus should be targets for intervention. As was the case at Time 1, paternal acceptance measured at ages 10-12 was higher in the Time 2 (age 16) Low Sxs.+High ER class than in the (a) Low Int./Mod. Ext.+High ER and (b) Mod. Int./Low Ext.+Low ER class. Classes identified at age 16 did not differ in terms of childhood maternal acceptance and parental child-centeredness, unlike classes identified at ages 10-12. In terms of parental control through guilt and anxiety, Time 2 patterns were similar to those at Time 1 with classes evidencing moderate and high rates of externalizing problems experiencing higher rates of negative control, demonstrating that these associations between youth externalizing problems and parental negative control may hold across developmental periods (Capaldi & Patterson, 1991; Forehand & Nousiainen, 1993; Pettit et al., 2001).

Interestingly, maternal nonenforcement of rules was higher in the Mod. Int./High Ext.+Low ER class than in the Low Sxs.+High ER class at Time 2, supporting prior research demonstrating negative associations among parental monitoring and adolescent problem behavior (e.g., Pettit, Laird, Dodge, Bates, & Criss, 2001). Similar to Time 1,

levels of paternal nonenforcement of rules and both paternal and maternal lax discipline did not differ among Time 2 classes of youth.

Parenting behaviors predicted transitions among classes from Time 1 to Time 2 (e.g., Tables 7-18), with interesting patterns emerging suggesting that each parenting behavior may confer risk or resilience differentially in transitions. When parental acceptance was high, youth in the Withdrawn+Mod. ER and Mod. Int./High Ext.+Low ER classes were more likely to transition to the Time 2 Low Sxs.+High ER class than when parental acceptance was low. This finding is consistent with hypotheses and supports research demonstrating that parental warmth, acceptance, and child-centeredness are linked to lower levels of internalizing and externalizing behaviors (e.g., Hipwell et al., 2008; Rothbaum & Weisz, 1994). However, youth in the Low Int./Mod. Ext.+High ER class were more likely to transition to the Low Sxs.+High ER class when parental acceptance was low rather than high. Among youth higher in externalizing problems, very high parental acceptance may promote the stability of negative behaviors, thus maintaining them over time. For example, parents high in acceptance may inadvertently reward negative externalizing behavior such as aggression by acknowledging and supporting youths' maladaptive expression of angry emotion.

Patterns were similar when examining transition probabilities among youth experiencing high and low parental child-centeredness. For instance, youth were more likely to move from the Mod. Int./High Ext.+Low ER class to the Low Int./Mod. Ext.+High ER class (demonstrating a decrease in symptoms) when parental child-centeredness was high rather than low. Further, youth in the Withdrawn+Mod. ER class were more likely to move to the Low Sxs.+High ER class at Time 2 when paternal and

maternal child-centeredness were high rather than low. Child-centeredness involves positive attention, support, and warmth from parents, which is associated with attenuated internalizing and externalizing symptoms among youth (Muris, Meesters, & van den Berg, 2003). However, contrary to hypotheses but similar to findings regarding parental acceptance, youth in the Low Int./Mod. Ext.+High ER class were more likely to transition to the Low Sxs.+High ER class when parental child-centeredness was low rather than high. As noted, very high parental acceptance may promote the maintenance of negative behaviors among youth higher in externalizing problems. Thus, in the context low levels of child-centeredness, wherein parents less frequently attend to, focus on, and organize themselves around children, youth's negative externalizing behaviors may be less likely to be reinforced by parental attention, resulting in decreases in such behaviors.

In examining transition probabilities among youth whose parents were high and low in parental use of control through both guilt and anxiety, children were more likely to move to classes characterized by lower levels of symptoms when parental control was low. For example, youth in the Mod. Int./High Ext.+Low ER class were more likely to transition to the Low Sxs.+High ER or Low Int./Mod. Ext.+High ER classes when paternal and maternal control through guilt or anxiety was low rather than high. Youth were more likely to stay in classes characterized by moderate or high internalizing or externalizing symptoms or move to a class characterized by higher symptom levels when parental control through guilt or anxiety was high. These patterns are consistent with hypotheses and research demonstrating that youth whose parents engage in psychological control may experience elevated rates of anxiety and depression (e.g., Alloy et al., 2001; Barber, 1996; Rudolph et al., 2008), whereas youth whose parents grant appropriate

autonomy may experience decreases in internalizing and/or externalizing symptoms (Dorsey & Forehand, 2003; McLeod et al., 2007).

Findings relating to differential transition probabilities among youth experiencing high and low parental lax discipline were largely consistent with hypotheses. In general, youth who experienced low parental lax discipline (i.e., strict discipline) were more likely to move to the Low Sxs.+High ER class or a class characterized by lower symptom levels (e.g., move from Mod. Int./High Ext.+Low ER to Low Int./Mod. Ext.+High ER) than youth who experienced high parental lax discipline. These transition patterns were particularly true among youth experiencing high levels of externalizing symptoms at Time 1, which is consistent with research reporting an association between firm discipline/rule enforcement and lower levels of externalizing symptoms (e.g., Bates, Pettit, & Dodge, 1995; Dishion & McMahon, 1998). Notably, youth in the Low Int./Mod. Ext.+High ER class evidenced a slightly different pattern with regard to paternal lax discipline, with a higher chance of transitioning to the Low Sxs.+High ER class when paternal lax discipline was high rather than low. However, youth in this class were also more likely to transition to the Mod. Int./High Ext.+Low ER or the Mod. Int./Low Ext.+Low ER classes when parental lax discipline was high. This pattern supports existing research but suggests that whereas lax discipline may exacerbate externalizing problems in some cases (e.g., Dishion & McMahon, 1998), firm discipline may attenuate but not alleviate externalizing symptoms among some youth with symptom profiles characterized by moderate externalizing symptoms.

In terms of high and low parental nonenforcement of rules, differences in transition probabilities were most pronounced among the Low Int./Mod. Ext.+High ER

class. Youth in this class were more likely to move to the Low Sxs.+High ER class when parental nonenforcement of rules was low (i.e., parents consistently enforced rules), a finding consistent with literature suggesting negative associations among parental monitoring and adolescent problem behavior (e.g., Pettit, Laird, Dodge, Bates, & Criss, 2001). Distinctions among transition probabilities associated with high and low parental nonenforcement were less marked among youth in other classes at Time 1, suggesting that consistent enforcement of rules may be most beneficial among youth experiencing moderate levels of externalizing problems in late childhood.

In sum, patterns of transitions among youth demonstrate that higher levels of positive parenting behaviors (e.g., acceptance, child-centeredness) and lower levels of negative parenting behaviors (e.g., control through guilt and anxiety, lax discipline, nonenforcement of rules) are generally associated with transitions to classes characterized by lower levels of internalizing and externalizing symptoms and higher levels of ER. However, results suggest that there are exceptions to these associations among certain subgroups of youth (e.g., among youth in the Low. Int./Mod. Ext.+High ER class, higher acceptance and child-centeredness were associated with moving to classes with higher symptom levels and poorer ER).

Aim 4: Concurrent Substance Use; and Levels of Subjective Wellbeing, Interpersonal, Occupational, and Educational Adaptive Functioning, and Substance Use In Early Adulthood

Examination of whether substance use at Times 2 and 3 differed among classes at Times 1 and 2 revealed interesting patterns. Youth in the Time 1 Low Int./Mod. Ext.+High ER and Mod. Int./High Ext.+Low ER classes used tobacco and marijuana at

Time 2 and hard drugs at Time 3 at higher rates than youth who were in the Low Sxs.+High ER class at Time 1. However, Time 1 classes did not differ in terms of Time 2 alcohol and hard drug use or Time 3 alcohol, tobacco, or marijuana use. These findings support research demonstrating that youth higher in externalizing behaviors such as sensation seeking, risk taking, and impulsivity may be more likely to engage in illegal behaviors such as tobacco and marijuana use in middle adolescence, and hard drugs in early adulthood (Collado, Felton, MacPherson, & Lejuez, 2014).

In examining results relating to concurrent substance use at Time 2, it is apparent that youth in the Low Sxs.+High ER class are less likely to use substances than youth in the other classes. Adolescents in the Mod. Int./High Ext.+Low ER class used alcohol, tobacco, and marijuana more frequently than youth in the Low Sxs.+High ER class, and adolescents in the Low Int./Mod. Ext.+High ER class used alcohol and tobacco more often than youth in the Low Sxs.+High ER class. This pattern of results is not surprising given that substance use is a symptom of delinquent behavior on the YSR and also is associated with other characteristics of externalizing problems such as risk taking and impulsivity (Collado, Felton, MacPherson, & Lejuez, 2014). However, adolescents in the Mod. Int./Low Ext.+Low ER class were also more likely to use tobacco, marijuana, and hard drugs than those in the Low Sxs.+High ER class. Prior research has been equivocal regarding the association between internalizing problems and substance use among adolescents, with some studies suggesting that internalizing problems serve as a protective factor against adolescent substance use (e.g., Colder et al., 2013; Scalco et al., 2014) and others suggesting that earlier substance use may confer risk for later internalizing problems, particularly among females (e.g., Miettunen et al., 2014). Other

research has suggested that internalizing problems may predict later substance youth among adolescents and young adults (Abraham & Fava, 1999; King, Iacono, & McGue, 2004; Zimmerman et al., 2003). Current findings provide evidence for concurrent associations between internalizing problems and substance use; however, the Time 2 Mod. Int./Low Ext.+Low ER class did not differ from other Time 2 classes on levels of Time 3 substance use.

In terms of prospective substance use, classes with elevated externalizing symptoms at Time 2 reportedly used substances more frequently at Time 3, again likely demonstrating relations among externalizing behaviors (e.g., impulsivity) and substance use. Adolescents in the Low Int./Mod. Ext.+High ER class at Time 2 used alcohol, tobacco, and hard drugs more frequently at Time 3 than adolescents in the Low Sxs.+High ER class. They also used more alcohol at Time 3 than youth in the Mod. Int./Low Ext.+Low ER class. Further, youth in the Mod. Int./High Ext.+Low ER class used tobacco more often than youth in the Low Sxs.+High ER class, supporting prior research demonstrating associations among co-occurring internalizing and externalizing problems and substance use (Colder et al., 2013).

Overall, results inform understanding of how earlier processes and individual characteristics confer risk for substance use. When concurrent substance use was examined at Time 2, each substance category differed significantly across classes, with youth in the Low Sxs.+High ER class generally less likely to use substances. However, when prospective substance use was examined, only certain types of substance use differed across classes (e.g., Time 3 tobacco but not marijuana use differed across classes), suggesting that future substance use is not always differentially associated with

youth symptom profiles. Findings underscore the importance of considering substance use within the context of typical development and across developmental periods that might be characterized by normative changes in substance use levels (Niemelä et al., 2006). Nevertheless, the current model does not fully represent normative levels of substance use, and thus substance use outcomes should not necessarily be considered problematic in all instances. Prior research has supported the notion that low levels of substance use during adolescence may not be indicative of later adjustment problems (e.g., Niemelä et al., 2006; Shedler & Block, 1990), but rather a developmentally normative task that facilitates learning to handle use as part of a culturally sanctioned social ritual (e.g., Baumrind & Moselle, 1985), establishing a unique identity from parents (Bukstein, Clancy, & Kaminer, 1992), assuming adult roles (Newcomb & Bentler, 1988), and developing and maintaining peer relations (Baumrind & Moselle, 1985). Future research should seek to examine such processes while accounting for normative and atypical levels of substance use.

