

AMERICAN UNIVERSITY OF BEIRUT

ADAPTATION AND VALIDATION OF THE CHILDREN'S
ANGER RESPONSE CHECKLIST FOR GRADE 4, 5, AND 6
LEBANESE STUDENTS

by
NADINE NABIL ADHAMI

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submitted in partial fulfillment of the requirements
for the degree of Master of Arts
to the Department of Education
of the Faculty of Arts and Sciences
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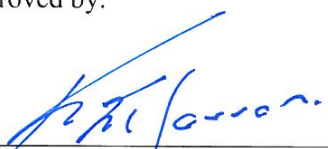
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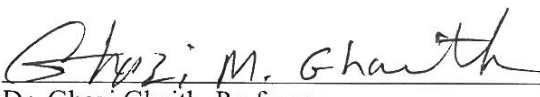
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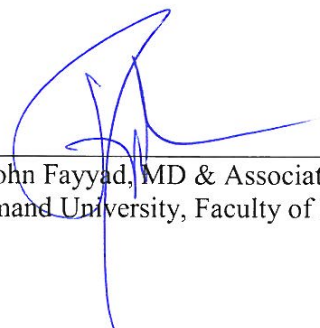
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AN ABSTRACT OF THE THESIS OF

Nadine Nabil Adhami for Master of Arts
Major: Educational Psychology/School Guidance and
Counseling

Title: Adaptation and Validation of the Children's Anger Response Checklist for Grade
4, 5, and 6 Lebanese Students

This study tackled different views about the underlying cognitive, emotional, behavioral, and physiological systems of Anger. Due to the complexity of anger, it is essential to use a multi-dimensional and comprehensive assessment tool that tackles all its underlying components and in this case it is Children's Anger Response Checklist (CARC). Not only did this study address the multi-dimensionality of anger in children, but it also tackled the limitation of not having adequate measures to assess anger's underlying cognitive processes in children. The CARC is based on Novaco's multidimensional model of anger that is built upon Bandura's Social Learning theory. Moreover, not only is there a scarcity of multidimensional anger assessment tools that target children whose ages are between 8 and 12 years old but also the Arab region lacks validated anger assessment tools for children.

The procedure consisted of Item Adaptation and Validation of the CARC. Hence, 3 Educational psychologists adapted the CARC, whereby, they checked for readability, and age appropriateness then it was pilot tested (n=67). According to the pilot work, the items of the Adapted CARC measured the intensity of anger arousal and assessed the possible responses that reflected the multidimensional components of anger in children. Then the Adapted CARC was given to 404 students in grades 4, 5, and 6 from seven randomly selected private schools in Greater Beirut, Lebanon.

Statistical Analysis was done that investigated the construct validity by examining convergent and divergent validity, factor structures, and reliability (test-retest reliability) of the adapted CARC. The reliability of the test both internal and over time was very good. The test proved to have a significant but low to moderate convergent and divergent validity with the M-SAI. When investigating factor analysis A-CARC subscales loaded to 3 factors that reflected the maladaptive-aggressive manifestations, maladaptive-passive manifestations and adaptive-assertive manifestations of anger. This holds with its implications for assessment and early interventions. Limitations of the study and recommendations for future studies are discussed.

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CHAPTER I

INTRODUCTION

This chapter presents the context and statement of the problem as well as the purpose, rationale, and significance of the study.

Context of the Problem

One of the most prominent issues that children face and teachers complain from in schools is Anger. Based on various prevalence reports, some of the key reasons children are referred to counselling and therapy are anger-related problems, such as oppositional behaviour, hostility, resentment, and verbal and physical aggression (Sukhodolsky, Solomon, & Perine, 2000; Blake, & Hamrin, 2007). Strong correlations have been made between high levels of anger in children and problematic behaviour at school, poor academic performance, peer rejection, and psychosomatic complaints (Smith, & Furlong, 1998; Sukhodolsky, Solomon, & Perine, 2000; Blake, & Hamrin, 2007). Moreover, anger takes part as a main element associated with many externalizing and internalizing childhood disorders, including Oppositional Defiant Disorder, Conduct Disorder, Attention Deficit/Hyperactive Disorder, and depressive and anxiety based disorders (Smith, & Furlong, 1998; Sukhodolsky, Solomon, & Perine, 2000). According to Feindler, Adler, Brooks, and Bhumitra (1993), the study of children's anger is critical, as it has also been identified as a factor in child and adolescent suicide.

Hence, there has been an emerging interest among researchers and practitioners of school psychology and counselling in the area of children's anger-related problems and the associated constructs of hostility and aggression (Smith, & Furlong, 1998;

Furlong, Smith, & Bates, 2000; Feindler & Engel, 2011). In addition, there is a need for early identification of students experiencing anger-related problems, and preventing that from developing by introducing effective strategies to increase students' ability to manage, regulate and cope properly with interpersonal conflicts. The early identification and prevention is important due to the ongoing concerns about violence in and out of school settings (Furlong, Smith, & Bates, 2000; Feindler & Engel, 2011).

Historically, most of the focus in the area of anger-related concerns has been on assessment of overt behaviours or related constructs such as aggression, hostility etc., rather than focusing on anger's multi-dimensional components (Boman, Curtis, Furlong & Smith, 2006). However, since 1976, it has been widely recognized that anger is a construct with multifaceted components that includes not only aggressive behavioural expressions but affective, cognitive and physiological components as well (Novaco, 1976; Smith, & Furlong, 1998; Blake, & Hamrin, 2007; Feindler & Engel, 2011). It is worth noting that there are various assessment tools used to measure anger, yet, their application with children and adolescents has been somehow limited and the complexity of its subcomponents understudied (Boman, Curtis, Furlong, & Smith, 2006). Moreover, multiple assessment tools that have been made to measure the construct of anger have received many criticisms related to the lack of a clear theoretical base. For example, some scales have aggression or aggressive subscales, whereas others measure constructs such as hostility or anger experience (emotional intensity) and frequency of experience. Moreover, there is a scarce amount of research done that tackles the underlying cognitive processes/components of anger. Novaco criticized many psychometric measures of anger as they overlooked some of anger's multidimensional components (Boman, Curtis, Furlong, & Smith, 2006).

Raymond Novaco, a well-renowned psychologist and professor in the University of California, Irvine, has published a plethora of literature about anger since 1975 and until now. *Novaco's Model of Anger* describes anger as an *emotional response to provocation*, characterised by *heightened automatic arousal, cognitive appraisals about provocation events*, and *behavioural reactions toward or away from the provocation* (Novaco, 1976; Feindler, Adler, Brooks, and Bhumitra, 1993). Some anger assessment tools have been developed based on Novaco's dimensions of anger, which are considered to be sound basis for developing anger instruments with clear theoretical underpinning (Boman, Curtis, Furlong, & Smith, 2006). For example, the Multidimensional School Anger Inventory, Novaco's Anger Scale and the Children's Anger Response Checklist (CARC) are all based on Novaco's model of anger. However, for the purpose of this study the CARC will be used.

The Children's Anger Response Checklist (CARC) is an anger assessment tool that was developed in 1993 by Feindler, Adler, Brooks and Bhumitra, based on Novaco's model of anger, i.e. includes behavioural, cognitive, physiological and affective components. In addition, CARC puts weight on assessing the cognitive component of anger, as it has been evident that the non-overt form of reaction to "experienced anger" or non-overt manifestation of anger, leads to destructiveness because it is not readily addressed (Feindler, Adler, Brooks, and Bhumitra, 1993). According to Bandura's Social Learning theory, internal events that include *self-referrant* thoughts about one's abilities, also known as the distinct human form of cognitions, have a significant impact on one's behaviour (Powell, Symbaluk, & Macdonald, 2002). Given the current importance of cognitive determinants and children's attributional style seems to be a critical component of anger assessment

(Feindler, Adler, Brooks, and Bhumitra, 1993; & Hobbs & Yann, 2008). Consequently, the CARC is designed in a manner that anger-provoking situations precede and subsequently responses are elicited, thus making the social learning theory a base to this assessment tool (Feindler, et al, 1993).

The CARC is based on Albert Bandura's Social Learning Theory, because it emphasizes the importance of observational learning and cognitive variables in explaining human behaviour. Bandura suggested that environmental events, person variables i.e., "thoughts and feelings" and behaviours are seen as having reciprocal influence on each other. Therefore, the CARC pinpoints the specific maladaptive and adaptive emotional, cognitive and behavioural aspects of anger that can be attended to at an early stage by using cognitive behavioural therapy (Powell, Symbaluk, & Macdonald, 2002).

One can, therefore, assume that Novaco's Model of anger falls easily within the social learning theory, and assessment based on Novaco's model can not only yield fruitful information about the complexity of anger, but can also prevent from socially unacceptable behavioural responses (aggressive responses). Therefore, it is important to adapt and validate the Children's Anger Response Checklist to the Lebanese population for two major reasons.

First, Lebanon and the rest of the Arab countries lack valid anger assessment tools for children. This has been concluded after the researcher looked into different Arab journals and databases, such as Shamaa and IDRAAC.

Second, Lebanon is a country with constant political and economic instability, therefore, putting children at risk of developing impulse control disorders (Karam et al, 2008). Accordingly, there is a need to have a valid anger assessment tool for children

that is adapted to the Lebanese population in order to help with the early identification of anger related problems.

Research Problem

Although there are assessment tools, specifically self-report inventories that have been developed for studying anger, few of the recent assessment tools have incorporated items that are considered important to test for the multidimensionality of anger's components (Feindler, Adler, Brooks, & Bhumitra, 1993; Boman, Curtis, Furlong, & Smith, 2006). In addition, the Arab world and particularly Lebanon, lack adapted anger assessment tools for children. The problem is the presence of a gap in literature, specifically in Lebanon to present self-report instruments that measure the underlying cognitive distortions or appraisals of anger, physiological arousal, emotional response, and the child's prediction concerning a behavioural solution. Let alone the scarce research about children's anger in Lebanon. Novaco maintained that anger in particular, is an emotion that has been misinterpreted, scientifically neglected and accordingly there have been inconsistent, exchangeable definitions associated with its semantically related equivalents such as aggression and hostility (Lindquist, Danderman & Hellstorm, 2003). Therefore, it was important to adapt and validate an anger assessment tool in Lebanon, such as the Children's Anger Response Checklist, a self-assessment tool that examines the underlying cognitive, behavioural, emotional and physiological components of anger for children.

Purpose of Study

This study adapted and validated the Children's Anger Response Checklist to the Lebanese population so that it can be used to assess the underlying multidimensional components of anger (cognitive, emotional, behavioural and physiological) in children

from grades 4 through 6. The purpose of the study is to investigate the *reliability* and *construct validity* of the adapted CARC.

Moreover, the purpose of the CARC which is based on Novaco's model of anger is to further the understanding of children's anger and refine assessment techniques by providing a multidimensional measure derived from a theoretical construct. It is very important to have an assessment tool that tests for children's multidimensionality of anger, by utilizing an effective child assessment strategy, i.e. hypothetical problem situations, that elicit self-report of probable responses in the cognitive, emotional, physiological and behavioural domains, rather than adapting an anger assessment tool that employs only global Likert-type estimates of anger arousal intensity. Furthermore, the purpose of investigating anger's multidimensional components is to avoid the confusion of anger and aggression, because aggression is regarded as one of the behavioural manifestations of anger and not an equivalent (Feindler, Adler, Brooks, & Bhumitra, 1993).

Justification or Rationale of the Problem

Although there are recent anger assessment tools that have been developed and/or old ones that have been revised, but there still lays a gap in literature that tackles the assessment of the underlying complexity of anger's components, and particularly in children. Therefore, the rationale for this study is the existence of a gap in the literature and particularly in having tools in Lebanon that assess the multidimensionality of anger through a self-report assessment tool. And in turn the second rationale would be replication of a past research, done by Feindler, Adler, Brooks, and Bhumitra in USA during the year 1993, in a different context (Lebanon) for children whose ages range from 7 to 11 or 12 years old. Recent studies that tackle the contemporary approaches to

assessment of anger, recommend the use of CARC as a comprehensive tool that assesses how children would think, feel, and act in response to ten hypothetical anger provoking situations (Boman, Curtis, Furlong, & Smith, 2006; Blake, & Hamrin, 2007; Feindler & Engel, 2011).

