Using Self-Report Anger Assessments in School Settings

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Abstract

Students who experience high levels of anger both in and out of school are at risk for exhibiting multiple negative developmental outcomes including poor school performance, peer problems, behavioral difficulties, and concurrent emotional distress. Given this developmental trajectory, it is important for mental health professionals working within school settings to accurately identify those students manifesting anger-related problems at an early age. This chapter provides an overview of instruments designed to assess levels of anger and associated cognitive and behavioral manifestations in children and youth. Among those instruments highlighted is the Multidimensional School Anger Inventory (MSAI) specifically designed to measure anger, hostility, and aggressive behavioral expression in school settings. The role of anger assessment in developing appropriate early intervention and anger management treatment plans is also discussed.

Anger is a primary human emotion, and as such, it is only natural to expect that in the complex social context of schools with high production and performance demands, students will likely experience situations that provoke angry feelings and reactions. Anger clearly plays a vital role in the overall adaptive process. Similar to other potentially troubling emotions such as anxiety and depression, problems arise not just because a student “gets angry,” but because of the intensity and frequency of anger experiences and expression. Nonetheless, anger often differs from other
emotions in terms of how it is perceived and understood by others. A student who chronically experiences the emotion of sadness, for example, will often illicit sympathy and concern from school staff (e.g., “What can we do to help you?”), whereas a student who experiences chronic anger is more likely to illicit disapproval (e.g., “What is your problem?”). A student who experiences anger intensively may also be perceived as not just having a problem, but being a problem because she or he is perceived to disrupt the normal routine of the classroom and the school campus (Thomas, Coard, Stevenson, Bentley, & Zamel, 2009).

Chronically high levels of anger and hostility are associated with a wide range of negative developmental outcomes including physical and mental problems, academic and occupational distress, poor peer relationships, and aggressive and violent behavior, both in and out of school (Furlong & Smith, 1994; Miller, Smith, Turner, Gujjarro, & Hallett, 1996; Potegal, Stemmier, & Spielberger, 2010). Thus, there is certainly ample reason for schools to not only be concerned about the challenges that angry students present, but to recognize that these students’ behaviors indicate their risk status for various negative developmental outcomes. As a result, school personnel have a clear interest in not only monitoring and assessing students’ experiences of anger in school settings but also in recognizing that some students will require support in learning to manage angry feelings. The purpose of this chapter is to provide an overview of selected self-report instruments designed to measure levels of anger and hostility with school-age youth. This review begins with a brief discussion of some of the fundamental concerns associated with measuring anger and hostility and then describes selected instruments of potential interest to school personnel, most notably the Multidimensional School Anger Inventory (MSAI), which was designed explicitly to assess anger in school settings. The chapter concludes with a summary of best practices in anger assessment as well as some of the limitations and other obstacles associated with measuring students’ anger in school environments.

### Theoretical and Definitional Issues

Systematic appraisal of anger and the related construct of hostility is an understudied phenomenon. Since both angry feelings and attitudes are highly personal experiences, assessments tend to rely on self-report procedures. Some instruments utilize behavior ratings by teachers, parents, and others, but these run the risk of confusing internal feelings and attitudes with external behaviors, most notably aggression, which may indeed be an outward behavioral expression of anger.

The terms “anger” and “hostility” have fostered some conceptual ambiguity in the literature. At its most basic level, anger refers to an emotional reaction to a perceived internal or external provocation (Miller et al., 1996; Novaco, 2003), varying in intensity from mild irritation to extreme rage. Anger can be viewed as a transitory state or a stable and general disposition to experience this emotion more frequently and intensively (Spielberger, 1999; Spielberger, Reheiser, & Sydeman, 1995). Research distinguishes between state anger, or the degree of angry affect experienced at a particular moment in response to a particular situation, and trait anger, or one’s disposition to experience angry affect across a range of situations (Brunner & Spielberger, 2010).