Associations among class membership, SWB, and adaptive functioning also were examined. In terms of SWB, adolescents in the Low Int./Mod. Ext.+High ER and Low Sxs.+High ER classes at Time 2 experienced greater levels of SWB at Time 3 than those in the Mod. Int./Low Ext.+Low ER and Mod. Int./High Ext.+Low ER classes. Given that SWB involves higher levels of positive affect and lower levels of negative affect (Diener, 2000), it is not surprising that SWB was higher in classes characterized by low internalizing problems and high ER. The presence of elevated SWB among a class with moderate externalizing symptoms lends support to the notion that SWB is not simply the absence of psychopathology (Greenspoon & Saklofske, 2001; Keyes, 2002; Sanjuán &

Magallares, 2013). Further, and perhaps most interestingly, it supports research suggesting that some characteristics of externalizing behaviors in adolescence such as a heightened reward drive and disinhibition are associated with positive outcomes in adulthood (Gullo & Dawe, 2008; Shiner, 2000; Shiner, Masten, & Roberts, 2003).

Interestingly, Time 1 classes demonstrated more differences in Time 3 adaptive functioning than Time 2 classes. Youth in the Low Sxs.+High ER, Low Int./Mod. Ext.+High ER, and Mod. Int./High Ext.+Low ER classes at Time 1 experienced greater competence in the friend domain than youth in the Withdrawn+Mod. ER class. Given that externalizing behaviors can be associated with heightened reward drive, this finding may support the notion that reward-driven individuals might experience success in interpersonal relationships if they find social interaction sufficiently motivating and rewarding (Steinberg, 2008). However, reward sensitivity was not specifically assessed; therefore, further research would be needed to fully parse the underpinnings of these differential associations among symptom classes and friendship competence. Moreover, given that the Withdrawn+Mod. ER class was characterized in part by elevated scores on the Withdrawn+Mod. ER subscale, which includes items related to peer difficulties, lower levels of competence in the friend domain in this class suggests some stability in interpersonal difficulties over time. In terms of Time 3 occupational functioning, individuals in the Time 1 Low Sxs.+High ER class displayed higher levels than youth in the Time 1 Low Int./Mod. Ext.+High ER and Withdrawn+Mod. ER classes. In addition, adolescents in the Time 2 Low Sxs.+High ER class experienced greater occupational adaptive functioning at Time 3 than adolescents in the Time 2 Mod. Int./Low Ext.+Low ER class. Further, youth in the Low Sxs.+High ER class at Time 1 achieved higher

levels of education by Time 3 than youth in the Low Int./Mod. Ext.+Low ER class. None of the classes at Time 1 or 2 demonstrated differences in functioning in the family or spouse/partner domains. In sum, when Time 1 and 2 classes were differentially associated with Time 3 domains of adaptive functioning, the Low Sxs.+High ER class generally, though not always, demonstrated the highest levels of adaptive functioning. However, not all domains of adaptive functioning were differentially associated with Time 1 and/or Time 2 classes, suggesting differential patterns of associations that require replication and further examination in future research to increase understanding of individual differences among youth symptoms and adult adaptive outcomes.

Strengths, Limitations, and Future Directions

There were several methodological strengths in the current study. For one, the CEDAR dataset provided longitudinal data spanning late childhood, middle adolescence, and early adulthood with repeated measures at several time points. This prospective design allowed for an examination of developmental profiles of youth symptoms and behaviors, as well as family factors. Further, the use of a person-centered approach for identifying classes of youth based on internalizing and externalizing symptoms and ER afforded the opportunity to consider developmentally typical and atypical patterns of these behaviors. The consideration of parenting behaviors as predictors of class stability and transitions allowed for an evaluation of contextual processes that may be associated with developmental changes in symptom and ER presentations. The examination of other contextual factors (e.g., peers, school, neighborhood) that exert increasing and more proximal influence during the adolescent period beyond transitions potentially attributable to parenting behaviors would help to further elucidate changes in youth

profiles (Drabick & Steinberg, 2011). Consideration of transactional processes between youth and their contexts is an important component of the developmental psychopathology perspective and is crucial for informing our understanding of youth behavior (e.g., Rutter & Sroufe, 2000; Sameroff, 2009; Steinberg & Avenevoli, 2000).

Further, the examination of concurrent and future substance use among childhood and adolescent classes furthers our understanding of problematic versus developmentally normative substance use, an important area for public health and targeted intervention. Additionally, the present study's examination of SWB and adaptive functioning in early adulthood as outcomes allows for consideration of psychological symptoms and ER within the context of positive functioning, rather than considering the absence of psychological symptoms as a proxy for positive functioning (Diener, Suh, Lucas, & Smith; 1999; Park, 2004). Overall, the present study furthers our understanding of normative development in several important domains of risk and resilience during childhood and adolescence and our understanding of how these domains are associated with developmental outcomes in terms of wellbeing and adaptive functioning in young adulthood. This approach allows for a more holistic view of mental health with the goal of better supporting positive youth development.

Despite these strengths, the present study has several limitations. First, T-scores were used to index symptoms on the CBCL and YSR to (a) examine symptoms within the context of typical development because T-scores are based on normative data and (b) be able to compare Time 1 and Time 2 symptoms despite the use of different versions of the report form and different reporters. However, the use of the T-scores precludes the ability to examine changes in raw score symptom levels over time given that reports

derived from different ages are anchored to those ages. Thus, reductions or increases in subscale raw scores over time would not be reflected in changes in normative data, as normative data should take into account developmentally expected changes in symptom levels. For example, had identical report forms been available at Time 1 and Time 2, the use of raw scores would allow for an analysis of whether internalizing symptoms increased over time as would be anticipated based on developmentally expected increases in these symptoms (Costello et al., 2003). Second, the measure of ER was related to temperamental positive mood and thus a proxy for ER. Given the use of this index, it is not surprising that mean levels of ER among classes tended to be more consistent with internalizing than externalizing symptoms (i.e., when internalizing symptoms were elevated, ER tended to be lower). Other measures that also assess behavioral and cognitive ER may better index the construct, but they were not used with the present sample. Third, although the use of multiple informants was a strength, the use of parent report on child symptoms and ER at Time 1 and youth self-report on symptoms and ER at Time 2 may have created some discrepancies in symptom levels and youth ER abilities; however, research suggests that parent report may be more accurate in childhood and youth report more accurate in adolescence (De Los Reyes & Kazdin, 2005), consistent with the present study design. Further, as discussed, the use of T-scores based on parent-reported and youth-reported normative data to index symptom categories may attenuate differences attributable to informant discrepancies. Nonetheless, though class transitions were largely consistent with hypotheses, the possibility exists that observed transitions among classes from Time 1 to Time 2 were partially a function of the use of different

informants. Last, the sample was predominantly male; therefore, results may be more applicable to males.

The LCAs in the present study allow for examination of symptom profiles and ER among children and adolescents. They provide insight into typical and atypical development, and in combination with analyses related to correlates, predictors, and outcomes, help to inform our understanding of risk and resilience among youth. However, when examining results, it is important to take into account that the CBCL and YSR are not *DSM*-referenced scales. Though they are widely used and well-validated instruments (e.g., Doyle et al., 2007; Petty et al., 2008), they are not a substitute for structured diagnostic interviews or *DSM*-referenced instruments when diagnosing psychopathology. Therefore, youth with elevated symptom areas should not be considered to meet full or subthreshold diagnostic criteria for a particular diagnosis. However, understanding such profiles is nonetheless important as it is well-established that youth experiencing even some symptoms of a disorder may evidence impairment (e.g., Angold et al., 1999b).

Future studies should seek to replicate the current results in more diverse, representative samples with a greater balance of males and females. Replication of LCA classes at Time 2 is particularly important given that one class is relatively small at this time point. Further, additional predictors of stability and transitions among classes should be examined, given that other contextual factors such as peer relations (Deater-Deckard, 2001), neighborhood factors (Butler et al., 2012), and parental psychopathology (Hirshfeld-Becker et al., 2012) promote risk and/or resilience for the development and maintenance of internalizing and externalizing symptoms. Future research should also

seek to examine symptoms profiles at additional time points. Inclusion of data at earlier, intermediate, and later time points would provide a richer picture of youth symptoms profiles over time. Relatedly, examination of parenting behaviors at diverse time points would allow for further insight into the important relations among developmentally relevant parenting behaviors (e.g., warmth, consistency in childhood; autonomy-granting and monitoring in adolescence) and the development of different aspects of symptom profiles. Further, raw scores of symptom levels should be examined in addition to normed scores to assess whether developmentally expected changes in symptom levels for different classes occur over time. Additionally, the use of other informants such as teachers could shed light on youth behavior in school, an important developmental context. Utilizing multiple methods of data collection (e.g., interview, direct observation) would also add to the methodological rigor of the study.

Conclusions and Clinical Implications

The current study provided several important findings. First, an examination of symptom and ER profiles during two important developmental periods, late childhood and middle adolescence, shed light on our understanding of the co-occurrence of various types of internalizing and externalizing problems and ER among youth. The examination of correlates (e.g., substance use) and prospective variables (e.g., SWB, adaptive functioning) on which classes might exhibit different levels provided support for the external validity of classes as well. Further, transitions among classes revealed that youth may exhibit stability over time in terms of symptom profiles, or may move to groups characterized by higher or lower internalizing and externalizing symptoms. The consideration of parenting behaviors as predictors of these transitions furthered the

existing body of literature suggesting that positive parenting behaviors such as acceptance and consistency promote resilience among youth, whereas negative parenting behaviors such as psychological control and inconsistency may contribute to risk profiles among youth, likely in a bidirectional or transactional manner with contributions from both youth and parents (Drabick & Steinberg, 2011).

The examination of substance use among youth and adolescent classes moreover built on our understanding of concurrent and prospective relations among substance use with internalizing and externalizing symptoms, suggesting that externalizing and co-occurring internalizing and externalizing without internalizing behaviors are associated with more frequent use of certain types of substances, whereas classes characterized primarily by internalizing behaviors had higher levels of concurrent but not prospective substance use.

Perhaps most interestingly, the current study examined symptom profiles in relation to SWB and adaptive functioning in several important domains in young adulthood. The inclusion of these outcomes allows for a more nuanced understanding of typical and atypical development, and provides insight into the types of behaviors that may be the most necessary targets for intervention to promote healthy youth development. Not surprisingly, youth and adolescents in the Low Sxs.+High ER classes tended to evidence the best outcome in several of these domains. Nevertheless, individuals experiencing moderate levels of externalizing symptoms in middle childhood and/or adolescence also evidenced higher functioning in friendships in middle childhood and SWB in young adulthood, which may provide further evidence for positive

functioning among individuals who are highly sensitive to reward, as is often seen among individuals who exhibit externalizing behaviors.