Since anger itself is a private, and subjective event (i.e. an emotion), hence, the rationale behind measuring anger using self-report techniques, is to understand the cognitive events associated with anger (i.e. thoughts, self-statements, private speech, and images), and these also include attributions, expectancies, self-evaluations, and/or task-relevant or irrelevant self-statements and images; physiological arousal; and the child's prediction concerning a behavioral solution. Despite the known limitations of self-report inventories, the prominence of cognitive-behavioral therapeutic techniques of anger, called for the need to design instruments that enable children to describe covert, affective, and cognitive events related to anger (Nelson, Hart, & Finch, 1993; Feindler, Adler, Brooks, & Bhumitra, 1993; Feindler, & Engel, 2011). Moreover, it was highly important that a children's anger assessment tool be adapted to the Lebanese population for two reasons.

The first reason is that there is an ethical responsibility to use measures that are culturally valid (Culhane & Morera, 2010), and in Lebanon's case there is a lack of validated anger assessment tools for children. Even though anger has been universally known to be a biologically based emotion, yet, anger is clearly interpreted, managed and regulated differently in different contexts. Cultures differ in their attitudes and perceptions towards anger, norms regarding its expression, and beliefs about its magnitude and/or normalcy in children. The contributors to differences in cultural view

of anger are children's experiences and encounters, background, and child upbringing patterns (Stearns, 2004; Culhane & Morera, 2010).

According to Lindquist, Danderman & Hellstorm (2003), anger is a "socially evolved, interpersonal indicator, designed to overcome obstacles in social interaction, the experience and expression of which show socialized culture-specific variations" (p.774). Therefore one can see that it is essential to adapt, validate and make the CARC reliable in Lebanon so it can be used in the course of assessing such an important culture dependent variable (anger).

The second reason behind adapting the CARC is that there is a significant unmet need for early identification and treatment of children with impulse control disorders particularly in Lebanon (Karam et al., 2008). These children have problems with controlling their anger or impulses, which may lead to hurting oneself or others.

Historically and to the time being, Lebanon has been known to be the heart of constant internal and external political instability, mischief and recurrent wars that inflicted and still inflict mental and psychological problems on children and adults. According to Chimienti, Nasr, & Khalifeh (1989), 30% of Lebanon's urban children who were subjected to war between the age 3 and 9 years old, were classified to be at high risk of developing psychological disorders later in life. Anger was consistently found to be a more habitual coping response to the sporadic events happening in Lebanon. It was reported that the general emotional reaction of children who were exposed to war, was 83% fear, 77% *anger* and 76% anxiety (Chimienti, Nasr, & Khalifeh, 1989).

Children (especially ages between 4 and 11) symbolize a vulnerable population and trauma experienced at this time may have consequences on different areas of

development. War traumatized children at this age might experience biochemical changes in their brains that would create psychological problems that interfere at the social, emotional, academic and behavioral level (Garbarino, Zurenda & Vorrasi, 2008). The latest publication done in Lebanon about the prevalence rates and onset of mental disorders due to war exposure indicates that almost half of the Lebanese were exposed to one or two war events (Karam, et al., 2008). Statistics showed that war exposure increased the risk of onset of anxiety; mood and *impulse control disorders*. It is worth noting that prevalence rates of people with impulse control disorders are 4.4% of the Lebanese population. More specifically, statistics showed that being very young children whose age ranges between 0 to 10 years old, at the initiation of war or any unstable and ongoing political situation, puts them at high risk of developing a first onset of impulse control disorders at that young age (Karam et al., 2008). Therefore, it is worth adapting and validating the CARC to the Lebanese population, based on the aforementioned effects of war events on the onset of anger related disorders in children.

As for the rationale behind the choice of children whose age ranges between 8 and 12 years as participants in this study is based on the scarcity of research about anger in children and hence the shortage of anger assessment tools for this age group. Moreover, knowing that one of the fundamental areas that CARC addresses is the underlying cognitive processes behind anger, and based on the unique cognitive characteristics of this age group; school counsellors should have valid and reliable anger tools to identify children's maladaptive thoughts and empower them with more adaptive strategies. According to Piaget's cognitive stages of development, children at this age start developing logical schemes that allow them to perceive, understand situations and solve problems in a more logical manner (Biehler & Snowman, 2004; Benaroch, 2012).

This is a cut off age whereby children are ready to identify, understand, perceive anger situations, feel angry, and react based on their anger. At this age, children begin developing self-image based on their evaluation of their physical, cognitive, social, and emotional abilities (Biehler & Snowman, 2004). Therefore, they are able to detect emotions (anger) in self and in others, set means of controlling and regulating them (anger feelings), and formulate a self-image based on feelings they experience as well as those experienced by others around them. Therefore, the use of CARC for this age group will make children aware of the extent to which they are angry, and what their maladaptive or adaptive strategies of dealing with anger are. Based on the information the CARC yields, this would be important for empowering children at this age (grades 4 to 6) with anger management strategies, as they would be ready to understand and utilize them.

Therefore, it was vital to take this into consideration and adapt an assessment tool that targeted not only cognitive distortions underlying anger, but also the multidimensional aspects of anger in children. When an assessment tool like the CARC is used with children, it would yield important results for prevention measures and early intervention. According to the purpose of the study, the CARC was used at this age level for the preventative role that it plays in children.

The CARC lends itself to be used by counsellors and character education teachers at the beginning of each academic year. The CARC will show how each student perceives and plans to respond to anger-provoking situations, and can be utilized for treatment planning, and for pre- and post-intervention assessment.

Significance i.e. Implications of Findings to Practice and Theory

The significance for adapting the CARC serves to inform both research (theory) and treatment (practice) of children with anger problems. Moreover, it plays a huge role in prevention of anger-related disorders that might develop at a later stage.

It serves to inform theory, because CARC's multidimensional scales are based on the cognitive behavioural and social learning theories, which can yield fruitful findings to counselling theories of anger. Moreover, based on Feindler's et al. (1993) research, "Because the CARC format presents a sequence of anger-inducing antecedent situations and subsequent responses, the device itself lays the foundational rationale for a social learning theory-based treatment approach" (p. 347). Furthermore, it specifically assists in the assessment of cognitive theories of anger and provides a means for assessing the potential mode of treatment for children with anger i.e. gives the potential to evaluate effective interventions of anger (does cognitive restructuring produce greater reduction of anger-related thoughts than relaxation training?) (Martin & Dahlen, 2007).

In parallel CARC serves practice, because, it benefits counsellors at the pre-treatment, treatment, post-treatment (evaluation) and the diagnostic level. Thus, making this device useful at the preventative and intervention level.

The Adapted CARC can be administered at *pre-treatment level*, which can aid in assessing the degree to which the child perceives him/herself to be angry in different situations, and how he/she would choose to respond. Due to the fact that it presents non-overt (cognitive and emotional) manifestations of anger in children, it will be useful for complementing and enhancing the data collected from teachers' and parents' reports/interviews and for early identification of anger-related difficulties that have not been exhibited in overt behavioural manner (Feindler et al., 1993).

Therefore, this instrument benefits students who are referred for anger management problems at school, whereby the counsellor can administer CARC before delivering anger management sessions.

According to Feindler et al. (1993), *when developing a treatment plan*, “the CARC will specifically yield individualized anger response profile for each student, and thus each of the differentiated components (cognitive, affective, physiological and behavioural) can be assessed for appropriate skills training or therapy, e.g. assertiveness training, problem solving skills, affective labelling skills, inoculation therapy” (p. 347). For instance, when a student frequently responds to the hypothetical situations with psychological problems or avoidance responses, the counsellor would assume that the child is portraying anxiety and/or stress related signs related to anger. Hence, individualized relaxation techniques such as deep breathing or progressive muscle relaxation could be used. However, if a student responds with frequent self-blame responses, the counsellor would monitor negative self-statements and negative attributions concerning the anger provoking situations and would develop individualized cognitive restructuring strategies as a treatment approach (Feindler, 1993).

The Adapted CARC could be used along with mood initiation procedures to know whether people determined to have cognitive vulnerabilities to anger would in fact think or behave differently when provoked (Martin & Dahlen, 2007). Hence, this provides implications for the counsellor to administer CARC at the beginning of the academic year, which would yield individualized adaptive and maladaptive anger response profile for each student. Moreover, it gives the counsellor some insight when

developing character education lessons that target anger, by differentiating anger management strategies relative to different anger response profiles.

The counsellor can then use the CARC as an *evaluation tool* over the academic year, to check if the anger management lessons were effective and if the students developed more adaptive approach to anger. It also lends itself to be used for self-monitoring administration, which would help the counsellor in teaching specific and appropriate alternative responses to anger provocation (Martin & Dahlen, 2007; & Feindler et al., 1993).

In addition, the CARC can be used as a *diagnostic tool* for early identification of non-overt or underlying components of anger at the pre-clinical level and related difficulties that would in turn make use of preventive intervention in school settings. Although the following significance is out of the scope of this study, however it is worth noting the nature of its added value. In a clinical setting, when the counsellor is working with emotionally disturbed children, the CARC can differentiate between close degrees of similarities and differences of the individual case and help in assessing internalized anger reactions, which can act as possible signs to developing depression and/or psychopathology at a later stage (Feindler et al., 1993).

Therefore, this study adapted and validated the Children's Anger Response Checklist to the Lebanese population so that it can be used to assess the underlying multidimensional components of anger in children from grades 4 through 6.

Limitations

- The Children's Anger Response Checklist was adapted and administered only to the population of children in Lebanon, Greater Beirut area only, that are in grades 4, 5,

& 6. Therefore, this limited its *generalizability* to other age groups, regions in Lebanon and different cultures.

- Due to the fact that the CARC is adapted to the Lebanese population in the English Language, there will be a need to Arabize it to cater for all students in public and private schools, regardless of their second language knowledge.
- In addition, because the CARC is a self-report assessment tool, counselors should bear in mind to use additional data collection tools, because it is likely to display *social desirability elements and response bias* (Feindler & Engel, 2011). According to Feindler and Engel (2011), some of these additional data collection tools can be direct observation; ratings by parents, teachers and staff; analogue role-play methods and self-monitoring tools (Feindler & Engel, 2011).

CHAPTER II

LITERATURE REVIEW

Due to the fact that there has been a scarcity of research done in order to develop our understanding of specific underlying multidimensional components of anger; the following section will be discussing literature that tackles different definitions and views of underlying systems of anger. Then it will tackle the risk factors of unidentified and untreated anger. In addition, the following section will also present some literature that discusses different assessments that have been used to measure anger, specifically the Children's Anger Response Checklist (CARC), and their implications in relation to this study. Furthermore, literature that tackles interventions related to cognitive distortions of anger will be discussed.

It is important to take into account the diverse views that have been expressed in research in order to give us a better understanding of the fundamentals of Anger. This would allow us to know what to target when assessing children that have anger problems. Now let us look at the different definitions and components of anger before going on discussing anger assessment tools.

Definition of Anger

There has been a considerable historical and philosophical agreement that anger is a moral emotion that entails attributions, appraisal and interpretations of intent towards a situation viewed to be personally offensive. Therefore, based on the philosophical perspective Plato, Aristotle, Seneca, Aquinas, Descartes, defined anger to be a result of an appraisal of deliberate, negligent, or avoidable, minor wrong doing that

anger is directed towards a person. Moreover, desires associated with anger consist of punishment for, or correction of the wrongdoing that has been carried out (Power & Dalgleish, 2008). One can see that it goes back in history that anger constitutes or is tremendously affected by cognitive integral processes. Therefore, most of the following definitions put an initial emphasis on the cognitions related to anger.

According to Martin and Dahlen (2007), anger is a subjective affective (feeling) construct that is associated with number of negative cognitive, physiological, behavioral, emotional, and interpersonal consequences. From a Cognitive-Behavioral perspective, the role of biased/distorted cognitions such as attributions is emphasized in people that have anger problems (Martin & Dahlen, 2007). Martin and Dahlen (2007) stated that anger is related to five cognitive distortions, misattributing causation, overgeneralization, inflammatory labeling, demandingness and catastrophic evaluation.

Moreover, the following definition incorporates the basic principles of cognitive theory, by Beck, Ellis, and Meichenbaum, whereby the cognitions are maintained in the form of appraisals, judgments, and attributions that affect a child's emotional or behavioral responses to any given situation (Prendes, n. d.). Consequently, Kassinove and Sukholdosky, defined anger as a negative feeling or state related to cognitive and perceptual distortions (misappraisals, errors, attributions of blame, injustice, preventability, intentionality, subjective labeling), physiologic changes, and behavioral reactions (action propensities to participate in socially generated and reinforced, organized behavioral scripts); that is often associated with sorrow, trouble, rage, and wrath (as cited in Blake, & Vanya, 2007, p. 209; & Prendes, n. d., p. 5).

Other researchers have characterized anger as a natural, healthy, appropriate, life-enhancing emotion with adaptive roles (Blake, & Vanya, 2007; & Prendes, n. d.).