Research has also distinguished between anger-in, anger-out, and anger control (Spielberger et al., 1995; Spielberger & Reheiser, 2010; Thomas & Williams, 1991). Each of these terms refers to a characteristic mode of anger expression. Anger-in refers to the tendency of some individuals to restrain or stifle the expression of angry feelings. Anger-out refers to the tendency to express anger overtly, usually through verbal or physical aggression. Anger control refers to the ability of some individuals to express anger in a controlled fashion, usually in what many would consider a socially appropriate manner, such as discussing their feelings with another. Whether it is best to withhold expression of angry feelings or to express these emotions outwardly is a matter of some controversy. Some studies (e.g., Julkunen, Salonen, Kaplan, Chesney, & Salonen, 1994; Williams, 2010)
suggest that frequent anger-out is a risk factor for a number of serious medical conditions including coronary heart disease (CHD), whereas others (e.g., Mills, Schneider, &Dimsdale, 1989) propose that outward expressions of anger may serve a protective function by reducing tension and pent-up frustration. Kerr and Schneider (2008), in their review of children’s anger expression concluded that “Children who are excessively reactive and overly expressive with their anger are more likely than others to exhibit both externalizing and internalizing problem behaviors. Children who are overly restrictive in their anger expression also seem to behave inappropriately” (p. 574).

The term “hostility” (cynicism is a term also used in the literature) refers to a cognitive process whereby other people are perceived in essentially negativistic terms (Miller et al., 1996; T. Smith, 1994). As such, hostility constitutes an attitude or worldview in which the actions of others are often perceived as intentionally harmful or intrusive, there is an expectation that negative outcomes are highly probable, and there is a desire to inflict harm on others or to see others harmed. Given the pervasive nature of these beliefs, hostility is thought to constitute a stable disposition or personality attribute. In this sense, it is similar to what was referred to earlier as trait anger (Martin, Watson, & Wan, 2000). Hostility can also be understood from a social-information processing perspective (Larson & Lochman, 2010; Schultz, Brodack, & Izard, 2010) whereby there is a bias for some youth to perceive ambiguous social interactions with aggressive interpretations. For example, particularly relevant to the school context, Camodeca and Goossens (2005) found no differences in reactive or spontaneous aggression among victims and perpetrators of bullying. However, bullies were more likely to endorse the use of proactive or deliberate, goal-directed anger and aggression than their victims. As an example of how hostility can influence classroom interactions, Wyatt and Haskett (2001) found that students with higher levels of anger more often interpreted ambiguous communications from their teachers as expressing hostility toward him or her.

Both anger and hostility have been linked to aggressive behavior, presenting another challenge for those concerned with the measurement of these constructs. It is difficult to identify the existence and intensity of angry feelings and hostile beliefs without considering how such feelings and beliefs are expressed behaviorally. In fact, there is substantial support for the notion that high levels of anger, hostile beliefs, and proneness to aggression coexist in many individuals (Furlong & Smith, 1998; Musante, MacDougall, Dembroski, & Costa, 1989). The degree to which these constitute separate and distinct constructs is unclear at this point. A number of researchers over the past decade have proposed multidimensional inventories designed to measure affective, cognitive, and behavioral dimensions of anger and hostility (e.g., Brunner & Spielberger, 2010; Martin et al., 2000; Siegel, 1986; D. Smith, Furlong, Bates, & Laughlin, 1998; Thomas, 1993). In general, these measures demonstrate moderate correlations among subscales, suggesting that anger, hostility, and aggression constitute separate but related factors. Brunner and Spielberger (2010) reported a correlation of .40 between anger experience and anger expression with a sample of adolescents. Martin et al. (2000), in a cross-instrument factor analysis of scales utilizing a sample of college students, found strong evidence supporting a multidimensional model of anger that includes affective, cognitive, and behavioral elements.