Findings of the current study contribute to our understanding of prevention and intervention among children and adolescents. Results underscore the importance of parenting behaviors in promoting resilience among youth. Prevention and intervention efforts aimed at reducing internalizing and externalizing behaviors should incorporate elements that either directly target parenting behaviors or include a parental involvement component. Parent-focused components are often part of intervention efforts for externalizing problems (e.g., Parent-Child Interaction Therapy, Brinkmeyer, & Eyberg, 2003; Coping Power Program, Lochman & Wells, 2002). Although parents are sometimes involved in interventions for internalizing problems (e.g., Coping Cat, Kendall, 1994), parenting is typically not a main focus of intervention, and parents are often uninvolved in treatment (Sander & McCarty, 2005). The current study suggests that parenting behaviors are also important treatment targets for youth internalizing interventions; however, there is a dearth of research on interventions for youth internalizing problems that involve a significant parent focus (Sander & McCarty, 2005; Weisz, McCarty, & Valeri, 2006). The present study demonstrates that accepting behaviors and a consistent discipline style with minimal psychological control is likely best, although among some youth, different levels of rule enforcement or control may have differential effects.

Further, though the current study examined ER as a component of youth classes rather than a predictor, results suggest that prevention and intervention efforts targeting the promotion of ER among youth and adolescents (e.g., Cognitive-Behavioral Therapy,

Beck, Rush, Shaw, & Emery, 1979) likely will contribute to reductions in both internalizing and externalizing domains and the promotion of SWB and adaptive functioning. Finally, as Weissberg, Kumpfer, and Seligman (2003) put forth, youth interventions targeting problem symptoms that incorporate components that seek to enhance youth competence, social-connectedness, and community contributions serve a dual function in that they may reduce problem symptoms and also promote resilience and foundations for healthy adulthood (i.e., high SWB and adaptive functioning).

In terms of etiological models, the current study suggests that parenting behaviors could serve as shared risk or protective factors in the development of internalizing and externalizing symptoms and ER. In turn, these symptom and ER profiles evidence varied outcome in terms of adaptive functioning in young adulthood, with youth exhibiting low internalizing and externalizing symptoms or low internalizing and moderate externalizing symptoms and high ER generally having the best outcomes. This pattern of findings indicates areas to assess and test in terms of prevention and intervention efforts with the goal of promoting positive development across youth development and into early adulthood.

REFERENCES CITED

- Abbey, A., & Andrews, F. M. (1985). Modeling the psychological determinants of life quality. *Social Indicators Research, 16*, 1-34.
- Abraham, H. D., & Fava, M. (1999). Order of onset of substance abuse and depression in a sample of depressed outpatients. *Comprehensive Psychiatry, 40*, 44–50.
- Achenbach, T.M. (1991). *Interactive guide for the 1991 CBCL/4-8, YSR, and TRF profiles*. Burlington, VT, US: University of Vermont Department of Psychiatry.
- Achenbach, T. M. (1997). *Manual for the young adult self-report and young adult behavior checklist*. Burlington: University of Vermont, Department of Psychiatry.
- Achenbach, T. M., & Rescorla, L. A. (2003). *Manual for the ASEBA Adult Forms & Profiles*. Burlington, VT: University of Vermont, Research Center for Children, Youth, & Families.
- Achenbach, T., & Edelbrock, C. (1983). *Manual for the revised child behavior checklist and revised child behavior profile*. Burlington, VT, US: T.M. Achenbach.
- Adams, D.M., Overholser, J.C., & Lehnert, K. (1994). Perceived family functioning and adolescent suicidal behavior. *Journal of the American Academy of Child and Adolescent Psychiatry, 33*, 498–507.
- Adelman, H. S., Taylor, L., & Nelson, P. (1989). Minors' dissatisfaction with their life circumstances. *Child Psychiatry and Human Development, 20*, 135-147.
- Akaike, H. (1987). Factor analysis and AIC. *Psychometrika, 52*, 317-332.
- Akers, R. L., Krohn, M. D., Lanza-Kaduce, L., & Radosevich, M. (1979). Social learning and deviant behavior: A specific test of a general theory. *American Sociological Review, 636-655*.

- Alloy, L. B., Abramson, L. Y., Tashman, N. A., Berrebbi, D. S., Hogan, M. E., Whitehouse, W. G., & ... Moroco, A. (2001). Developmental origins of cognitive vulnerability to depression: Parenting, cognitive, and inferential feedback styles of the parents of individuals at high and low cognitive risk for depression. *Cognitive Therapy And Research*, 25(4), 397-423.
- American Psychiatric Association. *Diagnostic and Statistical Manual of Mental Disorders*. (3rd ed., rev.). Washington (DC): Author; 1987.
- American Psychiatric Association. *Diagnostic and Statistical Manual of Mental Disorders* (4th ed, rev.). Washington (DC): Author; 1994.
- Anderson, C., John, O. P., Keltner, D., & Kring, A. M. (2001). Who attains social status? Effects of personality and physical attractiveness in social groups. *Journal of Personality and Social Psychology*, 81, 116-132.
- Angold, A., Costello, E. J., & Erkanli, A. (1999a). Comorbidity. *Journal of Child Psychology and Psychiatry*, 40, 57–87.
- Angold, A., Costello, E., Farmer, E. Z., Burns, B. J., & Erkanli, A. (1999b). Impaired but undiagnosed. *Journal of the American Academy of Child and Adolescent Psychiatry*, 38, 129-137.
- Ash, C., & Huebner, E. S. (2001). Environmental events and life satisfaction reports of adolescents: A test of cognitive mediation. *School Psychology International*, 22, 320–336.
- Avenevoli, S., Knight, E., Kessler, R. C., & Merikangas, K. (2008). Epidemiology of depression in children and adolescents. In J. Z. Abela, B. L. Hankin (Eds.),

- Handbook of depression in children and adolescents* (pp. 6-32). New York, NY
US: Guilford Press.
- Bahr, S. J., Hoffmann, J. P., & Yang, X. (2005). Parental and peer influences on the risk
of adolescent drug use. *Journal of Primary Prevention, 26*, 529-551.
- Barber, B. K. (1996). Parental psychological control: Revisiting a neglected construct.
Child Development, 67, 3296-3319.
- Barkley, R. A. (1997). Behavioral inhibition, sustained attention, and executive functions:
constructing a unifying theory of ADHD. *Psychological Bulletin, 121*, 65-94.
- Barkley, R. A., Fischer, M., Smallish, L., & Fletcher, K. (2006). Young adult outcome of
hyperactive children: adaptive functioning in major life activities. *Journal of the
American Academy of Child & Adolescent Psychiatry, 45*, 192-202.
- Barkley, R. A., Karlsson, J., Pollard, S., & Murphy, J. V. (1985). Developmental changes
in the mother-child interactions of hyperactive boys: Effects of two dose levels of
Ritalin. *Journal of Child Psychology and Psychiatry, 26*, 705-715.
- Bartels, M., Cacioppo, J. T., van Beijsterveldt, T. M., & Boomsma, D. I. (2013).
Exploring the association between well-being and psychopathology in
adolescents. *Behavior Genetics, 43*, 177-190.
- Bates, J. E., Pettit, G. S., & Dodge, K. A. (1995). Family and child factors in stability and
change in children's aggressiveness in elementary school. In J. McCord (Ed.),
Coercion and punishment in long-term perspectives (pp. 124-138). New York,
NY, US: Cambridge University Press.
- Bauman, K. E., & Ennett, S. T. (1996). On the importance of peer influence for
adolescent drug use: Commonly neglected considerations. *Addiction, 91*, 185-198.

- Baumrind, D., & Moselle, K. A. (1985). A developmental perspective on adolescent drug abuse. *Advances in Alcohol and Substance Abuse, 4*, 41-66.
- Beauchaine, T. P. (2003). Taxometrics and developmental psychopathology. *Development and Psychopathology, 15*, 501-527.
- Beck, A. T. (2008). The evolution of the cognitive model of depression and its neurobiological correlates. *American Journal of Psychiatry, 165*, 969–977.
- Beck, A. T., Rush, A. J., Shaw, B. F., & Emery, G. (1979). *Cognitive therapy of depression*. New York: Guilford.
- Bell, R. Q. (1979). Parent, child, and reciprocal influences. *American Psychologist, 34*, 821-826.
- Berg-Nielsen, T., Vikan, A., & Dahl, A. A. (2002). Parenting related to child and parental psychopathology: A descriptive review of the literature. *Clinical Child Psychology and Psychiatry, 7*, 529-552.
- Bögels, S. M., & van Melick, M. (2004). The relationship between child-report, parent self-report, and partner report of perceived parental rearing behaviors and anxiety in children and parents. *Personality And Individual Differences, 37*(8), 1583-1596.
- Bono, J. E., & Judge, T. A. (2004). Personality and transformational and transactional leadership: a meta-analysis. *Journal of Applied Psychology, 89*, 901-910.
- Bornstein, M. H., Hahn, C.S., & Haynes, O. M. (2010). Social competence, externalizing, and internalizing behavioral adjustment from early childhood through early adolescence: Developmental cascades. *Development and Psychopathology, 22*(4), 717–735.

- Braet, C., Theuwis, L., Durme, K., Vandewalle, J., Vandevivere, E., Wante, L., & ...
Goossens, L. (in press). Emotion regulation in children with emotional problems.
Cognitive Therapy and Research.
- Brinkmeyer, M., & Eyberg, S. (2003). *Parent–Child Interaction Therapy for oppositional children*. In A. E. Kazdin & J. R. Weiss (Eds.), *Evidence-based psychotherapies for children and adolescents* (pp. 204-223). New York, NY: Guilford Press.
- Bukstein, O. G., Clancy, L. J., & Kaminer, Y. (1992). Patterns of affective comorbidity in a clinical population of dually diagnosed adolescent substance abusers. *Journal of the American Academy of Child and Adolescent Psychiatry*, *31*, 1041-1045.
- Butler, A. M., Kowalkowski, M., Jones, H. A., & Raphael, J. L. (2012). The relationship of reported neighborhood conditions with child mental health. *Academic Pediatrics*, *12*(6), 523-531.
- Calkins, S. D. (1994). Origins and outcomes of individual differences in emotion regulation. *Monographs of the Society for Research in Child Development*, *59*, 53-72.
- Campbell, S. B., Breaux, A. M., Ewing, L. J., Szumowski, E. K., & Pierce, E. W. (1986). Parent-identified problem preschoolers: Mother-child interaction during play at intake and 1-year follow-up. *Journal of Abnormal Child Psychology*, *14*, 425-440.
- Campbell, S. B., Shaw, D. S., & Gilliom, M. (2000). Early externalizing behavior problems: Toddlers and preschoolers at risk for later maladjustment. *Development and Psychopathology*, *12*, 467-488.

- Capaldi, D. M., & Patterson, G. R. (1991). Relation of parental transitions to boys' adjustment problems: I. A. linear hypothesis. II. Mothers at risk for transitions and unskilled parenting. *Developmental Psychology, 27*, 489–504.
- Carlson, S. M., & Wang, T. S. (2007). Inhibitory control and emotion regulation in preschool children. *Cognitive Development, 22*(4), 489-510.
- Carson, D., Council, J., & Volk, M. (1989). Temperament as a predictor of psychological adjustment in female adult incest victims. *Journal of Clinical Psychology, 45*, 330-335.
- Carthy, T., Horseh, N., Apter, A., Edge, M.D., & Gross, J.J. (2010). Emotional reactivity and cognitive regulation in anxious children. *Behavior Research and Therapy, 48*, 384-393.
- Champion, L. A., Goodall, G., & Rutter, M. (1995). Behaviour problems in childhood and stressors in early adult life. I. A 20 year follow-up of London school children. *Psychological Medicine, 25*, 231-246.
- Chang, K. D., Blasey, C. M., Ketter, T. A., & Steiner, H. (2003). Temperament characteristics of child and adolescent bipolar offspring. *Journal of affective disorders, 77*(1), 11-19.
- Chaplin, T. M., Cole, P. M., & Zahn-Waxler, C. (2005). Parental socialization of emotion expression: Gender differences and relations to child adjustment. *Emotion, 5*, 80-88.
- Chassin, L., Pitts, S. C., & Prost, J. (2002). Binge drinking trajectories from adolescence to emerging adulthood in a high-risk sample: predictors and substance abuse outcomes. *Journal of Consulting and Clinical Psychology, 70*, 67-78.