However, others have described anger as a passion and motivational state that encourages a child to approach and engage in aggressive actions (Feindler, 2006).

Feindler (1993) stated that Novaco's behavioural description of anger is, "an emotional response to provocation, characterized by heightened automatic arousal, cognitive appraisals about provocation events, and behavioural reactions toward or away from the provocation (someone or something perceived as being aversive)" (p. 337). This definition puts emphasis on the interpersonal nature of anger and that there is generally a perceived stimulus thought to be aversive (Feindler, 2006).

Putting together all the latter definitions, they portray anger as a multifaceted emotional construct comprised of cognitive, physiological, and behavioral components. Therefore, the following comprehensive definition has been suggested to be utilized by counsellors, clinicians and researchers:

Feindler (2006) stated that anger is a negative, phenomenological feeling/state that motivates desires for actions, usually against others, that aim to warn, intimidate, control, or attack, or gain retribution. It is associated with cognitive and perceptual distortions and deficiencies, such as the following:

- Misappraisals about its importance (e.g., "It's awful")
- Misappraisals about the capacity to cope (e.g., " I can't deal with this")
- Justice-oriented demands (e.g., "He should treat his friend fairly and with more respect")
- Evaluations of others ("She should have known better than to try to cheat. She's a cheater!")

- Dichotomous thinking (e.g., "Either he's my friend or he's not. It's just that simple! Is he with me or against me?")
- Overgeneralization (e.g., "Since he didn't talk to me, it clearly means he doesn't like me")
- Attributions of blame coupled with beliefs about preventability and/or intentionality (e.g., "It's all her fault. If she had really thought about it, she would not have said that.")
- Subjective labelling of the feeling (e.g., "I feel really pissed")
- Fantasies of revenge and punishment (e.g., "Now I'll teach her a real lesson!")
- It is also typically, but not always, associated with the following Physiological changes (e.g., heart rate, sweating)
- Socially constructed and reinforced patterns of behaviour that define how to act when angry (e.g., using a loud voice, using profanity, glaring, crossing the arms, smirking) (p. 4).

Hence, Feindler's latter comprehensive definition of anger is going to be adopted in this study, as one can see that it incorporates the four aspects that the Children's Anger Response Checklist assesses, the underlying cognitive, emotional, physiological and behavioural aspects of anger.

Now it is worth turning our attention to shed some light on contemporary theories of anger.

Theories of Anger

Three theories will be discussed in this section starting from the oldest to the most recent to give the readers an idea about the evolution of different perspectives of anger. However, for the course of this proposal, emphasis will be put on the most contemporary theory, *Novaco's Cognitive Theory of Anger*.

The Reformulated Frustration-Anger-Aggression Hypothesis (1939)

First, researchers once believed that frustration, an external interference with the occurrence of a certain event, presupposes anger, which is a behaviour that leads to the injury directed to someone. However, the previous hypothesis was reformulated by Berkowitz, where he placed anger as a mediator to aggression. Therefore, the theory proposes that frustration, will necessarily lead to anger. On the other hand anger acts as a driving force that most probably would lead to aggressive behaviour. In other words, anger is not the primary cause of aggression; it merely mediates the exhibition of aggressive behaviour, which is initiated by frustration (Power & Dalgleish, 2008).

Berkowitz's Neo-associative Model of Anger (1960, 1990)

This model is a reformulation of the hypothesis stated above. It suggests that an event labelled by cognitive appraisal as “aversive” will generate a “negative affect”. This negative affect gives rise to two reactions simultaneously: bodily and emotional changes including alteration in idea and even memory associated with the unpleasant event about how to escape it and bodily reactions, feelings, thoughts and memories pertaining to thoughts of aggression. Hence, according to this model memory acts as a mediator that will trigger experiences of anger and fear, which in turn will activate the two reactions (escape and aggression). Furthermore, the perception of “aversive”

stimuli of any kind increases the feeling and thoughts and motor reactions of anger, which would lead to aggression (Power & Dalgleish, 2008).

Novaco's Cognitive Theory of Anger (Late 1970s, till now)

Novaco's model of anger represents the most prominent theoretical description of anger and his anger control training provides the most comprehensive and systematic therapy for anger problems to date (Power & Dalgleish, 2008).

Novaco provides a good descriptive framework to develop our understanding of the main processes involved in anger. According to Novaco, external events get "cognitively processed" which leads to an emotional arousal (anger) and in parallel a physiological response is elicited. However, this physiological response can be identified differently depending on ones' interpretation and perception of the triggering events and the contextual cues. When emotional arousal takes place (anger is elicited), four behavioural reactions can occur. These are physical antagonism, verbal antagonism, passive aggression, and/or avoidance withdrawal. Consistent with the physiological response, the behavioural response depends on how the triggering event is perceived, the person's past experiences and the predicted outcome (Power & Dalgleish, 2008).

For the purpose of this study, we are going to restrict ourselves to Novaco's model of anger, which describes anger multidimensionally and the Children's Anger Response Checklist is based on it.

Underlying Cognitive, Emotional, Physiological, and Behavioral Components of Anger

Due to the fact that the Children's Anger Response Checklist assesses anger based on its multidimensional aspects, it is worth shedding the light on these different aspects, because we need to understand how these constituents play a role in the anger episodes before we go on assessing it.

Anger is viewed as a "moral" emotion, thereby viewed as a response to a personal offence. Accordingly, there is a need to understand the judgments of blame, interpretations and attributions, of intent that are involved in this experience. Therefore, the moral judgments involved in anger puts a major role on the cognitive processes to be integral parts of the anger experience (Power & Dalgleish, 2008).

Cognitive Component of Anger

Based on several studies, the following section, will discuss different cognitive processes in relation to anger experience. First, a study about five underlying cognitive distortions of anger will be discussed. These are misattributing causation, overgeneralization, inflammatory labeling, demandingness, and catastrophic evaluation. Second, a study will be discussed to check whether anger rumination, will increase the anger experience. Then, a study about the influence of personal attribution, in other words, how a person attributes the intent of the provoking stimulus, on the anger experience, will be noted. The final section will tackle a correlation study done to show if there is an association between hostile attribution biases and anger response.

Five underlying cognitive distortions of anger.

It is important to know what kinds of cognitions are experienced in the state of anger in order to control for any upcoming consequences of anger and to develop a specific course of treatment. Martin and Dahlen (2007) conducted a study whereby they developed a theoretically derived instrument that measures the cognitive processes thought to be associated with maladaptive anger. Cognitive-behavioral theories of anger highlight the role of prejudiced information processing with people that have anger problems. There are five cognitive distortions that have been stressed on in research concerning anger. First, *misattributing causation*, that is the process of making negative assumptions and ignoring the other rational interpretations. Second, *overgeneralization*, that is the inclination to use broad language when they are judging a provocative situation, for example, utilizing words like, “always, never, everybody, nobody”. Third is *inflammatory labeling*, whereby people tend to categorize situations in highly negative manner, by using offensive language and extremely emotional terms. Fourth is *demandingness*, whereby individuals place their own needs and desires above those of others, e.g. “Things *should* go my way!” and would experience low frustration tolerance. The fifth one is *catastrophic evaluation*, whereby a person would tend to evaluate events as extremely negative and his/her coping skills as totally insufficient. These ways of thinking lend itself to experience excessive anger when faced with a provocative situation. They would be latent until activated under stress (Martin & Dahlen, 2007).

There are few instruments that test for anger related cognitive experiences, however, these instruments measure specific thoughts that may occur during an angry state and not the cognitive predecessors of an angry state. Therefore, a study was done

that explains the development of the Angry Cognitions Scale (ACS), a 54-item self-report scale designed to assess the cognitive processes theoretically associated with maladaptive anger (Martin & Dahlen, 2007).

326 undergraduate psychology students participated in the study, whereby they were given a packet of questionnaires in groups of 40-100. The packet included demographic forms, then the ACS items, the State-Trait Anger Expression Inventory-2 (STAXI-2), the Hostile Automatic Thoughts Scale (HAT), the Anger Consequences Questionnaire (ACQ), and the Automatic Thoughts Questionnaire-Positive (ATQ-P) (Martin & Dahlen, 2007).

Convergent and discriminant validity was provided by the comparisons between the ACS subscales with the measures of trait anger, maladaptive anger expression, hostile automatic thoughts and positive automatic thoughts. The *five cognitive distortions* measured by the ACS were positively correlated to *trait anger, aggressive anger expression, unhealthy anger suppression, hostile automatic thoughts and anger consequences*. However, these 5 cognitive distorted processes were inversely related to adaptive anger control and positive automatic thoughts. Following the same line the Adaptive Processes subscale was positively related to adaptive anger control and positive automatic thoughts, and inversely correlated to trait anger, maladaptive anger expression, hostile thoughts and anger consequences. It has been proven that the six ACS subscales contributed in predicting trait anger, anger expression/control, and anger consequences, independent of respondent gender.

Moreover, it was found that participants who were high in anger trait differed from low trait anger participants in their use of cognitive processes measured by ACS.

Participants higher in anger trait reported higher use of the 5 cognitive distortions and the participants low in anger trait used more of the adaptive processes. This study shows that the underlying cognitive distortions of anger play a role in inappropriate anger expression, hostile automatic thoughts and anger consequences (Martin & Dahlen, 2007). ACS tests for the underlying cognitive distorted cognitions in adults, therefore, there is a need to use a children's anger assessment tool that can unravel children's distorted cognitions in anger situations.

Anger Rumination increases Angry Feelings.

Lately some researchers began to investigate the role of rumination i.e. the propensity to ponder about negative experiences and feelings (Anestis, et al, 2009). Some studies focused on anger rumination, the tendency to focus on affect-related thoughts during an anger episode (Anestis, et al, 2009). Those studies hypothesized that anger rumination would have different sets of emotional and behavioral responses. They speculated that anger rumination, aggravates and intensifies the feeling of anger (Anestis, et al, 2009). Ray Digiuseppe mentioned that rumination and resentment are crucial aspects of the anger experience, therefore making rumination an important target in anger treatment (as cited in Feindler, 2006, p.12). Some studies demonstrate that aggressive behavior is believed to have affect-regulating properties, and is used as a means of emotion regulation (Anestis, et al, 2009). In other words, people that ruminate about anger are believed to directly engage in aggressive behaviors, which in turn alleviate the anger feelings.

In light of the latter, Anestis (2009), conducted a correlation study to consider the relationship between anger rumination and the following four aspects that are,

Anger, Hostility, Verbal Aggression, and Physical Aggression (Anestis, et al, 2009).

Two hundred undergraduate students (68.5% females) were asked to fill out a series of questionnaires reporting on cognitive, affective and behavioral variables (Anestis, et al, 2009). Their age ranged between 16 and 25 years. They were asked to fill out the Anger Rumination Scale (Independent variable). Then the participants were also asked to fill a 29-item self-report questionnaire called the Buss-Perry Aggression Questionnaire that measures the 4 aspects of aggression (Dependent variables) (Anestis, et al, 2009). The questionnaire consists of four subscales, the *Physical Aggression subscale* and the *Verbal Aggression subscale*, the *Anger subscale*, and the *Hostility subscale* (Anestis, et al, 2009).

Results showed that anger rumination significantly predicts physical aggression, verbal aggression, and hostility (Anestis, et al, 2009). The prior findings are supported by other studies that aggressive behaviors may act as distracters from anger rumination, enabling anger levels to subside momentarily (Anestis, et al, 2009). Hence, anger rumination is not a predictor of anger, and it does not mean that a person who ponders over anger episodes will experience higher levels of anger. Ruminating about anger may increase the anger temporarily but does not lead to persistent high levels of anger (Anestis, et al, 2009).

According to Wilkowski and Robinson's (2010) Integrative Cognitive Model (IMC) of Anger, a child's cognitive processing tendencies are seen as interfering variables between hostile situational input and resultant tendencies toward anger. In this model the role of ruminative aspect/process will be portrayed, along with two other processes in relation to anger and reactive aggression.

1. The first process, which is important to understanding anger, entails *interpretation of situational input*. It is suggested that some people are automatically biased toward hostile interpretations of situational input/stimulus, which in turn is consistent with attribution and appraisal based models of emotion elicitation of anger (Wilkowski & Robinson, 2012).
2. The second process is the *ruminative aspect of attention*, which is suggested to reinforce interpretation-related bias, thus, augmenting anger and prolonging the possibility of reactive aggression. It is worth noting that selective attention processes take part in rumination, favoring a type of emotional input. It was evident that manipulations of rumination enhance ongoing processing of a specific affective experience. Manipulations of rumination are associated with encouraging distraction, whereby they assist in attentional distraction from affective states or stimuli. Accordingly the IMC proposes that people with high trait anger would portray selective attention processes supporting hostile information that in turn would enhance hostile rumination (Wilkowski & Robinson, 2012).
3. The third cognitive process involves the *effortful control processes* that are effective in neutralizing emerging tendencies toward anger and reactive aggression. Effortful control has three specific pathways whereby it could be used in hostile contexts. First, the use of effortful control enables the reappraisal of situational input, hinders ruminative attentional processes, and inhibits inclinations to engage in aggressive acts and any other anger related behaviours (Wilkowski & Robinson, 2012).