**Consequences of Excessive Anger Experience and Expression**

Considerable research over the past four decades supports the view that frequent and excessive anger, high levels of hostility, and aggressive behavioral displays toward others all contribute to overall decreases in psychological, social, and physical well-being (Barefoot & Boyle, 2009; Pote-gal, Stemmier, & Spielberger, 2010; T. Smith & Ruiz, 2002). Chronically high levels of anger and hostility are cited as risk factors for a variety of health-related concerns including cardiovascular distress, hypertension, gastrointestinal difficulties, and other diseases associated with stress to the immune system (McDermott, Ramsay, & Bray, 2001; Miller et al., 1996). Other research has
established linkages between chronically high levels of anger and problem behavior at school (D. Smith et al., 1998), poor academic performance (Heavey, Adelman, Nelson, & Smith, 1989; Hinshaw, 1992), peer rejection (Dodge, 1993), and psychosomatic complaints (Friedman, 1991). In addition, poorly controlled anger contributes to such wide-ranging societal issues as marital and family discord, child abuse, road rage, job loss, and legal difficulties (Deffenbacher, Huff, Lynch, Oetting, & Salvatore, 2000; Del Vecchio & O’Leary, 2004). In this section, we briefly review research relating anger and hostility to unhealthy lifestyle choices such as substance use and abuse, physical health, and, perhaps most importantly to readers of this chapter, violence potential at school.

**Substance Use**

The belief that anger and hostility may lead to participation in high risk, unhealthy behaviors has been corroborated by various health researchers. Anger is associated with increased tobacco, caffeine, and alcohol consumption across various youth samples (Nichols, Birnbaum, Bryant, & Botvin, 2009; Schwinn, Schinker, & Trent, 2010). In a study of the substance use characteristics of incarcerated adolescents, those who expressed anger outwardly (anger-out) had significantly higher levels of marijuana use (Eftekhari, Turner, & Larimer, 2004). Further, in a recent study of 676 U.S. war veterans returning from active duty in Iraq and Afghanistan, Elbogen et al. (2010) reported evidence of the relationship between elevated levels of anger, particularly difficulties in managing aggressive impulses, and propensity for alcohol misuse and abuse, in addition to other mental health problems including Posttraumatic Stress Disorder.

**Physical Health Outcomes**

Research indicates that anger in adults and adolescents is associated with potentially detrimental health outcomes. Such health risks include cardiovascular disease, hypertension, and higher body mass index (BMI; Chida & Steptoe, 2009; Williams, 2010). Several researchers have confirmed that various forms of anger expression (anger-out, anger-in) are associated with elevated cardiac activation and rise in blood pressure (Bongard, al’Absi, & Lovallo, 1998; Burns & Katkin, 1993; Phillips & Hughes, 2011). Research using Spielberger’s Anger–Hostility–Aggression (AHA) syndrome (Spielberger et al., 1985) found that High Anger-Out/Low-Hostile individuals displayed the greatest increase in blood pressure and heart rate, in comparison to other individuals. However, all individuals exhibited elevated levels of blood pressure and heart rate as well as increases in stroke volume and cardiac output. Additionally, Everson et al. (1996) reported in a 4-year follow-up study on male adults, that for each 1-point increase in anger expression (both anger-out and anger-in) there was an increased risk of hypertension by 12%. Thus, for people experiencing higher levels of anger, there is an increased potential risk for heart disease.

Likewise, other negative health factors have been found to be associated with anger expression. For instance, Golden et al. (2006) found that individuals reporting higher levels of trait anger also had significantly higher estimated caloric intake, higher BMI, and higher waist-to-hip ratio when compared with individuals reporting overall low trait anger scores. Additionally, these authors reported that anger temperament moderately predicted Type 2 diabetes. However, once BMI and waist-to-hip ratio were accounted for, the predictive relation between trait anger and Type 2 diabetes was no longer significant. Thus, research indicates that the relation between trait anger and diabetes may be better explained by the direct relation anger has with certain lifestyle factors and behaviors of those with elevated anger scores.
School Violence and Peer Aggression

Chronically high levels of anger and hostility have been identified as important contributors to violence potential at school (Dwyer, Osher, & Warger, 1998; Reddy et al., 2001). For example, lists of warning signs published by the American Psychological Association (APA, 1999) and the U.S. Departments of Justice and Education (Dwyer et al., 1998) include aspects of uncontrolled anger and hostility as key indices of violence potential. Each of these documents contains an array of personal, social, school, and family factors thought to increase the odds that a youth might engage in acts of violence at school. These documents do not claim to be “checklists” that can be used to assess the level of risk of future school violence. Rather, they were developed with the intention that they be used to broadly assess the contexts in a youth’s life that might push them toward or away from committing an extreme act of violence (for an extended review see Cornell, 2003, 2006; Cornell, Sheras, Gregory, & Fan, 2009; Furlong, Bates, D. Smith, & Kingery, 2004). Additionally, profiles of perpetrators of serious acts of violence at school, such as those developed by the FBI (O’Toole, 2000), frequently cite intense anger and resentment (hostility or cynicism) toward others as common characteristics of violence-prone youth. Given their potential impact, it is imperative that educators, psychologists, and other mental health personnel have reliable and valid methods for assessing these constructs in school settings (Cornell & Allen, 2011).