- Chorpita, B.F., & Barlow, D.H. (1998). The development of anxiety: The role of control in the early environment. *Psychological Bulletin*, *124*, 3–21.
- Cicchetti, D., & Rogosch, F. A. (1996). Equifinality and multifinality in developmental psychopathology. *Development and Psychopathology*, *8*, 597–600.
- Clark, D., Moss, H.B., Kirisci, L., Mezzich, A., Miles, R. & Ott, P. (1997). Psychopathology in preadolescent sons of fathers with substance use disorders. *Journal of the American Academy of Child and Adolescent Psychiatry*, *36*, 495-502.
- Clogg, C. (1995). Latent class models. In G. Armiger, C. Clogg, & M. Sobel (Eds.), *Handbook of statistical modeling for the social and behavioral sciences* (pp. 311-359). NY, US: Plenum.
- Colder, C. R., Scalco, M., Trucco, E. M., Read, J. P., Lengua, L. J., Wieczorek, W. F., & Hawk Jr, L. W. (2013). Prospective associations of internalizing and externalizing problems and their co-occurrence with early adolescent substance use. *Journal of Abnormal Child Psychology*, *41*(4), 667-677.
- Cole, P. M., Martin, S. E., & Dennis, T. A. (2004). Emotion regulation as a scientific construct: Methodological challenges and directions for child development research. *Child Development*, *75*, 317-333.
- Cole, P. M., Michel, M. K., & Teti, L. O. D. (1994a). The development of emotion regulation and dysregulation: A clinical perspective. *Monographs of the Society for Research in Child Development*, *59*(2-3), 73-102.

- Cole, P. M., Teti, L. O., & Zahn-Waxler, C. (2003). Mutual emotion regulation and the stability of conduct problems between preschool and early school age. *Development and Psychopathology, 15*, 1-18.
- Cole, P. M., Zahn-Waxler, C., & Smith, K. D. (1994b). Expressive control during a disappointment: Variations related to preschoolers' behavior problems. *Developmental Psychology, 30*, 835-846.
- Collado, A., Felton, J. W., MacPherson, L., & Lejuez, C. (2014). Longitudinal trajectories of sensation seeking, risk taking propensity, and impulsivity across early to middle adolescence. *Addictive Behaviors, 39*(11), 1580-1588.
- Collins, W., Maccoby, E. E., Steinberg, L., Hetherington, E., & Bornstein, M. H. (2000). Contemporary research on parenting: The case for nature and nurture. *American Psychologist, 55*, 218-232.
- Compas, B. E., Connor-Smith, J., & Jaser, S. S. (2004). Temperament, stress reactivity, and coping: Implications for depression in childhood and adolescence. *Journal of Clinical Child and Adolescent Psychology, 33*, 21-31.
- Connell, A., Bullock, B. M., Dishion, T. J., Shaw, D., Wilson, M., & Gardner, F. (2008). Family intervention effects on co-occurring early childhood behavioral and emotional problems: A latent transition analysis approach. *Journal Of Abnormal Child Psychology, 36*(8), 1211-1225.
- Cosden, M., Larsen, J. L., Donahue, M. T., & Nylund-Gibson, K. (2015). Trauma Symptoms for Men and Women in Substance Abuse Treatment: A Latent Transition Analysis. *Journal Of Substance Abuse Treatment, 50*18-25.

- Costello, E. J., Mustillo, S., Erkanli, A., Keeler, G., & Angold, A. (2003). Prevalence and development of psychiatric disorders in childhood and adolescence. *Archives of General Psychiatry, 60*, 837-844.
- Cowen, E. L., 1991. In pursuit of wellness. *American Psychologist, 46*, 404-408.
- Cowen, E. L., 1994. The enhancement of psychological wellness: Challenges and opportunities. *American Journal of Community Psychology, 22*, 149-179.
- Creed, P. A., Muller, J., & Patton, W. (2003). Leaving high school: The influence and consequences for psychological well-being and career-related confidence. *Journal of Adolescence, 26*, 295–311.
- Csikszentmihalyi, M. (1990). *Flow: The psychology of optimal performance*. New York, NY, US: Cambridge University Press.
- Csikszentmihalyi, M. (1999). If we are so rich, why aren't we happy? *American Psychologist, 54*, 821-827.
- Cummins, R. A. (2000). Objective and subjective quality of life: An interactive model. *Social Indicators Research, 52*, 55–72.
- Deater-Deckard, K. (2001). Annotation: Recent research examining the role of peer relationships in the development of psychopathology. *Journal of Child Psychology and Psychiatry, 42*, 565-579.
- De Los Reyes, A., & Kazdin, A. E. (2005). Informant discrepancies in the assessment of childhood psychopathology: A critical review, theoretical framework, and recommendations for further study. *Psychological Bulletin, 131*(4), 483.

- De Man, A.F., Labrèche-Gauthier, L., & Leduc, C.P. (1993). Parent-child relationships and suicidal ideation in French-Canadian adolescents. *Journal of Genetic Psychology, 154*, 17-23.
- Demo, D. H., & Acock, A. C. (1996). Family structure, family process, and adolescent well-being. *Journal of Research on Adolescence, 6*, 457-488.
- Denham, S. A., Workman, E., Cole, P. M., Weissbrod, C., Kendziora, K. T., & Zahn-Waxler, C. (2000). Prediction of externalizing behavior problems from early to middle childhood: The role of parental socialization and emotion expression. *Development and psychopathology, 12*(01), 23-45.
- de Nijs, P. A., van Lier, P. C., Verhulst, F. C., & Ferdinand, R. F. (2007). Classes of disruptive behavior problems in referred adolescents. *Psychopathology, 40*(6), 440-445.
- DeWit, D. J., Adlaf, E. M., Offord, D. R., & Ogborne, A. C. (2000). Age at first alcohol use: a risk factor for the development of alcohol disorders. *American Journal of Psychiatry, 157*, 745-750.
- Diener, E., 1994. Assessing subjective well-being: Progress and opportunities. *Social Indicators Research, 31*, 103-157.
- Diener, E. (2000). Subjective well-being. The science of happiness and proposal for a national index. *American Psychologist, 55*, 34-43.
- Diener, E., Oishi, S., & Lucas, R. E. (2003). Personality, culture, and subjective well-being: Emotional and cognitive evaluations of life. *Annual Review of Psychology, 54*, 403-425.

- Diener, E., Suh, E. M., Lucas, R. E., & Smith, H. L. (1999). Subjective well-being: Three decades of progress. *Psychological Bulletin*, *125*, 276-302.
- Dishion, T. J., & McMahon, R. J. (1998). Parental monitoring and the prevention of child and adolescent problem behavior: A conceptual and empirical formulation. *Clinical Child and Family Psychology Review*, *1*(1), 61-75.
- Dishion, T.J., Spracklen, K.M., Andrews, D.W., & Patterson, G.R. (1996). Deviancy training in male adolescent friendships. *Behavior Therapy*, *27*, 373-390.
- DiStefano, C., & Kamphaus, R. W. (2006). Investigating subtypes of child development a comparison of cluster analysis and latent class cluster analysis in typology creation. *Educational and Psychological Measurement*, *66*(5), 778-794.
- Dorsey, S., & Forehand, R. (2003). The relation of social capital to child psychosocial adjustment difficulties: The role of positive parenting and neighborhood dangerousness. *Journal of Psychopathology and Behavioral Assessment*, *25*(1), 11-23.
- Doyle, R., Mick, E., & Biederman, J. (2007). Convergence between the Achenbach Youth Self-Report and Structured Diagnostic Interview Diagnoses in ADHD and Non-ADHD Youth. *Journal of Nervous And Mental Disease*, *195*, 350-352.
- Drabick, D. A. (2009). Can a developmental psychopathology perspective facilitate a paradigm shift toward a mixed categorical–dimensional classification system? *Clinical Psychology: Science and Practice*, *16*, 41-49.
- Drabick, D. G., Beauchaine, T. P., Gadow, K. D., Carlson, G. A., & Bromet, E. J. (2006). Risk Factors for Conduct Problems and Depressive Symptoms in a Cohort of

- Ukrainian Children. *Journal Of Clinical Child And Adolescent Psychology*, 35, 244-252.
- Drabick, D. G., Gadow, K. D., & Sprafkin, J. (2006). Co-occurrence of conduct disorder and depression in a clinic-based sample of boys with ADHD. *Journal Of Child Psychology And Psychiatry*, 47(8), 766-774.
- Drabick, D. A., & Kendall, P. C. (2010). Developmental psychopathology and the diagnosis of mental health problems among youth. *Clinical Psychology: Science and Practice*, 17, 272-280.
- Drabick, D.A.G., & Steinberg, L. (2011). Developmental psychopathology. In B. B. Brown and M.J. Prinstein (Eds.), *Encyclopedia of adolescence, Vol. 3* (pp. 136-142). San Diego, CA, US: Academic.
- Dunsmore, J. C., Booker, J. A., & Ollendick, T. H. (2013). Parental emotion coaching and child emotion regulation as protective factors for children with oppositional defiant disorder. *Social Development*, 22, 444-466.
- DuPaul, G. J., McGoey, K. E., Eckert, T. L., & VanBrakle, J. (2001). Preschool children with attention-deficit/hyperactivity disorder: Impairments in behavioral, social, and school functioning. *Journal of the American Academy of Child and Adolescent Psychiatry*, 40, 508-515.
- Eaton, D. K., Kann, L., Kinchen, S., Shanklin, S., Flint, K. H., Hawkins, J., ... & Wechsler, H. (2012). Youth risk behavior surveillance-United States, 2011. *Morbidity and mortality weekly report. Surveillance summaries (Washington, DC: 2002)*, 61, 1-162.