In general, the IMC is a model that posits and highlights the role of cognitive processes in anger and anger manifestation such as aggression. In particular, it has considerable support for the idea that hostility-related rumination aggravates tendencies

toward anger and reactive aggression and does so in both state- and trait-anger (Wilkowski & Robinson, 2012). This gives us insight on the cognitive processes that can be considered for assessment to prevent anger manifestations using effortful control.

Influence of personal attributions on anger (emotional responses).

Due to the fact that it is important to take into account individual differences when looking at anger, a study was done to test how attributional processes influence behavioral reactions during an anger episode by using an implicit measure of anger. They examined how the information that another person did not intend to be frustrating, affects anger and in turn impulsive reactions (Krieglmeyer, Wittstadt & Strack, 2009). This study was done because previous studies did not investigate whether the attribution to unintentionality decreases anger and aggressive impulses. Moreover, the study was done to check whether the attribution to unintentionality increases the control of aggressive impulses, and therefore results in a selective decrease of aggressive reactions that are controllable (Krieglmeyer, Wittstadt & Strack, 2009).

In order to test the two assumptions, 72 university male students, enrolled in different majors other than psychology participated. Their mean age was 24.6 years. Only males were included to rule out complex gender differences (Krieglmeyer, Wittstat & Strack, 2009). Two thirds of the participants were frustrated by negative evaluations, paired with aversive sounds from an apparent team partner (Krieglmeyer, Wittstadt & Strack, 2009). The rest of the participants obtained positive evaluations that were paired with pleasant sounds. Then half of the frustrated participants received a message saying that their apparent partner had confused the response scale and had

actually meant to give them an opposite positive evaluation (Krieglmeyer, Wittstadt & Strack, 2009). The fact that the partner apologized was effective in decreasing subsequent aggressive behavior but not in reducing anger, as assessed by an implicit measure (Krieglmeyer, Wittstadt & Strack, 2009).

The results were in line with the belief that attribution to unintentionality leads to control of aggressive behavior (Krieglmeyer, Wittstadt & Strack, 2009). They found out that such attributions influence aggressive behavior mainly through reflective pathways, while anger and impulsive processes remain significantly unaffected (Krieglmeyer, Wittstadt & Strack, 2009). In other words, the anger experience would not increase or decrease in intensity, based on the positive or negative attribution of intent.

Attributional and emotional responses to socially ambiguous cues.

A different correlation study was done to assess the attributional and emotional responses to aversive, but socially ambiguous actions by one or more provocateur (Coccaro, Noblett, & McCloskey, 2009). Multiple scenarios were developed and were followed by questions related to attribution of provocateur's intent and the subject's emotional response to the provocateur's actions (Coccaro, Noblett, & McCloskey, 2009). This resulted into the Social Information Processing-Attribution and Emotional Response Questionnaire (SIP-AEQ), which was administered to 923 community-based adults, with ages ranging between 18 and 45 years (Coccaro, Noblett, & McCloskey, 2009). There was a positive correlation between the SIP-AEQ the childhood trauma questionnaire, which in turn showed a significant link between aggression, hostile attribution and history of childhood trauma (Coccaro, Noblett, & McCloskey, 2009). Factor analysis showed a three-factor structure reflecting hostile attribution,

instrumental attributions and benign attribution to provocation (Coccaro, Noblett, & McCloskey, 2009). Moreover, the hostile attribution items showed a significant relationship with measures of emotion processing and responsiveness to perceived provocation (Coccaro, Noblett, & McCloskey, 2009). This shows that there are underlying emotional processes of angry people, which is important to take into account when assessing anger. By showing the association between hostile attributional biases and emotional responses, it will provide investigators a motive to assess social cognitions in participants (Coccaro, Noblett, & McCloskey, 2009).

Based on the aforementioned results that showed a relationship between underlying cognitive distortions of anger and the anger experience; it is very important to have a children's anger assessment tool that tests these cognitive distortions along with the other aspects of anger, as in emotional, behavioral and physiological aspects. Hence, let us shift to discuss the underlying emotional component of anger in the following section.

Emotional Component of Anger

One of the underlying components of anger is the emotional aspect. Although anger is an emotion by itself, yet, it is considered as the building block of other complex emotional states. Therefore, it is noteworthy to discuss some of these emotions that are related to anger so the readers can get a better understanding of this emotional construct.

According to Solomon, anger feelings can provoke the feeling of *indignation*, when a person perceives an event as being unfair. Usually people that perceive themselves as highly self-righteous, experience the feeling of indignation when provoked (Power & Dalgleish, 2008).

On the other hand, the emotion of *hatred* is assumed to be generalized anger. In other words, hatred is a strong negative emotion, which is broad enough to encompass parts or all aspects of a person or object, on a continuous basis. Anger can be transformed to hatred when the attribution of intent is towards permanent anger provoking aspects of a person or object (Power & Dalgleish, 2008).

Wrath feeling is also assumed to be related to anger. Wrath is the emotion of anger, whereby the desire for revenge (action potential) is extremely intense and continuous over a long time (Power & Dalgleish, 2008).

Jealousy is another emotion that can be associated with anger when there is a fear of losing someone, fear of losing that person's affections, or fear of losing a valued object to an opponent or rival. It is proposed that angry jealousy is one of the several reactions to severe threat of loss and therefore, threat to the self-worth (Power & Dalgleish, 2008).

It is assumed that *envy* can be a function of anger or hatred towards a person viewed as a rival.

However, no direct relationship was found to support the assumption that envy is derived from anger. Yet, envy is an emotion that seems to be a response to other people achieving goal/s that one hopes to obtain. This can be appraised to the idea that others/rivals blocked ones' goal achievement by virtue of their own achievements, which might elicit anger (Power & Dalgleish, 2008).

Neu discusses two kinds of envy, one of which is related to anger. Malicious envy is a state where anger is manifested and one wishes to lower his/her rival to his/her

level. Admiring envy is a state where one wishes to raise oneself to the level of the rival (Power & Dalgleish, 2008).

According to Feindler, Adler, Brooks, & Bhumitra (1993), anger can be associated with the feelings of being sad, mad, nervous, frustrated, afraid, or happy, in response to an anger provoking situation.

Based on the array of feelings that anger can be associated with, one should consider assessing those feelings alongside the multifaceted components of anger to yield a comprehensive assessment of children's anger.

In the following section, the physiological component of anger will be discussed.

Physiological Component of Anger

According to Novaco's model of anger, physiological arousal takes place when anger is instigated. The following section will give an overview about the influence of physiological arousal on enhancing anger's emotional arousal.

Based on different studies, physiological arousal from different sources can influence individual experience of anger when anger has been independently elicited. Different studies have investigated the effects of heat, pain, and cold on anger arousal. They have all maintained that there is a direct physiological route to anger (Power & Dalgleish, 2008).

According to Zillmann, "the transfer of external arousal to increase the experience of anger is strongest when the person is unaware of the origins of that external arousal and misattributes it to the event that has provoked anger" (as cited in Power & Dalgleish, 2008, p. 265). Based on Zillmann's study, participants who

attributed to their arousal to exercise (actual extraneous stimulus) shared decreased or no anger related behaviors. However, participants that were not able to make this attribution portrayed good “transfer of arousal” and eventually an inflated experience of anger (Power & Dalgleish, 2008).

Another study done by Geen and Stonner maintained that the nature of the stimulus could influence the development of an anger experience, even if people do not make the association between the extraneous stimulus and the arousal (as cited in Power & Dalgleish, 2008, p. 266). In this study, physiological arousal was induced, by showing the participants a boxing match video clip and they were told that fighting was increased by either the desire for revenge, professionalism or altruism. Participants who were informed about the nature of the extraneous stimulus portrayed increased anger related behaviors. In contrast, the participants who were not informed about the nature of the extraneous stimulus portrayed a reduced or no anger experience (Power & Dalgleish, 2008).

Based on the findings above, one can see that physiological arousal plays a role in increasing or decreasing an anger episode. Therefore, it is essential to use an anger assessment tool that takes into consideration the physiological aspect of anger along with the other aspects to have a comprehensive assessment of children’s anger experience.

Behavioral Component of Anger

One of the widely researched behavioural manifestations of anger is aggression (verbal and physical aggression). Research shows that there is a relationship between anger and aggression. Based on the social information processing models of aggression,

causal attributions exist in the following pattern of response to external events, *Hostile Attribution* → *Aggressive behaviour* (Hobs & Yan, 2008). Emotions are assumed to underlie these cognitions in a reciprocal and dynamic relationship, whereby: *Ambiguous stimulus* → *attribution of hostile intent (cognition)* → *anger (emotional response)* → *hostile/aggressive behaviour* (Hobs & Yan, 2008).

In other words, one can see that a person who is involved in aggressive behaviour will depict an ambiguous stimulus with underlying *cognitive hostile misattributions* that in turn trigger the *anger emotional response*.

According to Novaco, behavioural responses depend on the person's own perceptions and interpretations of the eliciting event, as well as one's past experiences and the predicted outcome (Power & Dalgleish, 2008). Novaco's model of anger proposed four main behavioural reactions and these are:

- Physical antagonism,
- Verbal antagonism,
- Passive aggression, and/or
- Avoidance withdrawal.

According to Anestis (2009), Buss and Perry defined aggressiveness as the tendency to engage in physically or verbally aggressive behaviour, to hold hostile cognitions and to experience and express anger.

According to Winstok (2009), Reactive Aggression is defined to be a defensive response to provocation or trouble, a means to defend oneself and hit back against abuse. This type of aggression is shown to be an *impulsive, defensive reaction paired*

with anger and loss of control i.e. Impulsive, affective and automatic (Winstok, 2009; & Richetin & Richardson, 2008).

Based on the integrative cognitive model, there are three cognitive processes that collaboratively contribute to a person's *level of anger* and in turn *reactive aggression*. The three cognitive processes involve *interpretation of a situation input*, *ruminative aspect of attention that reinforce interpretation-related biases*, that in turn amplify anger and prolong the possibility of reactive aggression. The third cognitive process involves the *effortful control processes* that are effective in neutralizing emerging tendencies toward anger and reactive aggression (Wilkowski & Robinson's, 2010).

Thus, one can see that there is a huge cognitive aspect underlying anger along with the multifaceted components of anger (emotional and physiological) that in turn act, as mediators of behavioural responses "aggression". Therefore, it is very important that we refine our assessment and use an appropriate children's anger assessment tool to test for the underlying complex components of anger in order to understand what exactly we need to target for anger management.

The following section will discuss the risk factors of anger if it was not identified.

Risk Factors of Unidentified Anger

After identifying the underlying complexity of anger, it is now important to tap into and highlight the risk factors that anger could lead to if not identified, prevented from and/or treated.

Outcomes of Untreated Anger

As mentioned earlier, strong correlations have been made between high levels of anger in children and problematic behaviour at school, poor academic performance, peer rejection, and psychosomatic complaints (Smith, & Furlong, 1998; Sukhodolsky, Solomon, & Perine, 2000). Moreover, anger takes part as a main element associated with many externalizing and internalizing childhood disorders, including Oppositional Defiant Disorder, Conduct Disorder, Attention Deficit/Hyperactive Disorder, and depressive and anxiety based disorders (Smith, & Furlong, 1998; Sukhodolsky, Solomon, & Perine, 2000). Children with high trait anger and ineffective patterns of anger expression are prone to develop disease and negative social behaviours (Rice, Kang, Weaver, & Howell, 2008). The existence of such psycho-behavioural risk factors is linked to hypertension, cancer, and asthma in adults and, direct health and behavioural consequences in children are elevated blood pressure levels, respiratory illnesses, overweight, and also negative social behaviours such as bullying and aggressiveness (Rice, Kang, Weaver, & Howell, 2008). The study of children's anger is critical, as it has also been identified as a factor in child and adolescent suicide (Feindler, Adler, Brooks, & Bhumitra, 1993; Ghanizadeh, 2008; & Rice, Kang, Weaver, & Howell, 2008). In 1997, suicide was found to be the third leading cause of death among 10 → 19 years old children and adolescents in the USA (Ghanizadeh, 2008).