Assessment of Anger and Hostility in School Contexts

Although there is an increasing array of instruments aiming to measure angry emotions and hostile attitudes in child and adolescent populations, a number of these focus primarily on aggression, which is considered an expression of anger. This review focuses exclusively on those self-report instruments that adhere to a multidimensional model of anger (which includes affective, cognitive, and behavioral components of anger and hostility) and are being used in empirical research studies. Given the anecdotal recognition of the intense consequences reactive and proactive student anger and aggression can have on schools, there has been surprising little research about student anger. A search of the PsycInfo database for the title words “student anger” produced only two citations. A search using the keywords “student,” “anger,” and “assessment” returned only nine journal articles. Although the body of research related to the assessment and treatment of anger-related problems in the clinical area (Kerr & Schneider, 2008; Steele, Legerski, Nelson, & Phipps, 2009) is more extensive, this section provides an overview of the self-report assessment resources that have been used most often in school-related research.

We bring to the reader’s attention the need to consider that anger in any youth may emanate from complex sources. For example, anger difficulties may reflect a recognizable, expected response to being teased (Libbey, Story, Neumark-Sztainer, & Boutelle, 2008) or reactions to the experience of prejudice (Thomas, Coard, Stevenson, Bentley, & Zamel, 2009). In addition, youth with Bipolar Disorder or other serious mental health needs may experience and express excessive anger in schools (Cautin, Overholser, & Goetz, 2001; Rucklidge, 2006). Typically, however, in the school context, anger assessments will be used as part of a comprehensive psychological assessment or to evaluate a school-based social-emotional intervention. In the following section, we review assessment resources available for these purposes, highlighting their applications across international contexts.

State-Trait Anger Expression Inventory–2 (STAXI–2)

The STAXI-2 (Spielberger, 1999) is a widely known anger instrument (Kerr & Schneider, 2008) that has been used for more than 30 years in adult research and is being increasingly used with adolescents, often across national contexts (e.g., Armstead & Clark, 2002; Reyes, Meiningher,
Liehr, Chan, & Mueller, 2003). Many adolescent studies use the adult STAXI items without modification or make study-specific modifications, which has contributed to a lack of uniformity in its use with school-aged populations. To address this issue, del Barrio, Aluja, and Spielberger (2004) developed a Spanish-language version of the STAXI-2 with a sample of more than 2,000 youth, ages 7 to 17 years, from Spain and Latin America. Based on a series of exploratory and confirmatory factor analyses, the 57 original items were reduced to 32. Evidence for reliability and validity were positive, which was further verified in a study using an Italian translation of these same 32 items (Gambetti & Giuberti, 2009). Yet another adaptation of the STAXI was conducted by Maxwell, Sukhodolsky, and Sit (2009), whose Cantonese translation of the revised adult STAXI-2 resulted in an instrument with 46 items. These translations and favorable psychometric properties across samples have resulted in the STAXI-2 being prominently used in cross-national contexts.

Based, in part, on the earlier research adaptations of the STAXI-2, Brunner and Spielberger (2010) published the State-Trait Anger Expression Inventory–2 Child and Adolescent (STAXI–2 C/A). This commercial product was developed for use with children ages 9–18 years (written at a fourth-grade level) and is based on the earlier work of del Barrio et al. (2004). This instrument includes 35 items with two core scales measuring State Anger (intensity of angry feelings) and Trait Anger (frequency of experiencing angry feelings). State Anger, as in the adult version, includes subscales that assess Feeling and Verbal Expression. Unique for the youth version is that Trait Anger includes subscales measuring Temperament and Reaction. The STAXI-2 C/A also includes three additional core Scales: Anger Expression-Out (frequency of anger feelings that are outwardly verbally or physically expressed), Anger Expression-In (frequency of angry feelings that are kept in), and Anger Control (frequency that a youth tried to control outward expression of anger). Normative data for a U.S. population are provided based on a sample of 836 youth. Reported reliabilities for this version of the STAXI-2 C/A are better than previously published studies with youth. The alpha coefficients across the five core scales and the four subscales range from .74 to .94.