- Eisenberg, N., Cumberland, A., & Spinrad, T.L. (1998). Parental socialization of emotion. *Psychological Inquiry, 9*, 241-273.
- Eisenberg, N., Losoya, S., Fabes, R. A., Guthrie, I. K., Reiser, M., Murphy, B., & ... Padgett, S. J. (2001). Parental Socialization of Children's Dysregulated Expression of Emotion and Externalizing Problems. *Journal Of Family Psychology, 15*(2), 183-205.
- Elliot, A. J., & Thrash, T. M. (2002). Approach-avoidance motivation in personality: approach and avoidance temperaments and goals. *Journal of Personality and Social Psychology, 82*, 804.
- Enders, C. K. (2001). The performance of the full information maximum likelihood estimator in multiple regression models with missing data. *Educational and Psychological Measurement, 61*, 713–740.
- Esbjörn, B. H., Bender, P. K., Reinholdt-Dunne, M. L., Munck, L. A., & Ollendick, T. H. (2012). The development of anxiety disorders: Considering the contributions of attachment and emotion regulation. *Clinical Child and Family Psychology Review, 15*, 129-143.
- Fabes, R.A., Poulin, R.E., Eisenberg, N., & Madden-Derdich, D.A. (2002). The Coping with Children's Negative Emotions Scale (CCNES): Psychometric properties and relations with children's emotional competence. *Marriage and Family Review, 34*, 285-310.
- Fallu, J. S., Janosz, M., Brière, F. N., Descheneaux, A., Vitaro, F., & Tremblay, R. E. (2010). Preventing disruptive boys from becoming heavy substance users during

- adolescence: A longitudinal study of familial and peer-related protective factors. *Addictive Behaviors*, 35, 1074-1082.
- Fanti, K. A., & Henrich, C. C. (2010). Trajectories of pure and co-occurring internalizing and externalizing problems from age 2 to age 12: findings from the National Institute of Child Health and Human Development Study of Early Child Care. *Developmental Psychology*, 46(5), 1159.
- Farrell, A. D., Sullivan, T. N., Esposito, L. E., Meyer, A. L., & Valois, R. F. (2005). A latent growth curve analysis of the structure of aggression, drug use, and delinquent behaviors and their interrelations over time in urban and rural adolescents. *Journal of Research on Adolescence*, 15, 179-204.
- Fauber, R., Forehand, R., Thomas, A. M., & Wierson, M. (1990). A mediational model of the impact of marital conflict on adolescent adjustment in intact and divorced families: The role of disrupted parenting. *Child Development*, 61(4), 1112-1123.
- Feng, X., Keenan, K., Hipwell, A.E., Henneberger, A.K., Rischall, M.S., B, Butch, J., ... Babinski, D.E. (2009). Longitudinal associations between emotion regulation and depression in preadolescent girls: Moderation by the caregiving environment. *Developmental Psychology*, 45, 798-808.
- Forehand, R., & Nousiainen, S. (1993). Maternal and paternal parenting: Critical dimensions in adolescent functioning. *Journal Of Family Psychology*, 7(2), 213-221.
- Forman, S. G., Bry, B. H., & Urga, P. A. (2006). Substance abuse. In G. G. Bear & K. M. Minke (Eds.), *Children's needs III: Development, prevention, and intervention*

(pp. 1011–1023). Bethesda, MD, US: National Association of School Psychologists.

Frick, P. J., & Morris, A. S. (2004). Temperament and developmental pathways to conduct problems. *Journal of Clinical Child and Adolescent Psychology, 33*, 54-68.

Frosch, C. A., & Mangelsdorf, S. C. (2001). Marital behavior, parenting behavior, and multiple reports of preschoolers' behavior problems: Mediation or moderation? *Developmental Psychology, 37*(4), 502-519.

Funk, B. A., Huebner, E. S., & Valois, R. F. (2006). Reliability and validity of a brief life satisfaction scale with a high school sample. *Journal of Happiness Studies, 7*, 41–54.

Garber, J. (2006). Depression in Children and Adolescents: Linking Risk Research and Prevention. *American Journal Of Preventive Medicine, 31*(6, Suppl 1), S104-S125.

Garber, J., Braafladt, N., & Weiss, B. (1995). Affect regulation in depressed and nondepressed children and young adolescents. *Development and Psychopathology, 7*, 93-115.

Ge, X., Jin, R., Natsuaki, M. N., Gibbons, F. X., Brody, G. H., Cutrona, C. E., & Simons, R. L. (2006). Pubertal maturation and early substance use risks among African American children. *Psychology of Addictive Behaviors, 20*, 404-414.

Giancola, P. R. (2000). Temperament and antisocial behavior in preadolescent boys with or without a family history of a substance use disorder. *Psychology of Addictive Behaviors, 14*, 56-68.

- Giancola, P. R., & Mezzich, A. C. (2003). Executive functioning, temperament, and drug use involvement in adolescent females with a substance use disorder. *Journal of Child Psychology and Psychiatry, 44*(6), 857-866.
- Gilliom, M., & Shaw, D. S. (2004). Codevelopment of externalizing and internalizing problems in early childhood. *Development and Psychopathology, 16*(02), 313-333.
- Gilliom, M., Shaw, D. S., Beck, J. E., Schonberg, M. A., & Lukon, J. L. (2002). Anger regulation in disadvantaged preschool boys: strategies, antecedents, and the development of self-control. *Developmental Psychology, 38*, 222-235.
- Gilman, R. (2001). The relationship between life satisfaction, social interest, and frequency of extracurricular activities among adolescent students. *Journal of Youth and Adolescence, 30*, 749-767.
- Gilman, R., Ashby, J. S., Sverko, D., Florell, D., & Varjas, K. (2005). The relationship between perfectionism and multidimensional life satisfaction among Croatian and American youth. *Personality and Individual Differences, 39*, 155-166.
- Gilman, R., & Huebner, E. S. (2006). Characteristics of adolescents who report very high life satisfaction. *Journal of Youth and Adolescence, 35*, 311-319.
- Gilman, R., Huebner, E. S., & Laughlin, J. E. (2000). A first study of the Multidimensional Students' Life Satisfaction Scale with adolescents. *Social Indicators Research, 52*, 135-160.
- Glenn, N. D. (1975). The contribution of marriage to the psychological well-being of males and females. *Journal of Marriage and the Family, 37*, 594-600.

- Gotlib, I. H. (1992). Interpersonal and cognitive aspects of depression. *Current Directions in Psychological Science*, 1, 149-154.
- Gove, W. R., & Shin, H. C. (1989). The psychological well-being of divorced and widowed men and women an empirical analysis. *Journal of Family Issues*, 10, 122-144.
- Graham, J. W. (2009). Missing data analysis: Making it work in the real world. *Annual Review of Psychology*, 60, 549-576.
- Granic, I., & Patterson, G. R. (2006). Toward a comprehensive model of antisocial development: a dynamic systems approach. *Psychological Review*, 113, 101.
- Greene, S. M., Anderson, E. R., Doyle, E. A., & Riedelbach, H. (2006). Divorce. In G. G. Bear & K. M. Minke (Eds.), *Children's needs III: Development, prevention and intervention* (pp. 745–757). Bethesda, MD, US: National Association of School Psychologists.
- Greenspoon, P.J., & Saklofske, D.H. (2001). Toward an integration of subjective well-being and psychopathology. *Social Indicators Research*, 54, 81–108.
- Guardiola, J., & Guillen-Royo, M. (2014). Income, unemployment, higher education and wellbeing in times of economic crisis: Evidence from Granada (Spain). *Social Indicators Research*, 1-15.
- Gullo, M. J., & Dawe, S. (2008). Impulsivity and adolescent substance use: Rashly dismissed as 'all-bad?' *Neuroscience and Biobehavioral Reviews*, 32, 1507-1518.
- Halleröd, B., & Bask, M. (2008). Accumulation of welfare problems in a longitudinal perspective. *Social Indicators Research*, 88, 311–327.

- Halleröd, B., & Seldén, D. (2013). The multi-dimensional characteristics of wellbeing: How different aspects of wellbeing interact and do not interact with each other. *Social Indicators Research, 113*, 807-825.
- Halligan, S. L., Cooper, P. J., Fearon, P., Wheeler, S. L., Crosby, M., & Murray, L. (2013). The longitudinal development of emotion regulation capacities in children at risk for externalizing disorders. *Development and Psychopathology, 25*, 391-406.
- Hankin, B. L., Abramson, L. Y., Moffitt, T. E., Silva, P. A., McGee, R., & Angell, K. E. (1998). Development of depression from preadolescence to young adulthood: Emerging gender differences in a 10-year longitudinal study. *Journal of Abnormal Psychology, 107*, 128-140.
- Hayward, C., & Sanborn, K. (2002). Puberty and the emergence of gender differences in psychopathology. *Journal of Adolescent Health, 30*, 49-58.
- Headey, B. W., Kelley, J., & Wearing, A. J. (1993). Dimensions of mental health: Life satisfaction, positive affect, anxiety and depression. *Social Indicators Research, 29*, 63-82.
- Heaven, P., Searight, H. R., Chastain, J., & Skitka, L. J. (1996). The relationship between perceived family health and personality functioning among Australian adolescents. *American Journal of Family Therapy, 24*, 358-366.
- Heinen, T. (1996). *Latent class and discrete latent trait models: Similarities and differences*. Thousand Oaks, CA, US: Sage.

- Hinshaw, S. P. (2003). Impulsivity, emotion regulation, and developmental psychopathology: specificity versus generality of linkages. *Annals of the New York Academy of Sciences, 1008*, 149-159.
- Hipwell, A., Keenan, K., Kasza, K., Loeber, R., Stouthamer-Loeber, M., & Bean, T. (2008). Reciprocal influences between girls' conduct problems and depression, and parental punishment and warmth: A six year prospective analysis. *Journal Of Abnormal Child Psychology, 36*(5), 663-677.
- Hirshfeld-Becker, D. R., Micco, J. A., Henin, A., Petty, C., Faraone, S. V., Mazursky, H., & ... Biederman, J. (2012). Psychopathology in adolescent offspring of parents with panic disorder, major depression, or both: A 10-year follow-up. *The American Journal Of Psychiatry, 169*(11), 1175-1184.
- Hoff, E., Laursen, B., & Tardif, T. (2002). Socioeconomic status and parenting. In M.H. Bornstein (Ed.) *Handbook of parenting, Volume 2: Biology and ecology of parenting* (pp. 231-252). Mahwah, NJ, US: Erlbaum.
- Hollingshead, A. (1975). *Four factor index of social status*. New Haven, CT, US: Private Printing.
- Huebner, E. S. (1991). Correlates of life satisfaction in children. *School Psychology Quarterly, 6*, 103-111.
- Huebner, E. S., Funk, B. A., & Gilman, R. (2000). Cross-sectional and longitudinal psychosocial correlates of adolescent life satisfaction reports. *Canadian Journal of School Psychology, 16*, 53-64.
- Hunter, E. C., Katz, L., Shortt, J., Davis, B., Leve, C., Allen, N. B., & Sheeber, L. B. (2011). How do I feel about feelings? Emotion socialization in families of

- depressed and healthy adolescents. *Journal of Youth and Adolescence*, 40, 428-441.
- Huppert, F. A., Marks, N., Clark, A., Siegrist, J., Stutzer, A., Vittersø, J., & Wahrendorf, M. (2009). Measuring well-being across Europe: Description of the ESS well-being module and preliminary findings. *Social Indicators Research*, 91, 301-315.
- IBM Corp. Released 2013. IBM SPSS Statistics for Windows, Version 22.0. Armonk, NY, US: IBM Corp.
- Jahoda, M. (1958). *Current concepts of positive mental health*. New York, NY, US: Basic Books.
- John, O. P., & Gross, J. J. (2004). Healthy and unhealthy emotion regulation: Personality processes, individual differences, and life span development. *Journal of Personality*, 72, 1301-1334.
- Johnston, C., & Mash, E. J. (2001). Families of children with attention-deficit/hyperactivity disorder: Review and recommendations for future research. *Clinical Child and Family Psychology Review*, 4, 183-207.
- Kashdan, T. B., Jacob, R. G., Pelham, W. E., Lang, A. R., Hoza, B., Blumenthal, J. D., & Gnagy, E. M. (2004). Depression and anxiety in parents of children with ADHD and varying levels of oppositional defiant behaviors: modeling relationships with family functioning. *Journal of Clinical Child and Adolescent Psychology*, 33, 169-181.
- Kaslow, N.J., Deering, C.G., & Racusin, G.R. (1994). Depressed children and their families. *Clinical Psychology Review*, 14, 39–59.