It has been proven that experience of anger plays a major role in the prediction of later suicidal acts. In a study on adolescents, it was shown that both boys and girls that reported suicidal ideation had considerably higher scores on the Aggression Questionnaire than those that didn't report suicidal ideation. Moreover, youth that have higher scores on hostility scales are more vulnerable to experiencing school

violence/interpersonal violence, which in turn, is found to predict suicide attempt at their age. It is predicted that students with higher levels of anger expression report the wish to die. It is important to note that there are individual differences in anger expression (Ghanizadeh, 2008).

Anger expression may take different forms, externalized and internalized anger expression. A study made to investigate the modes of anger expression in adolescent suicide attempters showed that suicidal adolescents portrayed increased potential of experiencing anger, and considerably high levels in both externalized anger (expressed outwards towards people or environment) and internalized anger (directed inwardly) (Ghanizadeh, 2008).

Unidentified anger problems can also mediate for developing impulsive or aggressive behavioural reactions.

Is Anger a Predictor/Moderator of Aggression?

Ray Di Giuseppe stated that anger is an emotion that leads to impulsive aggression (Feindler, 2006). However, it is important to note that aggression is not directly caused by anger; accordingly, further emphasis on this topic will be discussed to help in refining assessment of the problem.

According to the General Aggression Model (GAM), there is a link between the exposure to a situational variable and the output variable of aggression and this link is mediated by one's cognitions, affect (anger) and arousal (Giumetti & Markey, 2007). GAM assumes that aggressive behavior is predicted by also considering the person within a situation (Giumetti & Markey, 2007). In a recent addition to the GAM, several reasons that anger may have a causal role in aggression are noted. Accordingly, anger

minimizes one's inhibition against aggressive acts, anger primes aggressive thoughts, making a person tend to interpret ambiguous situations as hostile, it energizes behavior by increasing a person's arousal levels, therefore leading to aggression if there is significant provocation a while after the activity, and finally, it makes one more likely to attend to hostile or violent behavior (Giumetti & Markey, 2007). In light of the GAM assumptions, it implies that anger may have a main effect on aggressive behavior and will moderate the effect of violent stimuli (Giumetti & Markey, 2007).

According to the Cognitive-neoassociation model of aggression, a person who is angry might have a more developed cognitive-neoassociative network related to ideas about anger, e.g. hate, rage, mad, fury, etc, than a person who is not angry (Giumetti & Markey, 2007). Therefore, when an angry person is subjected to violent media or a simulated violent or hostile act, his/her network of angry thoughts, feelings, and beliefs will become ready; therefore, he/she would tend to behave in an aggressive manner more than a person who is not angry (Giumetti & Markey, 2007). Respectively, Giumetti and Markey (2007) conducted a study to examine if anger moderates the effect of violent video games on aggression.

In this study, 167 undergraduate students whereby 79 were females and 88 males participated from a general psychology class. There were 3 phases of the study that each participant had to complete. In *phase one*, participants were asked to complete a questionnaire packet made of a demographic questionnaire, the 7-item anger scale of the Aggression Questionnaire which assesses the tendency for emotional arousal and the preparation of aggressive behaviors, and several additional questionnaires that were used to hide the true purpose of the study (Giumetti & Markey, 2007). In *phase two*, participants were randomly placed in one of 3 violent video games or one of the 3 non-

violent video games for a period of 15 minutes. In *phase three*, once the participants finished playing the video game, they were presented with three story stems (Giumetti & Markey, 2007). Each of the story stems offered a brief scenario that involved a negative outcome for the main character. After reading each story stem, the participants were then asked to write down 20 distinctive things that the character might do, think or feel of. This would yield 60 responses that could be examined for aggressiveness (Giumetti & Markey, 2007).

Results showed that participants who played a violent video game wrote down much more aggressive responses to the three ambiguous story stems than the participants who had played with a non-violent game (Giumetti & Markey, 2007). Moreover, results showed that there was no significant main effect of anger on participants' aggressive responses (Giumetti & Markey, 2007). However, results showed that anger moderated the relationship between playing violent video games and aggression in accordance to the third hypothesis (Giumetti & Markey, 2007).

A possible explanation that this study did not find a direct association between anger and aggression because it used an explicit assessment tool of anger, e.g. the Anger Scale from the Aggression Questionnaire, which tends to be unrelated to implicit assessments of aggression (cognitive or emotional), e.g. the story stems used to assess aggression (Giumetti & Markey, 2007). This shows that anger has implicit aspects to it that can only be assessed by assessments that tackle the emotional and cognitive aspects underlying anger.

Therefore, the following section will discuss different anger tools and highlight the importance of using multidimensional anger assessment tools to identify and treat anger, to prevent from unidentified anger's risk factors.

Different Approaches to the Assessment of Anger

In light of the presented outcomes of anger, it is very important for counselors to devise a comprehensive assessment for children that are referred for anger problems, to conceptualize and understand the child's anger issues, prior to any anger management treatment sessions. Several structured self-report assessment tools have been developed to further refine and outline children's anger management problems (Blake & Harmin, 2007; & Feindler & Engel, 2011). These can be used for also evaluating treatment effectiveness whereby they can be used at pre-treatment and post-treatment level. However, counselors should bear in mind to use additional data collection tools, along with the self-report assessments due to the fact that they are likely to display social desirability elements and response bias (Feindler & Engel, 2011). According to Feindler and Engel (2011), some of these additional data collection tools can be direct observation; ratings by parents, teachers and staff; analogue role-play methods and self-monitoring tools. Different self-report, anger assessment tools relevant to children will be presented as follows.

Nelson and Finch have developed the 39-item *Children's Inventory of Anger (ChIA)*, in the year 2000. It is devised to assess the subjective intensity of anger experienced in response to different hypothetical anger-arousing situations. It is developed based on the initial Children's Inventory of Anger (CIA) that was developed in 1978 and the Novaco Anger Inventory (NAI) developed in 1975. It assesses children

and adolescents ages 6 through 16 and requires a third-grade reading level. The alpha coefficient was .95 for the total sample and considered excellent. Test-retest reliability was sufficient for the whole sample and obtained a correlation between .66 and .75. Split-half correlation coefficients for first-second half reliability was .93 and for odd-even reliability was .96. Criterion validity was assessed and found to be adequate. The ChIA's weakness is supported by validity studies that portray evidence that does not support a strong construct of anger as operationally defined. Yet, the ChIA supports a construct of anger relevant to an individual's state of subjective well-being. It has a vague construct of anger and the validity studies did not correlate subjective anger and overt behaviour (Flanagan, & Allen, 2005; Volpe-Johnstone, & Delore, 2000).

A different anger assessment tool, *The Anger Expression Scale for children (AESC)* was developed in 2009 for children and adolescents between the age 7 and 17. It measures both trait anger and multiple components of anger expression and control. Following the constructs identified in the State-Trait Anger Expression Inventory Modeled measure for adults, the instrument entails four subscales that target trait anger, anger expression, anger in (unexpressed anger), and anger control. Results of the CFA indicate that the four-factor structure represents a good fit to the data and is superior to other plausible factor structures. Measures of internal consistency of the AESC subscales show moderate advances over some factors that have been identified in other measures of anger expression in children. As for the external validity, results indicated strong correlations between AESC subscales and other indices of child- and parent-reported child anger expression (Steele, Legerski, Nelson, & Phipps, 2009).

In addition, a 41-item self-report measure, *Adolescent Anger Rating Scale (AARS)* was developed to assess the following three components: *instrumental anger*,

i.e. negative emotion used to achieve a goal that has been planned for, *reactive anger*, i.e. an immediate response to a negative stimulus, and *anger control*, i.e. positive behaviors in response to provoking situation, in adolescents whose age ranges between 11 and 19. As for the reliability coefficients, they were .83 for instrumental anger, .70 for reactive anger and .80 for anger control (Boman, Curtis, Furlong, & Smith, 2006; & Feindler & Engel, 2011).

On the other hand, there are limited assessment tools that have been developed to measure school anger specific to the school context. However, Smith, Adelman, Nelson, and Tylor devised a 24-item School Anger Inventory in 1988 to measure the components of anger when faced with peer annoyances, peer-teacher problems, school frustrations, moral infractions, and teacher antagonism.

Later, a 36-item *Multidimensional School Anger Inventory (M-SAI)* was developed in 1997 to assess the affective (Anger experience), cognitive (Hostility), and behavioral constructs/dimensions of anger (both Positive coping and Destructive Expression) as well as the frequency and duration of anger experience relevant to school context. It was developed for students whose age ranges between 11 and 18, i.e. grades 6 till 12. The M-SAI has subscales for anger experience, hostility, destructive expression, and positive coping. The internal consistency (alpha coefficients) for the subscales ranges from .67 to .84. Moreover, it showed a good test-retest reliability value, .50 to .62 (Boman, Curtis, Furlong, & Smith, 2006; Furlong, Smith, & Bates, 2000; Furlong, Smith, & Bates, 2002).

Accordingly, there have been various assessment tools that were developed to assess anger. However, there is a need for a comprehensive assessment of anger-related

problems in children whose ages range between 7 and 12 years old for prevention of any anger manifestations that might be acquired and developed during the adolescent phase.

A Multidimensional tool for Children: Children's Anger Response Checklist

One comprehensive assessment tool of anger-related problems for children that measures all relevant components within a multidimensional perspective is *Children's Anger Response Checklist (CARC)*. The CARC is a self-report instrument, which assesses children's anger according to Novaco's multi-dimensional model of anger, i.e. the cognitive, affective, behavioral, and physiological components. This is a comprehensive checklist that will examine how children would think, act, and feel in response to 10 hypothetical anger-provoking situations. The developers of CARC categorized possible responses in each domain and arranged them in a checklist manner relevant to each hypothetical problem, rather than using only global Likert-type estimates of anger arousal intensity. However, they did incorporate a Likert-type scale, but it was a modified one with facial pictures to present the child's intensity of anger along with the different possible anger responses (Feindler, Adler, Brooks, & Bhumitra, 1993).

The CARC was developed over two phases. The first step was a structured interview that was conducted with children, whose ages ranged between 8 and 9.2 years old, coming from public elementary schools. The children were asked open-ended questions to investigate their cognitive, behavioral, emotional, and physiological responses to anger-provoking situations and frequently encountered conflicts (Feindler, Adler, Brooks, & Bhumitra, 1993).

In the second phase, professional staff members that had experience with

children who have anger management problems and aggressive behaviors; came up with a wide range of hypothetical situations. These hypothetical situations were also relevant to the responses from the structured interview. They selected ten situations that were relatively representative of the pool of categories, such as unfair accusations, frustration, disappointment, peer and parental provocation (Feindler, Adler, Brooks, & Bhumitra, 1993).

Probable responses were generated for the ten hypothetical situations in a similar manner to the situation generation and based on literature evidence. Response categories were divided into four domains: 1) *Cognitive domain*, assesses what the child would think of during anger experience, 2) *Emotional domain*, assesses how the child would think during an anger experience 3) *Physiological domain*, assesses how the child's body would feel in an anger provoking situation and 4) *Behavioral domain*, assesses what the child would do in response to an anger provoking situation. Based on the children's responses in the structured interview, seventy responses were generated. However, for each hypothetical situation, five responses were randomly chosen to represent one of the four domains. Responses under the behavioral and cognitive domains were further categorized to symbolize numerous sub-domains (Feindler, Adler, Brooks, & Bhumitra, 1993).

The *Cognitive domain*, included responses categorized under the following subdomains: *withdrawal/avoidance*, *aggressive*, *assertive/problem solving*, *perceived injustice or self-blame* (Feindler, Adler, Brooks, & Bhumitra, 1993).

The *Behavioral domain* included responses categorized under the following subdomains: *withdrawal/avoidance*, *aggressive*, *assertive/problem solving*, or *placate/peacemaker* (Feindler, Adler, Brooks, & Bhumitra, 1993).

The CARC was then subjected to pilot testing to check if the hypothetical situations and responses were appropriate.

However, a follow-up study was done by Adler to revise and refine the CARC, using a larger sample size. Three more measures were used in addition to the CIA and CATS. These were *Child Behavior Checklist (CBCL)*, *Child Behavior Checklist-Teacher Report Form (CBCL-TRF)*, and *Behavior Problem Scale*, to check for the CARC’s validity and to refine the tool (Feindler, Adler, Brooks, & Bhumitra, 1993).

The CARC coding subdomains were analyzed. The “Withdraw” and “Placate/Peacemaker” subdomains were collapsed into one subdomain, “Submit”. Therefore the following are the final domains, subdomains and yielded scores of the revised CARC (Feindler, Adler, Brooks, & Bhumitra, 1993).