**Aggression Questionnaire**

Although Buss and Warren (2000) call their instrument the “Aggression Questionnaire” (AQ), its content is based on a comprehensive framework that links affective, cognitive, and behavioral components in a multidimensional model. The AQ has its roots in the Buss-Durkee Hostility Inventory (BDHI; Buss & Durkee, 1957) and the original Aggression Questionnaire developed by Buss and Perry (1992). The BDHI was quite long (75 items), some items were difficult to read, and some items did not fit into their assigned factors. The measurement aims of the final 34-item AQ is to assess an individual’s aggressive responses and their ability to channel their responses safely. AQ items describe characteristics related to aggression; individuals rate themselves on these characteristics on a 5-point scale, where 1 = not at all like me and 5 = completely like me. Norms are provided for three age groups: Youths (ages 9–18), Younger Adults (ages 19 through 39), and Older Adults (ages 40 and above). The AQ consists of five subscales: Physical Aggression (PHY; 8 items), Verbal Aggression (VER; 5 items), Anger (ANG; 7 items), Hostility (HOS; 8 items), and Indirect Aggression (IND; 6 items). An Inconsistent Responding (IND) Index is included, with 12 pairs of items for which responses are expected to be similar. If the IND score is 5 or higher, the administrator should have reservations about the accuracy of the individual’s responses. The AQ Total score is the sum of the raw scores for the five subscales.

Reliability and validity for the AQ is favorable, as reported in the AQ manual (Buss & Warren, 2000). Internal consistency for the AQ Total score is .94 for the entire sample and between .90 and .94 for 9- to 18-year-olds. However, internal consistency for 9- to 10-year-olds is low.
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on VER (.55) and IND (.65). Norms and core psychometric information is provided based on a sample of 1,062 youth, ages 9–18 years. Independent studies, often cross nationally, using the Buss-Perry item set have reported lower internal consistency values for school-aged youth. Walters, Ronen, and Rosenbaum (2010), for example, reported alphas of .76 and .79, respectively, for combined Physical Aggression/Verbal Aggression and Anger/Hostility scores in a sample of 9- to 12-year-olds attending school in Israel. Fossati, Maffei, Acquarini, and Di Ceglie (2003) also reported lower alpha values for a sample of Italian high school students (Physical Aggression = .81, Verbal Aggression = .53, Anger = .72, and Hostility = .68). Another study reported a lower but still acceptable Total Score alpha coefficient in a sample of Chinese high school students (alpha = .84; Liu, Zhou, & Gu, 2009).

The core construct validity of the AQ subscale structure using the Buss-Perry AQ item set has been supported by independent research with students ages 13 to 17 years (e.g., Santisteban, Alvarado, & Recio, 2007). In addition, Ang (2007) found an acceptable factor structure for a 12-item version that may be of interest for research and school-based program evaluation. A point of caution about the use of the AQ with elementary school children (ages 9–12 years) is that its subscale structure may be different; however, it still provides a viable dimensional measure of early anger and aggression. In using the items from the Buss-Perry (1992) AQ with a sample of 9- to 12-year-olds, Walters, Ronen, and Rosenbaum (2010) found that responses to the AQ reflected only two, not four, dimensions with both verbal and physical aggression loading on one factor and anger and hostility loading on another factor. Nonetheless, Walters et al. (2010) concluded that the “AQ self-report questionnaire, particularly the total score, may well be a construct-valid measure of the childhood aggression dimension” (p. 633).