- Katja, R., Päivi, Å. K., Marja-Terttu, T., & Pekka, L. (2002). Relationships among adolescent subjective well-being, health behavior, and school satisfaction. *Journal of School Health, 72*, 243-249.
- Keil, V., & Price, J. M. (2006). Externalizing behavior disorders in child welfare settings: Definition, prevalence, and implications for assessment and treatment. *Children and Youth Services Review, 28*(7), 761-779.
- Keiley, M. K., Bates, J. E., Dodge, K. A., & Pettit, G. S. (2000). A cross-domain growth analysis: Externalizing and internalizing behaviors during 8 years of childhood. *Journal of abnormal child psychology, 28*(2), 161-179.
- Kendall, P.C. (1994). Treating anxiety disorders in children: Results of a randomized clinical trial. *Journal of Consulting and Clinical Psychology, 62*(1), 100-110.
- Kendler, K. S., Myers, J. M., Maes, H. H., & Keyes, C. L. (2011). The relationship between the genetic and environmental influences on common internalizing psychiatric disorders and mental well-being. *Behavior Genetics, 41*(5), 641-650.
- Kerns, C. E., Mennin, D. S., Farach, F. J., & Nocera, C. C. (2014). Utilizing an ability-based measure to detect emotion regulation deficits in generalized anxiety disorder. *Journal Of Psychopathology And Behavioral Assessment, 36*, 115-123.
- Keyes, C. (2002). The mental health continuum: From languishing to flourishing in life. *Journal of Health and Social Behavior, 43*, 207–222.
- Kessler, R. C., Berglund, P., Demler, O., Jin, R., Merikangas, K. R., & Walters, E. E. (2005). Lifetime Prevalence and Age-of-Onset Distributions of DSM-IV Disorders in the National Comorbidity Survey Replication. *Archives Of General Psychiatry, 62*(6), 593-602.

- King, S. M., Iacono, W. G., & McGue, M. (2004). Childhood externalizing and internalizing psychopathology in the prediction of early substance use. *Addiction, 99*(12), 1548-1559.
- Kirisci, L., Tarter, R. Mezzich, A., & Reynolds, M. (2008). Screening current and future diagnosis of psychiatric disorders using the revised drug use screening inventory. *American Journal of Drug and Alcohol Abuse, 34*, 653-665.
- Kochanska, G., & Knaack, A. (2003). Effortful control as a personality characteristic of young children: Antecedents, correlates, and consequences. *Journal of Personality, 71*, 1087-1112.
- Krueger, R. F., Markon, K. E., Patrick, C. J., & Iacono, W. G. (2005). Externalizing psychopathology in adulthood: a dimensional-spectrum conceptualization and its implications for DSM-V. *Journal of abnormal psychology, 114*(4), 537.
- Kuntsche, E. N., & Gmel, G. (2004). Emotional wellbeing and violence among social and solitary risky single occasion drinkers in adolescence. *Addiction, 99*, 331–339.
- Lamborn, S.D., Mounts, N.S., Steinberg, L., & Dornbusch, S.M. (1991). Patterns of competence and adjustment among adolescents from authoritative, authoritarian, indulgent, and neglectful families. *Child Development, 62*, 1049–1065
- Lavigne, J. V., Gibbons, R. D., Christoffel, K. K., Arend, R., Rosenbaum, D., Binns, H., ... & Isaacs, C. (1996). Prevalence rates and correlates of psychiatric disorders among preschool children. *Journal of the American Academy of Child and Adolescent Psychiatry, 35*, 204-214.

- Lengua, L. J. (2002). The contribution of emotionality and self-regulation to the understanding of children's response to multiple risk. *Child Development, 73*(1), 144-161.
- Lengua, L. J. (2006). Growth in temperament and parenting as predictors of adjustment during children's transition to adolescence. *Developmental Psychology, 42*(5), 819-832.
- Leon, G. R., Kanfer, R., Hoffman, R. G., & Dupre, L. (1991). Interrelationships of personality and coping in a challenging extreme situation. *Journal of Research in Personality, 25*, 357– 371.
- Leon, G. R., McNally, C., & Ben-Porath, Y. S. (1989). Personality characteristics, mood, and coping patterns in a successful North Pole expedition team. *Journal of Research in Personality, 23*, 162– 179.
- Lilienfeld, S. O. (2003). Comorbidity between and within childhood externalizing and internalizing disorders: Reflections and directions. *Journal of Abnormal Child Psychology, 31*, 285–291.
- Lochman, J.E., & Wells, K.C. (2002). The Coping Power program at the middle school transition: Universal and indicated prevention effects. *Psychology of Addictive Behaviors, 16*, S40-S54.
- Loeber, R. (1982). The stability of antisocial and delinquent child behavior: A review. *Child Development, 53*, 1431-1446.
- Loeber, R., Burke, J. D., Lahey, B. B., Winters, A., & Zera, M. (2000). Oppositional defiant and conduct disorder: A review of the past 10 years, Part I. *Journal Of The American Academy Of Child & Adolescent Psychiatry, 39*, 1468-1484.

- Lougheed, J. P., & Hollenstein, T. (2012). A limited repertoire of emotion regulation strategies is associated with internalizing problems in adolescence. *Social Development, 21*, 704-721.
- Lykken, D., & Tellegen, A. (1996). Happiness is a stochastic phenomenon. *Psychological Science, 7*(3), 186-189.
- Maccoby, E.E., & Martin, J.A. (1983). Socialization in the context of the family: parent-child interaction. In P.H. Messen & E.M. Hetherington (Eds.), *Handbook of child psychology* (Vol. 4, pp. 1-102). New York, NY, US: Wiley.
- MacDonald, J.M., Piquero, A.R., Valois, R.F. & Zullig, K.J. (2005). The relationship between life satisfaction, risk-taking behaviors, and youth violence. *Journal of Interpersonal Violence, 20*, 1495-1518.
- MacLean, M. G., Paradise, M. J., & Cauce, A. M. (1999). Substance use and psychological adjustment in homeless adolescents: A test of three models. *American Journal of Community Psychology, 27*, 405-427.
- Margolies, P. J., & Weintraub, S. (1977). The revised 56-item CRPBI as a research instrument: Reliability and factor structure. *Journal of Clinical Psychology, 33*(2), 472-476.
- Marschall-Lévesque, S., Castellanos-Ryan, N., Vitaro, F., & Séguin, J. R. (2014). Moderators of the association between peer and target adolescent substance use. *Addictive Behaviors, 39*, 48-70.
- Marsee, M. A., & Frick, P. J. (2007). Exploring the cognitive and emotional correlates to proactive and reactive aggression in a sample of detained girls. *Journal of Abnormal Child Psychology, 35*, 969-981.

- Martel, M. M. (2013). Sexual selection and sex differences in the prevalence of childhood externalizing and adolescent internalizing disorders. *Psychological Bulletin, 139*, 1221-1259.
- Martel, M. M., & Nigg, J. T. (2006). Child ADHD and personality/temperament traits of reactive and effortful control, resiliency, and emotionality. *Journal of Child Psychology and Psychiatry, 47*, 1175-1183.
- Mash, E. J., & Johnston, C. (1982). A comparison of the mother-child interactions of younger and older hyperactive and normal children. *Child Development, 53*, 1371-1381.
- Masi, G., Mucci, M., Favilla, L., Brovedani, P., Millepiedi, S., & Perugi, G. (2003). Temperament in adolescents with anxiety and depressive disorders and in their families. *Child Psychiatry and Human Development, 33*(3), 245-259.
- Mastekaasa, A. (1995). Age variations in the suicide rates and self-reported subjective well-being of married and never married persons. *Journal of Community and Applied Social Psychology, 5*, 21-39.
- Masyn, K. E., Henderson, C. E., & Greenbaum, P. E. (2010). Exploring the latent structures of psychological constructs in social development using the dimensional/categorical spectrum. *Social Development, 19*, 470-493.
- Maton, K.I. (1990). Meaningful involvement in instrumental activity and well-being: Studies of older adolescents and at risk urban teen-angers. *American Journal of Community Psychology, 18*, 297-321.
- McCutcheon, A.L. (2002). Basic concepts and procedures in single and multiple group latent class analysis. In J. A. Hagenaars & A. L. McCutcheon (Eds.), *Applied*

- latent class analysis* (pp. 56-88). New York, NY, US: Cambridge University Press.
- McFarlane, A. H., Bellissimo, A., & Norman, G. R. (1995). Family structure, family functioning and adolescent well-being: The transcendent influence of parental style. *Journal of Child Psychology and Psychiatry*, *36*, 847–864.
- McGue, M., Elkins, I., & Iacono, W. G. (2000). Genetic and environmental influences on adolescent substance use and abuse. *American Journal of Medical Genetics*, *96*, 671-677.
- McKee, L., Colletti, C., Rakow, A., Jones, D. J., & Forehand, R. (2008). Parenting and child externalizing behaviors: Are the associations specific or diffuse? *Aggression and Violent Behavior*, *13*, 201-215.
- McLeod, B. D., Wood, J. J., & Weisz, J. R. (2007). Examining the association between parenting and childhood anxiety: A meta-analysis. *Clinical Psychology Review*, *27*(2), 155-172.
- McMahon, R. J., & Forehand, R. L. (2005). *Helping the noncompliant child: Family-based treatment for oppositional behavior*. New York, NY, US: Guilford.
- McMahon, R. J., Wells, K. C., & Kotler, J. S. (2006). Conduct Problems. In E. J. Mash, R. A. Barkley (Eds.), *Treatment of childhood disorders (3rd.ed)* (pp. 137-268). New York, NY US: Guilford Press.
- Melnick, S. M., & Hinshaw, S. P. (2000). Emotion regulation and parenting in AD/HD and comparison boys: Linkages with social behaviors and peer preference. *Journal of Abnormal Child Psychology*, *28*, 73-86.