Table 1

Domains and Subdomains of the CARC

Domains:	Cognitive Domain	Behavioral Domain	Emotional Domain	Physiological Domain
Subdomains:	1- Cognitive Aggress (CAG)	1-Behavioral Aggress(BAG)		
	2- Cognitive Assert (CAS)	2- Behavioral Assert (BAS)		
	3- Cognitive Submit (CSM)	3- Behavioral Submit (BSM)		
	4- Cognitive Self-blame (CSB)			
	5- Cognitive Perceived			

Injustice (CPI)

(Refer to Appendix A for the definitions of the CARC's subdomains)

As for the scores that the CARC yields, they are categorized as follows:

Table 2

Scores Yielded by the CARC

Overall Cognitive Rating	Overall Behavioral Rating	Overall Physiological Rating	Overall Emotional Rating
1- Cognitive Aggress	1- Behavioral		1- Total
2- Cognitive Assert	Aggress		Aggress (Cog.
3- Cognitive Submit	2- Behavioral		Agg. + Beh.
4- Cognitive Self-blame	Assert		Agg.)
	3- Behavioral		2- Total
5- Cognitive perceived injustice	Submit		Assert(Cog.
			Ass. + Beh.
			Ass.)
			3- Total
			Submit (Cog.
			Sub. + Beh.
			Sub.)

Overall Anger Rating: _____

Overall Responsivity Rating: (this is the total number of items checked off for each hypothetical situation)

The version of the revised CARC is going to be used in our study. Accordingly, the following section will discuss the reliability and validity findings of the revised CARC.

Concerning the reliability, the CARC's internal consistency was measured by reporting the Chronbach's alpha coefficient, of the two components. The two components are the ten stories with their response checklists, which had quite a high Chronbach's alpha coefficient (.96) and the ten ratings of overall anger, which also had a high Chronbach's alpha coefficient (.87). The prior results of the two components of the CARC show that the CARC is a highly stable and reliable measure. The mean correlations between the cognitive and behavioral responses for the same subcategories were examined. The two aggressive subcategories, behavioral and cognitive, were highly correlated (.79, $p < .001$), as were the assertive subcategories (.65, $p < .001$). According to the Pearson correlational analyses, the CARC's Overall Anger rating score was not related to several other CARC subscales. This shows that no matter how much the general responsivity is for the CARC's subscales, it is not a factor that is affected by the level of anger rating (Feindler, Adler, Brooks, & Bhumitra, 1993). However, there was a noticeable positive relationship between the CARC's Overall Anger rating score and the Physiological and Aggression scores (Feindler, Adler, Brooks, & Bhumitra, 1993).

As for the construct validity of the CARC, it was evaluated by finding correlations between the CARC subscales and two other self-report measures, Children Inventory of Anger (CIA), and the Children's Action Tendency Scale (CATS), which measures aggressiveness, assertiveness and submissiveness in response to a provocation. There was a strong correlation between the CARC's overall anger rating

score with the CIA's score (.69). This shows that the CARC encompasses the effectiveness of the CIA. The CARC Overall Anger rating score was positively correlated with the CATS Aggressiveness score and negatively correlated with the CATS Submissiveness score. The construct validity of CARC's Total Aggress subscale was encouraging as the CARC Total Aggress score showed a significantly positive relationship with the CATS Aggressiveness score and highly significant negative relationship with the CATS Assertiveness and Submissiveness scores. However, the CARC's Total Assert score and Total Submit score were insignificantly related to the CATS' Assertiveness and Submissiveness scores, respectively (Feindler, Adler, Brooks, & Bhumitra, 1993).

Principle component analysis was conducted to further examine the CARC's construct validity by investigating its factor structure and relationship with the other self-report measures (CIA, & CATS) (Feindler, Adler, Brooks, & Bhumitra, 1993). Unfortunately, the factor structures of the CARC did not fit to the expected four-dimensional theoretical structures, behavioral, emotional, cognitive and physiological. This may be attributed to the fact that the categories of the CARC can facilitate to raise children's awareness of different anger arousal manifestations (Feindler, Adler, Brooks, & Bhumitra, 1993).

Significant results were found when the principle component analyses were conducted on the CARC along with the CIA and the CATS. The CARC Overall Anger rating and the CARC Aggress subscales consistently loaded on the same factor together with the CIA and the CATS subscales. It was evident that the CARC taps into more than just aggressive response tendencies and more than the CIA and the CATS subscales can address. However, it was not clear if the CARC can differentiate between

assertive and submissive response tendencies (Feindler, Adler, Brooks, & Bhumitra, 1993). Therefore, further research needs to be conducted to check if the CARC is capable of discrimination between the assertive and submissive response tendencies (Feindler, Adler, Brooks, & Bhumitra, 1993).

Knowing that the CARC was never adapted and validated in the Middle East, hence, in the following study the CARC is further validated and adapted to the Lebanese population (Feindler, Adler, Brooks, & Bhumitra, 1993).

Having decided on the use of the CARC as anger assessment tool, the following section will highlight some of the effective treatments or techniques to control anger based on the four components of anger (cognitive, behavioral, emotional and physiological).

Different Approaches to Management of Anger

Findings based on the Children's Anger Response Checklist; put weight on cognitive theoretical understanding of anger and provide a potential to evaluate effective treatments of anger at an early stage. Some of the literature discusses interventions that target anger from a social cognitive perspective, and this would be interesting enough to take into consideration. Moreover, in the following section, different types of cognitive-behavioral techniques will be discussed.

Extensive research and empirical studies took place for validating cognitive-behavioral techniques as a means of treating angry youth. According to recent research, it has been sustained that cognitive behavior therapy, CBT, is a successful treatment for youth, as it has an effect size of (0.67) (Blake & Harmin, 2007).

The CBT techniques that were used, affective education i.e. identification of emotions and relaxation training; behavior modification, such as social skills training and anger control training; cognitive skills training as in cognitive restructuring and attributional style modification or a combination of the some of the prior techniques (Blake & Harmin, 2007).

One type of anger management therapy is Cognitive-behavioral anger management training (AMT), which goes hand in hand with the CARC as it tackles the multidimensionality of anger. AMT is founded upon the hypothesis that aggressive behavior is evoked by an aversive trigger/stimulus, followed by both physiological arousal and distorted cognitive responses, resulting in the emotional experience of anger. Therefore, three components of anger experience is the focus of the AMT standard, which is developed to aid students in acquiring self-control skills in each of the specified areas (Feindler & Engel, 2011).

First it is proposed that the counselors should train students to manage their *physiological component*, whereby they would be guided to identify the anger experience and in turn the intensity of the emotion, and identify the physiological early warning signs, as in feeling flushed and/or quick heart racing/pounding. The counselor can use a self-monitoring tool for the child to identify and keep track of antecedents, and consequences of anger, this tool is called a Hassle Log. Accordingly, the child would be trained in deep breathing, imagery, and/or relaxation, provocation management skills, to alleviate the built up physical tension and in turn, give the child the chance to think rationally about the interpersonal event (Feindler & Engel, 2011).

Next, the counselor would target the *cognitive component*, whereby cognitive deficiencies and distortions would be addressed in the students who display aggressive reactions/behaviors and impulsive perceptions of a provocation (Feindler & Engel, 2011).

According to research, aggressive youngsters lack problem-solving skills, and CBT used with angry children reduces aggression, and improves their performance on social problem-solving tasks as measured by observer ratings and self-report measures (Feindler & Engel, 2011; & Sukhodolsky, Solomon, & Perine, 2000). Angry and aggressive students create limited solutions to interpersonal issues and appear to be incapable of producing future consequences for their aversive and violent behaviors (Feindler & Engel, 2011). Accordingly, cognitive restructuring strategies and attribution retraining techniques are essential for counselors to train students in identifying their distorted thinking styles and to substitute a succession of self-instructions that would help them in resolving problems successfully. According to Feindler and Engel (2011), “Students are encouraged to engage in *self-coaching of attributions* that protect their self-esteem while allowing them to diminish conflict and create mental distance from the trigger. This type of cognitive work is difficult for aggressive and impulsive adolescents, but it is the *most critical element of any anger management intervention*” (p. 246). Hence, changing the implicit processes will help students in regulating their anger experience, reconsider potential negative responses to provocation and choose an appropriate pro-social behavioral response.

Finally, the counselor should target the *behavioral reaction* to anger. Usually an angry child responds to interpersonal conflicts and perceived provocation by withdrawal patterns and verbal and nonverbal aggression. Therefore, appropriate social

skills training is recommended in order to teach the child problem-solving, assertiveness skills and proper communication skills to resolve a conflict. However, behavioral skills training should always be preceded by arousal management and cognitive restructuring (Feindler & Engel, 2011).

Another anger management protocol that is noteworthy is Teen Anger Management Education (TAME). It follows the same prior steps mentioned as in using self-regulatory coping skills approach with the focus on cognitive component of anger (Feindler & Engel, 2011). Moreover, according to Feindler and Engel (2011), “elements of dialectical behavior therapy (DBT) emotional regulation strategies and interpersonal effectiveness skills are included to enhance adolescents’ ability to build awareness of emotional arousal and increase pro-social behavior options in the face of interpersonal conflict” (p. 247).

Conclusion

Now that we have defined Anger along with its multifaceted components (cognitive, behavioral, emotional and physiological), and discussed some of its prominent theories, namely Novaco’s theory of anger, it is important to consider the aforementioned risk factors of unidentified anger. These risk factors range from problematic school behavior to poor academic performance and can be a risk factor in committing suicide. The above mentioned findings in the literature review are very important to take into account for implications to develop assessment scales in schools that measure the multidimensional components of anger in response to provocations. Accordingly, it was proposed to adapt and validate the Children’s Anger Response Checklist to the Lebanese population in grades 4, 5, & 6. According to Anestis (2009),

it is important to use an assessment tool that would take into account mainly the cognitive aspect of anger, along with other components in order to intervene at an early stage before engaging in physical or verbal conflict. Consequently, interventions can be planned based on the specific problematic subdomains of the anger aspects.

CHAPTER III

METHODOLOGY

This chapter will give a detailed overview of the methodology and its corresponding phases. First, a synopsis of the research design will be discussed. Second, a brief summary will be given to cover the instruments that were used in this study. Third, the adaptation phase of the CARC instrument and the other anger scale that will be used for construct validity at a later stage. Then, the sample, and sampling procedures will be discussed in details. Finally, the researcher will describe the data analysis procedure, which will entail investigating the validity and reliability of the instrument.

Research Design

This study is a validation study that involved conducting correlational and quantitative analyses. The study was done to adapt and validate the Children's Anger Response Checklist to the Lebanese population to enable its use for assessing the underlying multidimensional components of anger (cognitive, emotional, behavioural and physiological) in children from grades 4 through 6.

Before we go on describing the different stages of this study, it is important to briefly define what test validity and reliability is. Based on the Standards for Educational and Psychological Testing, "a good test is one that yields reliable test scores from which we can make interpretations that have strong validity" (Biehler & Snowman, 2004, p. 136).

Test validity is defined as, “the degree to which the interpretations of a test scores are supported by evidence and theory” (Biehler & Snowman, 2004, p. 136). For the purpose of this study, it is important to define *convergent and divergent validity*, as means of *construct validity*.

Convergent validity shows that participants' scores on a tool are related to their scores on a different measure of the same construct. To establish convergent validity there should be a strong relationship between scales of the same construct (Biehler & Snowman, 2004).

Divergent validity helps in establishing construct validity by showing that the construct you are testing for is different from other constructs found in the study. To provide divergent validity, little or no relationship should be found between two scales of two different constructs (Biehler & Snowman, 2004).

As for the *reliability of a test*, it would be considered reliable based on the extent to which it would be free of measurement error. Measurement error is described as the difference between the scores that examinees actually get on a test and the true scores, i.e. perfect measure of performance (Biehler & Snowman, 2004).

For the purpose of this study we investigated:

the reliability of the adapted CARC in terms of its

- a) *test-retest reliability* i.e. assessing the stability of the adapted CARC over time, and
- b) *internal consistency* of the items and reporting the Chronbach alpha coefficients.

the construct validity of the adapted CARC in terms of

- a) *concurrent/convergent validity* of the adapted CARC's subscale *with the related M-SAI* subscales,
- b) *divergent validity* between the adapted CARC subscales and the M-SAI subscales that measure different structures of anger, and
- c) *factorial structure* of the adapted CARC by using Exploratory Factor Analysis. The EFA will determine if the factors from the CARC would be replicated on the Lebanese sample and will examine if the factor structure of the adapted CARC will fit to the four-dimensional theoretical structure, i.e. cognitive, behavioral, emotional, and physiological domain.