Adolescent Anger Rating Scale

The Adolescent Anger Rating Scale (AARS; Burney, 2008; Burney & Kromrey, 2001) assesses the intensity and frequency of angry reactions in youth ages 11 to 19 years. The AARS aims to measure instrumental anger, reactive anger, and anger control. Instrumental anger is planned and malicious negative affect oriented toward achieving a specific goal or purpose. Reactive anger is an immediate emotional response to an anger-provoking event that is perceived as threatening, hurtful, or intentional. Anger control is the ability to engage in proactive behaviors in the face of anger provocations. Subscale scores can be computed for each of these areas and can be combined to yield a Total Anger score.

The AARS includes 41 items utilizing a 4-point response scale on which respondents indicate the frequency with which they engage in behaviors representative of instrumental anger, reactive anger, and anger control. Normative data are provided based on the responses of 4,187 males and females in middle and high schools. Five ethnic groups were represented in the normative sample. Additional information is provided on grade point average, suspensions in the past year, number of friends, friends’ behavior, and primary caretaker.

Burney and Kromrey (2001) report AARS reliability data from the initial development of the scale. Utilizing an earlier 16-item version of the scale, coefficient alphas were .83, .70, and .80 for Instrumental, Reactive, and Anger Control subscales, respectively. Test-retest reliabilities over a two-week interval, based on the responses of 155 participants, were .58, .69, and .65 for the same three subscales. In another study, Reactive Anger (alpha = .82) and Anger Control (alpha = .77) were found to replicate the AARS’s acceptable internal consistency characteristics (Bolgar, Janelle, & Giacobbi, 2008).

Validity data (Burney & Kromrey, 2001) were based on the responses of 792 students in Grades 7–12. Exploratory factor analysis utilizing a 20-item revised version of the scale identified three factors corresponding to the hypothesized underlying structure of the scale: Reactive Anger,
Instrumental Anger, and Anger Control. Construct validity for the AARS was further established by comparing mean subscale scores for groups expected to differ in terms of the constructs measured by the scale. As expected, male students, members of ethnic minority groups, older students, and those receiving special education services scored significantly higher on both Reactive and Instrumental Anger and significantly lower on Anger Control. Additionally, discriminant validity evidence for the AARS was provided by comparing subscale scores with another anger scale, the Multidimensional Anger Inventory (Siegel, 1986). Subscale correlations between these two measures ranged from –.11 to .46. Additional validity evidence was found by Bolgar et al. (2008) in a study of anger outbursts by high school competitive tennis players. These authors found that tennis players who had high Reactive Anger scores on AARS displayed more anger outbursts than players with low Reactive Anger scores.

**Multidimensional School Anger Inventory**

The Multidimensional School Anger Inventory (MSAI; Furlong, D. Smith, & Bates, 2002; D. Smith et al., 1998) is designed to assess the affective, cognitive, and behavioral dimensions of anger pertinent to the school setting and context, and has been used extensively in cross-national research. As a multidimensional scale, it measures the intensity of angry feelings in response to hypothetical school situations, levels of hostility with regard to school, and both positive and negative expressions of angry feelings.

**MSAI Development**

The MSAI is based on a three-component model of the global anger process that involves an emotional-affective component, a cognitive hostility-cynicism component, and a behavioral-expressive component. The model is consistent with conceptual definitions of anger (e.g., Spielberger, 1999). The behavioral-expressive component of the scale is further subdivided into positive and negative expressions of anger. The MSAI includes four subscales: Anger Experience, Hostile/Cynical Attitudes, Destructive Expression, and Positive Coping. Principal components factor analysis supported each of the four subscales as relatively independent measures of the general construct of anger in adolescent populations. This instrument has been used with children and adolescents ages 10–18 years (fourth-grade reading level) and can be administered in 15–20 minutes either individually or in groups.

The most recent version of the MSAI (Furlong et al., 2002) consists of 36 items. The first 13 items comprise the Anger Experience subscale and youth are asked to indicate the intensity of angry feelings they would experience as a result of a variety of frustrating school-related situations. The 13 items include both peer-and teacher-initiated conflicts and use a 4-point response scale (1 = I wouldn’t be mad at all … 4 = I would be furious). The Hostility subscale includes items 14–19. Youth are asked to indicate their level of disagreement/agreement with a series of statements pertaining to the value of school, grades, rules, and attitudes of adults such as teachers. These items use a 4-point Likert scale (1 = strongly agree … 4 = strongly disagree). Finally, Items 20 to 36 pertain to customary modes of expressing angry affect. Nine of these 17 items refer to Destructive Expression such as physical and verbal aggression, property destruction, and planned acts of retribution. The remaining 8 items refer to Positive Coping such as talking out a disagreement, engaging in physical activity, deflective use of humor, or cognitive reframing. Each item is scored according to a 4-point scale (1 = never … 4 = always).