- Mennin, D.S., McLaughlin, K.A., & Flanagan, T.J. (2009). Emotion regulation deficits in generalized anxiety disorder, social anxiety disorder, and their co-occurrence. *Journal of Anxiety Disorders, 23*, 866-871.
- Merikangas, K. R., Stolar, M., Stevens, D. E., Goulet, J., Preisig, M. A., Fenton, B., Zhang, H., O'Malley, S. S., & Rounsaville, B. J. (1998). Familial transmission of substance use disorders. *Archives of General Psychiatry, 55*, 973–979.
- Mezzich, A. C., Tarter, R. E., Giancola, P. R., & Kirisci, L. (2001). The dysregulation inventory: A new scale to assess the risk for substance use disorder. *Journal of Child and Adolescent Substance Abuse, 10*, 35-43.
- Mick, E., Faraone, S. V., & Biederman, J. (2004). Age-dependent expression of attention-deficit/ hyperactivity disorder symptoms. *Psychiatric Clinics of North America, 27*, 215-224. Muthén, L., & Muthén, B. (1998-2013). *Mplus user's guide* (4th edition). Los Angeles, CA, US: Muthén & Muthén.
- Miettunen, J., Murray, G. K., Jones, P. B., Mäki, P., Ebeling, H., Taanila, A., & ... Moilanen, I. (2014). Longitudinal associations between childhood and adulthood externalizing and internalizing psychopathology and adolescent substance use. *Psychological Medicine, 44*(8), 1727-1738.
- Moffitt, T. E., Caspi, A., Taylor, A., Kokaua, J., Milne, B. J., Polanczyk, G., & Poulton, R. (2010). How common are common mental disorders? Evidence that lifetime prevalence rates are doubled by prospective versus retrospective ascertainment. *Psychological Medicine, 899-909*.
- Muris, P., Meesters, C., & van den Berg, S. (2003). Internalizing and externalizing problems as correlates of self-reported attachment style and perceived parental

- rearing in normal adolescents. *Journal of Child and Family Studies*, 12(2), 171-183.
- Muris, P., van der Pennen, E., Sigmond, R., & Mayer, B. (2008). Symptoms of anxiety, depression, and aggression in non-clinical children: Relationships with self-report and performance-based measures of attention and effortful control. *Child Psychiatry and Human Development*, 39, 455-467.
- Murray-Close, D., Hoza, B., Hinshaw, S. P., Arnold, L. E., Swanson, J., Jensen, P. S., ... & Wells, K. (2010). Developmental processes in peer problems of children with attention-deficit/hyperactivity disorder in The Multimodal Treatment Study of Children With ADHD: Developmental cascades and vicious cycles. *Development and Psychopathology*, 22(04), 785-802.
- Muthén, B., & Muthén, L.K. (2000). Integrating person-centered and variable-centered analysis. Growth mixture-modeling with latent trajectory classes. *Alcoholism: Clinical and Experimental Research*, 24, 882-891.
- Myers, D. G. (2000). The funds, friends, and faith of happy people. *American Psychologist*, 55, 56-67.
- Neto, F. (1993). The Satisfaction With Life Scale: Psychometric properties in an adolescent sample. *Journal of Youth and Adolescence*, 22, 125–134.
- Newcomb, M. D., & Bentler, P. M. (1988). *Consequences of adolescent drug use: Impact on the lives of young adults*. Beverly Hills, CA, US: Sage.
- Newcomb, M. D., Bentler, P. M., & Collins, C. (1986). Alcohol use and dissatisfaction with self and life: A longitudinal analysis of young adults. *Journal of Drug Issues*, 63, 479–494.

- Niemelä, S. M., Sourander, A., Poikolainen, K., Elonheimo, H., Helenius, H., Sillanmäki, L., ... & Parkkola, K. (2006). Adaptive functioning, psychopathology and service use among 18-year-old boys with drunkenness-related alcohol use. *Alcohol and Alcoholism, 41*, 143-150.
- Nolen-Hoeksema, S., & Girgus, J. S. (1994). The emergence of gender differences in depression during adolescence. *Psychological Bulletin, 115*, 424-443.
- Nylund, K.L. (2007). *Latent Transition Analysis: Modeling Extensions and an Application to Peer Victimization*. Unpublished doctoral dissertation. University of California, Los Angeles.
- Nylund, K. L., Asparouhov, T., & Muthén, B. O. (2007a). Deciding on the number of classes in latent class analysis and growth mixture modeling: A Monte Carlo simulation study. *Structural Equation Modeling, 14*, 535-569.
- Nylund, K., Bellmore, A., Nishina, A., & Graham, S. (2007b). Subtypes, severity, and structural stability of peer victimization: What does latent class analysis say? *Child Development, 78*, 1706-1722.
- Offord, D. R., & Bennett, K. J. (1994). Conduct disorder: Long-term outcomes and intervention effectiveness. *Journal of the American Academy of Child and Adolescent Psychiatry, 33*, 1069-1078.
- Oland, A. J., & Shaw, D. S. (2005). Pure versus co-occurring externalizing and internalizing symptoms in children: The potential role of socio-developmental milestones. *Clinical Child and Family Psychology Review, 8*(4), 247-270.

- Olino, T. M., Klein, D. N., Farmer, R. F., Seeley, J. R., & Lewinsohn, P. M. (2012a). Examination of the structure of psychopathology using latent class analysis. *Comprehensive Psychiatry*, *53*(4), 323-332.
- Olino, T. M., Shankman, S. A., Klein, D. N., Seeley, J. R., Pettit, J. W., Farmer, R. F., & Lewinsohn, P. M. (2012b). Lifetime rates of psychopathology in single versus multiple diagnostic assessments: Comparison in a community sample of probands and siblings. *International Journal of Methods in Psychiatric Research*, *46*(9), 1217-1222.
- Ostrander, R., & Herman, K. C. (2006). Potential cognitive, parenting, and developmental mediators of the relationship between ADHD and depression. *Journal of Consulting and Clinical Psychology*, *74*, 89.
- Park, N. (2004). The role of subjective well-being in positive youth development. *Annals of the American Academy of Political and Social Science*, *591*, 25-39.
- Patrick, C. J., Curtin, J. J., & Tellegen, A. (2002). Development and validation of a brief form of the Multidimensional Personality Questionnaire. *Psychological Assessment*, *14*, 150-163.
- Patterson, G.R. (1982). *Coercive family process*. Eugene, OR: Castalia.
- Perlman, D., & Rook, K. S. (1987). Social support, social deficits, and the family: Toward the enhancement of well-being. *Applied Social Psychology Annual*, 717-744.
- Pettit, G. S., Laird, R. D., Dodge, K. A., Bates, J. E. & Criss, M. M. (2001). Antecedents and behavior-problem outcomes of parental monitoring and psychological control in early adolescence. *Child Development*, *72*, 583-598.

- Petty, C. R., Rosenbaum, J. F., Hirshfeld-Becker, D. R., Henin, A., Hubley, S., LaCasse, S., & ... Biederman, J. (2008). The child behavior checklist broad-band scales predict subsequent psychopathology: A 5-year follow-up. *Journal of Anxiety Disorders, 22*, 532-539.
- Pfiffner, L. J., & McBurnett, K. (2006). Family correlates of comorbid anxiety disorders in children with attention deficit/hyperactivity disorder. *Journal of Abnormal Child Psychology, 34*, 719-729.
- Piko, B. F., Luszczynska, A., Gibbons, F. X., & Tekozel, M. (2005). A culture-based study of personal and social influences of adolescent smoking. *European Journal of Public Health, 15*, 393–398.
- Proctor, C.L., Linley, P.A. & Maltby, J. (2009). Youth life satisfaction; a review of the literature. *Journal of Happiness Studies, 10*, 583–630.
- Rapee, R.M. (1997). Potential role of child rearing practices in the development of anxiety and depression. *Clinical Psychology Review, 17*, 47–67.
- Rapee, R. M., & Heimberg, R. G. (1997). A cognitive-behavioral model of anxiety in social phobia. *Behaviour Research and Therapy, 35*, 741–756.
- Rauer, A. J., Pettit, G. S., Lansford, J. E., Bates, J. E., & Dodge, K. A. (2013). Romantic relationship patterns in young adulthood and their developmental antecedents. *Developmental Psychology, 49*, 2159-2171.
- Rothbaum, F., & Weisz, J. R. (1994). Parental caregiving and child externalizing behavior in nonclinical samples: a meta-analysis. *Psychological Bulletin, 116*(1), 55.

- Restifo, K., & Bögels, S. (2009). Family processes in the development of youth depression: Translating the evidence to treatment. *Clinical Psychology Review, 29*(4), 294-316.
- Rey, J. M. (1995). Perceptions of poor maternal care are associated with adolescent depression. *Journal Of Affective Disorders, 34*, 95-100.
- Rothbart, M.K., & Bates, J.E. (2006). Temperament. In W. Damon, R. Lerner, & N. Eisenberg (Eds.), *Handbook of child psychology: Vol. 3. Social, emotional, and personality development (6th ed.)* (pp. 99–166). New York, NY, US: Wiley.
- Rubin, K. H., Coplan, R. J., & Bowker, J. C. (2009). Social withdrawal in childhood. *Annual Review of Psychology, 60*, 141–171.
- Rudolph, K.D., Flynn, M., & Abaied, J.L. (2008). A developmental perspective on interpersonal theories of youth depression. In J.R.Z. Abela & B.L. Hankin (Eds.), *Handbook of depression in children and adolescents* (pp. 79–102). New York, NY: Guilford Press.
- Rutter, M., & Sroufe, L. (2000). Developmental psychopathology: Concepts and challenges. *Development and Psychopathology, 12*, 265-296.
- Safford, S. M., Alloy, L. B., & Pieracci, A. (2007). A comparison of two measures of parental behavior. *Journal of Child and Family Studies, 16*(3), 375-384.
- Sameroff, A. (1975). Transactional models of early social relations. *Human Development, 18*, 65-79.
- Sameroff, A. (2010). A unified theory of development: A dialectic integration of nature and nurture. *Child Development, 81*, 6-22.

- Sander, J. B., & McCarty, C. A. (2005). Youth depression in the family context: Familial risk factors and models of treatment. *Clinical Child and Family Psychology Review, 8*(3), 203-219.
- Sanjuán, P. & Magallares, A. (2013). Coping strategies as mediating variables between self-serving attributional bias and subjective well-being. *Journal of Happiness Studies, 15*, 443-453.
- Scalco, M. D., Colder, C. R., Hawk, L. J., Read, J. P., Wieczorek, W. F., & Lengua, L. J. (2014). Internalizing and externalizing problem behavior and early adolescent substance use: A test of a latent variable interaction and conditional indirect effects. *Psychology Of Addictive Behaviors, 28*(3), 828-840.
- Sclove, S.L. (1987). Application of model-selection criteria to some problems in multivariate analysis. *Psychometrika, 52*, 333-343.
- Schaefer, E. S. (1965). Children's reports of parental behavior: An inventory. *Child Development, 36*, 413-424.
- Schludermann, E., & Schludermann, S. (1970). Replicability of factors in children's report of parent behavior (CRPBI). *The Journal of Psychology, 76*, 239-249.
- Schwartz, S. A. (1978). A comprehensive system for item analysis in psychological scale construction. *Journal of Educational Measurement, 15*, 117-123.
- Seligman, M. E. P., & Csikszentmihalyi, M. (2000). Positive psychology: An introduction. *American Psychologist, 55*, 5-14.
- Shaffer, A., Suveg, C., Thomassin, K., & Bradbury, L. L. (2012). Emotion socialization in the context of family risks: Links to child emotion regulation. *Journal of Child and Family Studies, 21*, 917-924.