Instruments

Children's Anger Response Checklist (CARC), a self-report instrument, which assesses children according to Novaco's multi-dimensional model of anger, i.e. the cognitive, affective, behavioral, and physiological components. This is a comprehensive checklist that examines how children and teens think, act, and feel in response to 10 hypothetical anger-provoking situations. The CARC has subscales for behavioral/cognitive aggression, behavioral/cognitive assertion, behavioral/ cognitive submission, perceived injustice, self-blame, emotional responsivity, and physiological responses. The CARC is a useful tool for identifying specific deficits in the anger response (Blake, & Hamrin, 2007; Feindler, Adler, Brooks, & Bhumitra, 1993). CARC's reliability and validity was tested on a sample of 60 children whose ages ranged between 7 and 12. The CARC's Chronbach's alpha coefficient is quite high for the ten stories (.96) and for the ten anger ratings (.87). The mean correlations between the cognitive and behavioral responses for the same subcategories were examined. The two aggressive subcategories, behavioral

and cognitive, were highly correlated ($r = .79, p < .001$), as were the assertive subcategories ($r = .65, p < .001$) (Feindler, Adler, Brooks, & Bhumitra, 1993). Each of the situations/stories is accompanied with the expected responses in the cognitive, behavioral, emotional and physiological domains. The responses to anger provoking situations are organized according to the following domains:

Table 3

Domains and Subdomains of the CARC

Domains:	Cognitive Domain	Behavioral Domain	Emotional Domain	Physiological Domain
Subdomains:	1- Cognitive Aggress	1-Behavioral		
	2- Cognitive Assert	Aggress		
	3- Cognitive Submit	2- Behavioral		
	4-Cognitive Self-blame	Assert		
	5-Cognitive perceived injustice	3- Behavioral		
		Submit		

(Refer to Appendix I for definitions of the CARC's sub-domains)The original CARC is attached in Appendix II.

The following tool was used for supporting construct validity of the CARC:

Multi-dimensional School Anger Inventory (M-SAI), assesses the student's affective, cognitive and behavioral dimensions of anger relevant to school context. It is a 36-item scale, developed for students whose age ranges between 11 and 18. The M-SAI has subscales for anger experience (affective dimension), hostility (cognitive dimension), destructive expression, and positive coping (behavioral dimensions) as well as the

frequency and duration of anger experience relevant to school context. The internal consistency (alpha coefficients) for the subscales ranges from .67 to .84. Moreover, it showed a good test-retest reliability value, .50 to .62 (Boman, Curtis, Furlong, & Smith, 2006; Furlong, Smith, & Bates, 2000; Furlong, Smith, & Bates, 2002). Refer to Appendix C for a sample of M-SAI.

Adaptation

First, the original version of the Children's Anger Response Checklist was ordered. Adaptation of the CARC took place based on the *International Test Commission* (ITC) guidelines for adapting tests. The reason we adapted the CARC is that there is an ethical responsibility to have a children's anger assessment tool that takes into consideration the cultural and linguistic differences among the Lebanese population. Based on the ITC guidelines (2010), the adaptation process aimed to develop the CARC with comparable psychometric qualities as the original one. Moreover, the growing recognition of multiculturalism has raised awareness for the need to provide instruments intended for the use within a single national context, and in our case it was making the CARC culturally suitable for the Lebanese population (ITC, 2010).

Second, the CARC was given to a group of three psychologists to review and check for its age appropriacy, culture-suitability, and that it meets the English proficiency level of students. The first psychologist is an AUB professor and director of the Office of Research & Assessment, who is a holder of a Doctorate in Educational Psychology in Tests and Measurements. The second is a Psychology professor who teaches Educational Psychology and Special Education at the American University of

Beirut. The third is an Educational Psychologist and school/educational consultant who has been practicing psycho-educational assessment and therapy in her private clinic for almost 10 years. Then, as a consensus, the group of psychologists evaluated how accurately each item/sub-domain measured the intended domain and suggested modifications. The following are the items that were subjected to changes:

Table 4

Adapted Items of the CARC

Number of Story	Situation or Item that needed to be changed	Adapted Situation or Item
Story 1	<p>Situation: You got a brand new present for your birthday. It's your favorite present. One of the other kids on the block takes it and breaks it while playing with it.</p> <p>2nd item in Behavioral Domain: "Bottle it up?"</p>	<p>You got a brand new present for your birthday. It's your favorite present. One of the other kids on the street takes it and breaks it while playing with it.</p> <p>2nd item in Behavioral Domain: "Keep it to yourself?"</p>
Story 2	<p>Situation: Your parent is very upset and angry because your teacher called. You have been blamed of copying somebody's homework.</p> <p>1st item in the Emotional Domain: "Frustrated"</p> <p>4th item in Behavioral Domain: "Talk it out with your parent."</p>	<p>Situation: Your parent is very upset and angry because your teacher called. You have been accused of copying somebody's homework.</p> <p>1st item in the Emotional Domain: "discouraged"</p> <p>4th item in Behavioral Domain: "Talk to your parents about it."</p>
Story 3	<p>1st item in Physiological Domain: Feel your heart pounding?</p>	<p>1st item in Physiological Domain: Feel your heart pounding/beating?</p>
Story 4	<p>4th item in Behavioral Domain: "Talk it over with someone else?"</p>	<p>4th item in Behavioral Domain: "Talk about it with someone else?"</p>

Story 5	3 rd item in Cognitive Domain: “Think how to get back at parent.”	3 rd item in Cognitive Domain: “Think about taking revenge from parent.”
Story 6	3 rd item in Behavioral Domain: “Try to talk it out?” 5 th item in Physiological Domain: “Feel your heart pounding?”	3 rd item in Behavioral Domain: “Try to talk about it with someone?” 5 th item in Physiological Domain: “Feel your heart pounding/ beating ?”
Story 7	1st item in Physiological Domain: “Feel sick to your stomach?” 3rd item in Physiological Domain: “Feel your heart pounding?”	1st item in Physiological Domain: “Feel so sick that your stomach aches?” 3rd item in Physiological Domain: “Feel your heart pounding/ beating ?”
Story 8	5 th item in the Emotional Domain: “Feel Disgusted?”	5 th item in the Emotional Domain: “Feel Disgusted/ grossed out ?”
Story 9	No changes needed	—
Story 10	3 rd item in the Emotional Domain: “Feels frustrated?”	3 rd item in the Emotional Domain: “Feels discouraged?”

Refer to Appendix IV for the Adapted CARC

In addition, the *Multi-Dimensional School Anger Inventory (M-SAI)* was used, in order to check for CARC’s construct validity at a later stage. It was ordered and adapted according to the guidelines of the international test commission, so it meets the age level, English standard and Lebanese context for students. The *M-SAI* was given to same three professionals from the field to make sure it is valid for the Lebanese population in grades 4, 5, and 6.

The modified version of *Multi-Dimensional School Anger Inventory (M-SAI)* was abridged and included only 3 of its subscales (Hostility Outlook and School Anger Expression i.e. positive coping and destructive expression). The psychologists provided comments for modifying the M-SAI as follows:

Table 5

Adapted items of the M-SAI

Subscales	Item that needed to be changed	Adapted Item
Anger Experience Subscale	Removed (13 items)	(Removed the whole scale)
Hostility Subscale	—	—
School Anger Expression (Destructive Expression)	7. When I'm angry, I'll take it out on whoever is around. 11. If I get mad (angry), I'll throw a tantrum (scream or go on a rampage).	7. When I'm angry, I'll hurt whoever is around. 11. If I get mad (angry), I'll shout, scream and cry so loud .
School Anger Expression (Positive Coping)	—	—

Refer to Appendix V for Adapted M-DSAI

The next step involved pilot testing the adapted CARC instrument to ensure for its adequacy before going on with validation process. In the following section, details of the pilot-testing phase will be discussed.

Sampling procedure and Sample

In this study, the adapted version of the CARC and the abridged M-SAI were administered to a sample of 417 students from seven private schools that teach using

English language as a first foreign language of instruction. A list of Lebanese private schools that are located in Greater Beirut area was acquired from the Center of Educational Research and Development (CERD). Stratified random sampling took place in this study. Seven private schools were randomly selected from almost every area in greater Beirut that teach the Lebanese curriculum and have English as the foreign language. The students that participated in the study are from grades 4, 5 and 6. From every grade level, the researcher randomly selected one section (strata) to participate in the study. Therefore, a total of 21 classes that included 417 students were the target of this study. Thirteen score reports had to be discarded for different reasons such as haphazard answering, and leaving a page or more unanswered from the tool/s. Therefore, the final sample of participants in this study is 404 students. Table 6 below shows the breakdown of the final sample by age and grade.

Table 6

Grade and Age of Study Subjects

Grade			Age		
Grade	<i>n</i>	<i>M(SD)</i>	Age	<i>n</i>	<i>M(SD)</i>
4	137 (34%)		8	5 (1%)	
5	132 (33%)		9	90 (22%)	
6	135 (33%)		10	113 (28%)	
			11	150 (37%)	
			12	43 (11%)	
			13	3 (0.7%)	
<i>N</i>	404 (100%)	5 (0.82)	<i>N</i>	404 (100%)	10.4 (1)

Administration or implementation

As an initial procedure prior to the implementation of the study, the researcher prepared parental and principal's consent forms, and oral child assent forms that were based on the Institutional Research Board (IRB) standards (Refer to Appendix V for a copy of the forms). Data collection took place in three phases. After random selecting schools from the different areas in greater Beirut, the researcher contacted a sum of 15 schools over the phone until 7 schools accepted to participate. Based on the requests of the schools they all chose to remain anonymous to the readers. Refer to appendix VII for the breakdown of students in the 7 schools.

During *phase I*, two visits were planned to each of the seven schools that have been randomly selected.

- The first visit's purpose was to meet with the school principals or elementary heads and present them with an overview of the focus, duration, and procedure of this study. Principals were also told that their school might be used for both pilot testing and the study. They were asked to sign the principal's consent form, once they agreed to participate.
- The second visit was to explain to the students what the study's purpose was and to distribute the parent's consent forms. The students were asked to get the consent forms signed by their parents. For some of the schools, a second visit wasn't planned as the administration directly allowed the researcher to distribute the consent forms during the first visit.

Phase II tackled *pilot testing* the CARC and M-SAI. One of the seven target schools was randomly selected for pilot testing (School D). One section from each grade level was targeted by random selection; however, separate from the sections selected for the study. Hence, the Adapted CARC and Abridged M-SAI were administered to 67 students from grades 4, 5, and 6. During this phase, one visit was planned to the school that was targeted for the pilot study.

- First the researcher collected the parental consent forms that were distributed during phase I. Then, the researcher took the children’s oral assent from the students whose parents consented that their children could be part of the study. Finally, the researcher administered the adapted tests (CARC & MSAI) to each of the 3 sections separately that are from grade levels, 4, 5, and 6. Refer to table 7 for the breakdown of age and grade of pilot subjects.

Table 7

Grade and Age of Pilot Subjects

Grade			Age		
Grade	<i>n</i>	<i>M(SD)</i>	Age	<i>n</i>	<i>M(SD)</i>
4	21 (31%)		9	18 (27%)	
5	23 (34%)		10	18 (27%)	
6	23 (34%)		11	19 (28%)	
			12	12 (18%)	
<i>N</i>	67 (100%)	5 (0.82)	<i>N</i>	67 (100%)	10.4 (1.1)

- The researcher showed the students the first story card, and read out loud the hypothetical problem situation and all its possible responses to familiarize them with the format. Students were told that there are ten stories that they needed to read and think about how they felt and what they would do in such situations (Feindler, Adler, Brooks, & Bhumitra, 1993). Then they were asked to read and check off as many or as few responses that they felt related to the way they may respond to the situation. Students were told that there was no right or wrong answer and that any response was accepted as long as it reflected how they would honestly react to the situations (Feindler, Adler, Brooks, & Bhumitra, 1993).
- Then students were shown the Overall Anger Response Rating Key card to familiarize them with the 5 levels of anger relative to each verbal response and facial drawing. Students were asked to imagine how angry they would be in the situation and check off the most suitable anger intensity (Feindler, Adler, Brooks, & Bhumitra, 1993). The Adapted CARC should normally take approximately 15 to 30 minutes. It was evident that students from the 5th and 6th grades were able to finish the test between 15 and 25 minutes. However, the 4th graders needed more time to complete the test, approximately 10 more minutes than the 5th and 6th graders. Meanwhile, the researcher checked if the students faced any difficulty doing the test (if the students asked many questions related to vocabulary words and instructions). It was evident that the students' questions were mostly related to clarifying and differentiating feelings such as "frustrated, discouraged, and embarrassed." Moreover, 4th graders needed more examples done with them in order to complete the rest of A-CARC alone and accurately (explained the first 3 stories to them). However, the 5th and 6th graders were able to

complete the A-CARC alone without difficulty after the first story was explained to them.