The MSAI was normed on a sample of 1,166 adolescents in Grades 9–12. Mean subscale scores for Anger Experience, Hostility, Destructive Expression, and Positive Coping were 30.8, 12.4,
Mean scores for male students were significantly higher than for females on Anger Experience, Hostility, and Destructive Expression. Females, on the other hand, scored significantly higher than males on the Positive Coping subscale. Subscale mean scores and standard deviations are provided by grade level and by ethnicity for students in the normative sample. The MSAI's core reliability characteristics are favorable, as shown in Table 21.1. In addition, test-retest reliabilities over a six-month period based on a subsample of 508 students ranged from .56 to .62 for the four subscales (Furlong et al., 2002), which is comparable to other self-report measures of emotional functioning. Using a sample of students from the United States, evidence for construct validity was first found in a principal components factor analysis that yielded a four-factor structure supporting the theoretical model on which the scale was based (Furlong et al. 2002). As shown in Table 21.1, the factor analysis suggests four relatively independent subscales assessing affective, cognitive, and behavioral components of anger.

In another study using an independent sample of Australian adolescents, Boman, Curtis, Furlong, and D. Smith (2006) replicated the MSAI's factor structure. The Cronbach’s alpha coefficients in this sample were acceptable (see Table 21.1). Moreover, a Rasch analysis was undertaken to further explore the measurement properties of the MSAI. Aside from Positive Coping, which yielded more modest measurement properties, all remaining subscales demonstrated sound psychometric characteristics. Additionally, the EFA replicated the original MSAI factor structure, with one qualification that the Anger Experience item referring to reactions to a “teacher’s pet” had a low factor loading (.26) in this Australian sample. A CFA (AMOS 5.0) provided support for the 4-factor MSAI structure with reasonable fit statistics (RMSEA .039–.043).

The MSAI’s predictive validity was examined in a study by Boman, Smith, and Curtis (2003) who found that Australian secondary students who manifested helpless attributional styles and a general sense of pessimism were more likely on the MSAI to express higher levels of anger and greater hostility toward school, and were more likely to endorse acts of destructive expression. In a related study, Boman and Yates (2001) found that students who entered high school with expectations for negative outcomes also demonstrated high levels of hostility as measured by the MSAI.
Recent Studies Using the MSAI

Since its development, the MSAI has been used to examine youths’ school-related anger experiences in Australia (Boman, 2003; Boman, Curtis, Furlong, & D. Smith, 2006), Guatemala (Furlong et al., 2004), Iran (Aryadoust, Akbarzadeh, & Akbarzadeh, 2011; Ghanizadeh, 2008; Ghanizadeh & Haghigh, 2010), Japan (Bear, Uribe-Zarain, Manning, & Shiomi, 2009), Philippines (Campano & Munakata, 2004), Peru (Furlong et al., 2004), Uruguay (Cajigas, Kahan, Luzardo & Mungay, 2010), and Vietnam (Barker, Grefe, Burns, & DiGiuseppe, R. (2008). As shown in Table 21.1, these studies reported favorable reliability and validity characteristics across cultural contexts.

The MSAI offers researchers and practitioners an efficient and psychometrically sound instrument for identifying students with anger-related problems in school settings. One of the strengths of the scale, with regard to assessing a youth’s emotional status, is its specific application to the school context. Another is its multidimensional framework, which allows researchers and practitioners to attend to affective, cognitive, and behavioral components of anger among school-age youth. Such a distinction may have significant implications for anger management strategies and interventions. Additional research is needed to evaluate the utility of the MSAI for this and other purposes within school settings. The authors recommend that the MSAI is best used as part of a comprehensive assessment battery, which evaluates not only angry feelings, attitudes, and behaviors, but also the context and setting in which these occur.