- Shaw, P., Stringaris, A., Nigg, J., & Leibenluft, E. (2014). Emotion dysregulation in attention deficit hyperactivity disorder. *American Journal of Psychiatry*, *171*, 276-293.
- Shedler, J., & Block, J. (1990). Adolescent drug use and psychological health: A longitudinal inquiry. *American Psychologist*, *45*, 612-630.
- Shields, A., & Cicchetti, D. (1998). Reactive aggression among maltreated children: The contributions of attention and emotion dysregulation. *Journal of Clinical Child Psychology*, *27*, 381-395.
- Shek, D. T. L. (1997a). Family environment and adolescent psychological well-being, school adjustment, and problem behavior: A pioneer study in a Chinese context. *Journal of Genetic Psychology*, *158*, 113–128.
- Shek, D. T. L. (1997b). The relation of family functioning to adolescent psychological well-being, school adjustment, and problem behavior. *Journal of Genetic Psychology*, *158*, 467–479.
- Shek, D. T. L. (1997c). The relation of parent-adolescent conflict to adolescent psychological well-being, school adjustment, and problem behavior. *Social Behavior and Personality*, *25*, 277–290.
- Shek, D. T. L. (1998). A longitudinal study of the relations between parent-adolescent conflict and adolescent psychological well-being. *Journal of Genetic Psychology*, *159*, 53–67.
- Shek, D. L. (2002). Family functioning and psychological well-being, school adjustment, and problem behavior in Chinese adolescents with and without economic

- disadvantage. *Journal of Genetic Psychology: Research and Theory on Human Development*, 163, 497-502.
- Shiner, R. L. (2000). Linking childhood personality with adaptation: evidence for continuity and change across time into late adolescence. *Journal of Personality and Social Psychology*, 78, 310-325.
- Shiner, R. L., Masten, A. S., & Roberts, J. M. (2003). Childhood personality foreshadows adult personality and life outcomes two decades later. *Journal of Personality*, 71, 1145-1170.
- Silk, J. S., Steinberg, L., & Morris, A. S. (2003). Adolescents' emotion regulation in daily life: Links to depressive symptoms and problem behavior. *Child Development*, 74, 1869-1880.
- Sobanski, E., Banaschewski, T., Asherson, P., Buitelaar, J., Chen, W., Franke, B., ... & Faraone, S. V. (2010). Emotional lability in children and adolescents with attention deficit/hyperactivity disorder (ADHD): Clinical correlates and familial prevalence. *Journal of Child Psychology and Psychiatry*, 51, 915-923.
- Sourander, A., Helstelä, L., & Helenius, H. (1999). Parent-adolescent agreement on emotional and behavioral problems. *Social Psychiatry and Psychiatric Epidemiology*, 34(12), 657-663.
- Spear, L. P. (2002). The adolescent brain and the college drinker: biological basis of propensity to use and misuse alcohol. *Journal of Studies on Alcohol and Drugs*, SUPPL14, 71-81.

- Stavro, G. M., Ettenhofer, M. L., & Nigg, J. T. (2007). Executive functions and adaptive functioning in young adult attention-deficit/hyperactivity disorder. *Journal of the International Neuropsychological Society, 13*, 324-334.
- Steinberg, L. (2008). A social neuroscience perspective on adolescent risk-taking. *Developmental Review, 28*, 78-106.
- Steinberg, L., & Avenevoli, S. (2000). The role of context in the development of psychopathology: A conceptual framework and some speculative propositions. *Child Development, 71*, 66-74.
- Steinberg, L., Lamborn, S.D., Dornbusch, S.M., & Darling, N. (1992). Impact of parenting practices on adolescent achievement: Authoritative parenting, school involvement, and encouragement to succeed. *Child Development, 63*, 1266–1291.
- Stormshak, E. A., Bierman, K. L., McMahon, R. J., & Lengua, L. J. (2000). Parenting practices and child disruptive behavior problems in early elementary school. *Journal of Clinical Child Psychology, 29*(1), 17–29.
- Suveg, C., Shaffer, A., Morelen, D., & Thomassin, K. (2011). Links between maternal and child psychopathology symptoms: Mediation through child emotion regulation and moderation through maternal behavior. *Child Psychiatry and Human Development, 42*, 507-520.
- Suveg, C., & Zeman, J. (2004). Emotion regulation in children with anxiety disorders. *Journal of Clinical Child and Adolescent Psychology, 33*, 750-759.
- Suldo, S. M., & Huebner, E. S. (2004a). Does life satisfaction moderate the effects of stressful events on psychopathological behaviour during adolescence? *School Psychology Quarterly, 19*, 93–105.

- Suldo, S. M., & Huebner, E. S. (2006). Is extremely high life satisfaction during adolescence advantageous? *Social Indicators Research, 78*, 179–203.
- Tarter, R. E. (1990). Evaluation and treatment of adolescent substance abuse: A decision tree method. *The American Journal of Drug and Alcohol Abuse, 16*, 1-46.
- Tarter, R. E., & Kirisci, L. (2001). Validity of the Drug Use Screening Inventory for predicting DSM-III-R substance use disorder. *Journal Of Child & Adolescent Substance Abuse, 10*, 45-53.
- Tarter, R., Mezzich, A., Kirisci, L., & Kaczynski, N. (1994). Reliability of the Drug Use Screening Inventory among adolescent alcoholics. *Journal of Child and Adolescent Substance Abuse, 3*, 25-36.
- Tarter, R.E., & Vanyukov, M.M. (2001). Introduction: Theoretical and operational framework for research into the etiology of substance use disorders. *Journal of Child and Adolescent Substance Abuse, 10*, 1-12.
- Tellegen, A. (1999). MPQ (Multidimensional Personality Questionnaire): Manual for administration, scoring, and interpretation. Minneapolis, MN, US: University of Minnesota.
- Thatcher, W. G., Reininger, B. M., & Drane, J. W. (2002). Using path analysis to examine adolescent suicide attempts, life satisfaction and health risk behavior. *Journal of School Health, 72*, 71–77.
- Thompson, R.A. (1994). Emotion regulation: A theme in search of a definition. *Monographs of the Society for Research in Child Development, 59*, 250-283.

- Tseng, W., Kawabata, Y., Gau, S. S., & Crick, N. R. (2014). Symptoms of attention-deficit/hyperactivity disorder and peer functioning: A transactional model of development. *Journal Of Abnormal Child Psychology*, 42(8), 1353-1365.
- Tolan, P. H., & Henry, D. (1996). Patterns of psychopathology among urban poor children: Comorbidity and aggression effects. *Journal of Consulting and Clinical Psychology*, 64(5), 1094.
- Tomyn, A. J., Norrish, J. M., & Cummins, R. A. (2013). The subjective wellbeing of indigenous Australian adolescents: Validating the Personal Wellbeing Index-School Children. *Social Indicators Research*, 110, 1013-1031.
- Vaidyanathan, U., Patrick, C. J., & Iacono, W. G. (2011). Patterns of comorbidity among mental disorders: A person-centered approach. *Comprehensive Psychiatry*, 52(5), 527-535.
- Valois, R. F., Paxton, R. J., Zullig, K. J., & Huebner, E. S. (2006). Life satisfaction and violent behaviors among middle school students. *Journal of Child and Family Studies*, 15, 695–707.
- Valois, R.F., Zullig, K.J., Huebner, E.S. & Drane, J.W. (2001) Relationship between life satisfaction and violent behaviors among adolescents. *American Journal of Health Behavior*, 25, 353–366.
- Valois, R. F., Zullig, K. J., Huebner, E. S., & Drane, J. W. (2004). Life satisfaction and suicide among high school adolescents. *Social Indicators Research*, 66, 81–105.
- van der Linden, D., Beckers, D. J., & Taris, T. W. (2007). Reinforcement sensitivity theory at work: Punishment sensitivity as a dispositional source of job-related stress. *European Journal Of Personality*, 21, 889-909.

- Vasilev, C. A., Crowell, S. E., Beauchaine, T. P., Mead, H. K., & Gatzke-Kopp, L. M. (2009). Correspondence between physiological and self-report measures of emotion dysregulation: A longitudinal investigation of youth with and without psychopathology. *Journal of Child Psychology and Psychiatry*, 50(11), 1357-1364.
- Veenhoven, R. (1988). The utility of happiness. *Social Indicators Research*, 20, 333-354.
- Wei, C., & Kendall, P. C. (2014). Child perceived parenting behavior: Childhood anxiety and related symptoms. *Child & Family Behavior Therapy*, 36, 1-18.
- Weissberg, R. P., Kumpfer, K. L., & Seligman, M. P. (2003). Prevention that works for children and youth: An introduction. *American Psychologist*, 58(6-7), 425-432.
- Weisz, J. R., McCarty, C. A., & Valeri, S. M. (2006). Effects of psychotherapy for depression in children and adolescents: A meta-analysis. *Psychological Bulletin*, 132(1), 132.
- Wills, T. A., Windle, M., & Cleary, S. D. (1998). Temperament and novelty seeking in adolescent substance use: Convergence of dimensions of temperament with constructs from Cloninger's theory. *Journal of Personality and Social Psychology*, 74, 387-406.
- Wilson, W. R. (1967). Correlates of avowed happiness. *Psychological Bulletin*, 67(4), 294.
- Windle, M. (1989). Predicting temperament-mental health relationships: A covariance structure latent variable analysis. *Journal Research on Personality*, 23, 118-144.

- Windle, M. (1991). The difficult temperament in adolescence: Associations with substance use, family support, and problem behaviors. *Journal of Clinical Psychology, 47*, 310-315.
- Windle, M. (1992). The Revised Dimensions of Temperament Survey (DOTS-R): Simultaneous group confirmatory factor analysis for adolescent gender groups. *Psychological Assessment, 4*, 228-234.
- Windle, M., & Windle, R. C. (2006). Adolescent temperament and lifetime psychiatric and substance abuse disorders assessed in young adulthood. *Personality and Individual Differences, 41*(1), 15-25.
- Woodward, L.J. & Fergusson, D.M. (2001). Life course outcomes of young people with anxiety disorders in adolescence. *Journal of the American Academy of Child and Adolescent Psychiatry, 40*, 1086-1093.
- Witter, R. A., Okun, M. A., Stock, W. A., & Haring, M. J. (1984). Education and subjective well-being: A meta-analysis. *Educational Evaluation And Policy Analysis, 6*(2), 165-173.
- Wong, M.M., & Csikszentmihalyi, M. (1991). Motivation and academic achievement: The effects of personality traits and the quality of experience. *Journal of Personality, 59*, 539-574.
- Yang, C. (2006). Evaluating latent class analysis models in qualitative phenotype identification. *Computational Statistics and Data Analysis, 50*, 1090-1104.
- Young, M. H., Miller, B. C., Norton, M. C., & Hill, E. J. (1995). The effect of parental supportive behaviors on life satisfaction of adolescent offspring. *Journal of Marriage and Family, 57*, 813-822.

- Zahn-Waxler, C., Klimes-Dougan, B., & Slattery, M. J. (2000). Internalizing problems of childhood and adolescence: Prospects, pitfalls, and progress in understanding the development of anxiety and depression. *Development and Psychopathology, 12*, 443-466.
- Zahn-Waxler, C., Shirtcliff, E. A., & Marceau, K. (2008). Disorders of childhood and adolescence: Gender and psychopathology. *Annual Review of Clinical Psychology, 4*, 275–303.
- Zimmermann, P., Wittchen, H. U., Höfler, M., Pfister, H., Kessler, R. C., & Lieb, R. (2003). Primary anxiety disorders and the development of subsequent alcohol use disorders: a 4-year community study of adolescents and young adults. *Psychological Medicine, 33*(07), 1211-1222.
- Zullig, K. J., Valois, R. F., Huebner, E. S., Oeltmann, J. E., & Drane, J. W. (2001). Relationship between perceived life satisfaction and adolescents' substance abuse. *Journal of Adolescent Health, 29*, 279–288.