Summary and Recommendations for Practitioners

This chapter reviewed several instruments designed to measure aspects of anger and hostility in school-age youth. Prior research has linked each of these constructs to a variety of negative physical, interpersonal, academic, and behavioral outcomes. More important, chronic anger and hostility have been related to aggressive behavior, both within and outside school settings. As such, individual levels of anger and hostility should be considered in any school-based threat assessment. A number of professional organizations have, in fact, published lists of risk factors or warning signs that include chronic anger and hostility among other key factors.

Despite these encouraging research findings, it is cautioned that assessment of anger and hostility, particularly in the school context, is still in its early stages and the vast majority of contemporary instruments rely almost exclusively upon self-report. Additionally, both anger and hostility are highly personalized experiences, often beyond the purview of informed adults such as parents or teachers. Angry feelings and hostile attitudes are often confused with aggressive behavior, which is much more observable. Students who may be developing chronic, cynical attitudes about school, family, and community may not aggressively act out these developing beliefs, but they are nonetheless often in need of counseling and other support services.

The anger assessments reviewed in this chapter are resources that can be used as part of a school-wide screening process (Dowdy, Furlong, Eklund, Saeki, & Ritchey, 2010), for the assessment of youth with emotional and behavioral disorders (Bowers, 2005), or for the evaluation of school-based anger management interventions (see Feindler, Meghan, & Garber, this volume; Larson & Lochman, 2010). In this latter regard, anger management programs for youth have proliferated within school settings in recent years and anger assessment inventories, particularly of the type reviewed in this chapter, offer the promise of matching discreet intervention strategies to the specific needs of individual students. Assessment of anger and hostility is also important if educators are to understand what motivates student behavior at school from everyday conflicts/hassles to more serious acts of violence. A summary of anger assessment implications for practitioners is included in Table 21.2 and online information is provided in Table 21.3.
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Table 21.2  Anger Assessment in School Settings: Implications for Practitioners

- Anger is a multidimensional construct with affective, cognitive, and behavioral dimensions.
- Anger, hostility, and aggression constitute separate but related factors and instruments that assess all three core constructs are important to include in any assessment.
- Youth self-report anger instruments should not be used to screen for students who might be considered at risk for future violence. These assessments have not been validated for this purpose. A comprehensive threat assessment strategy is the suggested best practice (see Allen, Cornell, Lorek, & Sheras, 2008).
- Whenever a student’s experience and/or expression of anger rises to the level of causing concern among school staff, first consider if there is any reason to suspect that the youth may be a danger to himself/herself or to others. That is, consider if there is a psychological emergency and address it.
- Always consider a youth’s anger expression within the broader context of his or her school and nonschool interpersonal relationships.
- Anger can be an expression that a person feels that he or she has been mistreated, experienced some personal or social injustice, or been treated unfairly. Part of the assessment should explore the student’s experiences of teasing, taunting, or social bias at school.
- Assessment of anger should be considered as part of a comprehensive evaluation of both externalizing and internalizing disorders in children.
- Comprehensive assessment of anger and related constructs should include not only within child characteristics and behaviors but aspects of the environment as well. Assessments are potentially of vital importance in determining the function of anger and possible related aggression in a student’s life.
- Multidimensional assessment of anger can provide specific directions for intervention efforts because it calls attention to all children, not just outwardly aggressive students (see Feindler, Meghan, & Gerber, 2011, this volume; Gansle, 2007; Larson & Lochman, 2010).

Table 21.3  Online Access Information About the Anger Instruments

<table>
<thead>
<tr>
<th>Instrument</th>
<th>Access Link</th>
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<tbody>
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<td>4. Multidimensional School Anger Inventory</td>
<td><a href="http://web.me.com/michaelfurlong/MJF-Home/MSAI%E2%80%93School_Anger_Inventory.html">http://web.me.com/michaelfurlong/MJF-Home/MSAI%E2%80%93School_Anger_Inventory.html</a></td>
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References


Stemme, G. Stemmier, & C. E. Spielberger (Eds.), *International handbook of anger (pp. 311–325)*. New York, NY: Hemisphere/McGraw-Hill.