- Then the M-SAI was distributed to the whole class, and the researcher instructed the students to rate all the items found in the abridged M-SAI. The researcher told students that there are three subscales of the M-SAI. In the Hostility Subscale, students were asked to rate on a scale of 1 (strongly disagree) to 4 (strongly agree) the negative or hostile beliefs they might or might not have towards their school. In the Anger Expression Subscales (Destructive Expression and Positive Coping), the students were asked to rate how often they would engage in destructive expression behaviors or positive coping behaviors on a scale of 1 (Never) to 4 (Always). It was evident that most of the students were able to complete this test within a maximum of 10 minutes, although the assigned time was 15 to 20 minutes. Moreover, it was evident that all the participants from all grade levels did not find difficulty in doing the test.
- Coefficient alpha was used to measure internal consistency of A-CARC and this is shown in table 8. Internal reliability coefficient alpha was calculated for the whole scale, its related the subscales (Cognitive, Behavioral, Emotional, and Physiological), overall responsiveness of the 10 stories and Anger Rating of 10 stories.

Table 8

Internal Consistency for Adapted CARC (Pilot Study)

Scales	Alpha	N
Whole Scale	.91	210
Cognitive Domain	.60	50
Behavioral Domain	.55	50
Emotional Domain	.77	50
Physiological Domain	.83	50
Overall Responsivity of 10 stories	.91	200
Anger Rating of 10 stories	.85	10

- The results of the pilot-testing phase revealed that
 - 1) Fourth graders needed more time to complete the test, approximately 10 more minutes (i.e. 40 minutes) than the 5th and 6th graders (15 → 30minutes). Moreover, the 4th graders needed more examples to be done with them in order to complete the A-CARC independently and accurately (explained first 3 stories to them). However, the 5th and 6th graders were able to complete the A-CARC alone without difficulty after the first story was explained to them.

2) The students' questions were mostly related to clarifying and differentiating feelings such as "angry and frustrated" and "discouraged, and embarrassed." Therefore, it was important to clarify and differentiate these feelings before administering the test. This could be attributed to the lack of emotional awareness sessions (character education program) given in some of the schools visited.

3) Most of the students enjoyed completing the A-CARC & the abridged M-SAI. Some felt like it was a vent out activity for them and that most of the situations related to them, for example a couple of students commented by saying, "Story of our lives." Some students asked if the researcher could do more activities of the same sort again with them.

4) The A-CARC's whole scale, and most of the subscales are highly reliable, except for the cognitive and behavioral subscales that are of medium internal reliability.

Phase III will be the actual *validation phase*. During this phase, two visits were planned to each of the 7 schools, 21 classes from grades 4, 5, and 6 that were randomly selected for the study. Therefore, a sum of 14 visits to all the schools was planned.

- During the first visit to each of the seven schools, the researcher collected the parental consent forms. Then, the researcher took the children's oral assent from the students whose parents consented that their children could be part of the study. Finally, the researcher distributed to the students a packet of questionnaires including, the Adapted CARC items, and the abridged M-SAI. Administration of both the adapted CARC and the abridged M-SAI was procedurally the same as the pilot study phase, except that the researcher explained the difference between anger, frustration, sad, and

discouraged before answering the questions. It took the students 50 to 60 minutes, to complete both instruments. However, the researcher made sure to give the fourth graders detailed explanation of the instructions, more examples and extra 10 minutes (60 minutes). Once the students completed filling both instruments, instruments were collected and put in separate files relative to each school and grade level.

- After 3 weeks from the administration of the Adapted CARC, a second visit to the 7 schools took place. Re-administration of the Adapted CARC was done with a sample of 31 students for test-retest reliability. Random selection was done to target 4 or 5 students in grades 4, 5, and 6 who had already participated in the study from each of the 7-targeted school. Re-administration took 20-30 minutes for each session. Table 9 presents the breakdown of the retest sample.

Table 9

Grade and Age of Retest Sample

Grade			Age		
Grade	<i>n</i>	<i>M(SD)</i>	Age	<i>n</i>	<i>M(SD)</i>
4	10 (32%)		9	3 (10%)	
5	12 (39%)		10	10 (32%)	
6	9 (29%)		11	14 (45%)	
			12	4 (13%)	
<i>N</i>	31 (100%)	5 (0.8)	<i>N</i>	31 (100%)	10.6 (0.84)

Data Analysis Procedure and Assumptions

Investigating the reliability and validity of the CARC entailed the following data analyses procedures. With respect to reliability,

- Chronbach alpha was reported for the Adapted CARC and an index of scale internal consistency and coherence was provided. Internal consistencies were reported for the whole scale (210 items), the four components (behavioral, cognitive, emotional and behavioral), the 10 stories (Overall responsiveness of the 10 stories), and the 10 ratings of overall anger.
- To further examine the reliability of the Adapted CARC, the stability of the CARC over time was investigated by correlating student responses over a three-week interval (Boman, Curtis, Furlong, & Smith, 2006).

To examine the *Construct Validity of the Adapted CARC*, the following analyses were conducted:

- *convergent/concurrent validity*. Convergent validity shows that “individual scores on a test are related to their scores on another test or measure of the same variable” (Biehler & Snowman, 2004, p. 137). Convergent validity was examined by conducting bivariate correlations between the adapted CARC subscale scores and the related abridged M-SAI subscales scores. Convergent validity expected that
 - there will be a positive correlation between the *Cognitive subdomains*, (Cognitive Aggression, and Cognitive Perceived Injustice), measured by the *Adapted CARC*, with *hostile subscale*, *i.e. cognitive domain* on the abridged M-SAI.
 - there will be a positive correlation between the *Behavioral subdomains*, (Behavioral Aggression, and Behavioral Submission), measured by the Adapted CARC, with *destructive expressions* of anger on the abridged M-SAI.

- there will be a positive correlation between the A-CARC subdomains, *cognitive and behavioral assert subdomains*, with *positive coping* on the abridged M-SAI.

- *Divergent validity*. Divergent validity shows whether measures that are unrelated are in reality, unrelated. Divergent validity was also reported by conducting bivariate correlations between the adapted CARC and the abridged M-SAI scores of the unrelated subscales. Divergent validity expected that

- there will be a negative correlation between the adapted CARC's cognitive and behavioral assert subscales, with the abridged M-SAI's hostility and destructive expression subscales respectively.

- there will be a negative correlation between the adapted CARC's cognitive aggress, cognitive perceived injustice, cognitive self-blame and behavioral aggress subscales, with the abridged M-SAI's positive coping subscale.

- To further examine the construct validity of the CARC, *exploratory factor analysis* was used, as it is helpful in tackling construct validity questions (as cited in Boman, Curtis, Furlong, & Smith, 2006, p. 236). According to Hammond, *exploratory factor analysis (EFA)* is usually utilized when expectations for a number of underlying constructs are not theoretically determined, however, factors can still be determined from a priori expectations (Boman, Curtis, Furlong, & Smith, 2006). Therefore, an EFA was conducted on the adapted items of the CARC, to determine if the factors from the CARC would be replicated on the Lebanese sample. Moreover, EFA was then done with varimax rotation to further give us more defined and salient factors.

CHAPTER IV

RESULTS

The following chapter tackles the results of this study. We are going to discuss the results conducted on the final sample ($N=404$). As discussed in the previous chapter, 13 score reports had to be discarded for different reasons such as haphazard answering, and leaving a page or more unanswered from the tool/s. This chapter is going to present the investigated reliability of the A-CARC (internal consistency and test-retest reliability). Moreover, the convergent, and divergent validity, and the explored Exploratory Factor Analysis of the A-CARC will be presented.

Reliability

Reliability of a test is based on the extent to which it would be free of measurement error. Measurement error is described as the difference between the scores that examinees actually get on a test and the true scores, i.e. perfect measure of performance (Biehler & Snowman, 2004). In order to validate the A-CARC, two types of reliability checks were used; internal consistency reliability and test-retest correlations.

Internal Reliability

Internal reliability also known as internal consistency refers to the degree to which all items on a particular scale consistently measure the same construct. Table 10 presents the internal reliability coefficients that are measured by Chronbach's alpha for the A-CARC's subscales. The subscales are the whole scale, as in the reliability of all the A-CARC's items ($n=210$), Behavioural subscale ($n=50$), Cognitive subscale ($n=50$),

Emotional subscale ($n=50$), Physiological subscale ($n=50$), Overall responsivity of the 10 stories ($n=200$), and the Overall Anger Rating of the 10 stories ($n=10$).

Table 10

Internal Reliability Coefficient for the A-CARC (Whole Sample $N=404$)

Scales	Alpha	n
Whole Scale	.91	210
Behavioral Domain	.69	50
Cognitive Domain	.65	50
Emotional Domain	.78	50
Physiological Domain	.76	50
Overall Responsivity of 10 stories	.91	200
Overall Anger Rating of 10 stories	.76	10

Test-Retest Reliability

Test-Retest reliability was done to test the stability of the A-CARC over time. The stability of the A-CARC was investigated over a 3 week test-retest interval on a sample of 31 participants. Table 11 reveals the results that show good test-retest reliability of the A-CARC ranging from .56 to .78.

Table 11

Test-Retest Reliability Coefficient (3 weeks interval)

Scales	Alpha
Behavioral Subscale	.65**
Cognitive Subscale	.56**
Emotional Subscale	.59**
Physiological Subscale	.78**
Overall Responsivity of 10 stories	.74**
Overall Anger Rating of 10 stories	.65**

** $p < 0.01$

Validity

Convergent Validity

Convergent validity shows that “individual scores on a test are related to their scores on another test or measure of the same variable” (Biehler & Snowman, 2004, p. 137). Convergent validity was examined by conducting bivariate correlations between the adapted A-CARC subscale scores and the related M-SAI subscales scores, which was hypothesized that the correlations would be positive. Table 12 demonstrates statistically significant positive correlations between the related subscales of the A-CARC and M-SAI; however, they are low to moderate correlations. All the correlations were significant and low except for the correlation between the Behavioral Aggress subscale of the A-CARC and the Destructive Expression Scale of the M-SAI $r = 0.48$, $p < .01$; which is moderate.

Table 12

Convergent Validity between subscales of A-CARC & Abridged M-SAI

A-CARC subscales	M-SAI Subscales		
	Hostility	Destructive Expression	Positive Coping
Cognitive Aggress (CAG)	0.29**		
Cognitive Perceived Injustice (CPI)	0.19**		
Behavioral Aggress (BAG)		0.48**	
Behavioral Submit (BSM)		0.17**	
Behavioral Assert (BAS)			0.20**
Cognitive Assert (CAS)			0.18**

** $p < .01$

Divergent validity

Divergent validity shows whether measures that are unrelated are in reality, unrelated. Divergent validity was also reported by conducting bivariate correlations between the adapted CARC and the abridged M-SAI scores of the unrelated subscales, which was hypothesized that the correlations would be negative. Table 13 demonstrates statistically significant but low negative correlations between the unrelated subscales of

the A-CARC and M-SAI. All correlations were statistically significant, but one of the subscales' correlation between CSB and Positive Coping is not in the expected direction, $r = 0.10, p < .05$.

Table 13

Divergent Validity of the between subscales of A-CARC & Abridged M-SAI

A-CARC subscales	M-SAI Subscales		
	Hostility	Destructive Expression	Positive Coping
Cognitive Assert (CAS)	-0.15**		
Behavioral Assert (BAS)		-0.3**	
Cognitive Aggress (CAG)			-0.18**
Behavioral Aggress (BAG)			-0.19**
Cognitive Perceived Injustice (CPI)			-0.12*
Cognitive Self-Blame (CSB)			0.10*

* $p < .05$ ** $p < .01$

Factor Analysis

Simple Principal Components Factor analysis was first done for the A-CARC's 11 subscales (Behavioral Aggress, Cognitive Aggress, Cognitive perceived injustice, Behavioral Assert, Cognitive Assert, Cognitive Self-Blame, Behavioral Submit, Cognitive Submit, Physiological responses, Emotional responses, and Overall Anger). Table 14 shows the results of factor loadings, whereby it revealed three factors explaining 64% of the variance. The first factor was Behavioral Aggress (BAG), which loaded with a moderate to high correlation coefficient .61 and explained 32.24% of variance. The second factor was Behavioral Assert (BAS), which loaded with a high correlation coefficient .74 and explained 20.97% of the variance. The third factor was Behavioral Submit (BSM), which loaded with moderate correlation coefficient .57 and explained 10.83% of the variance. However, some components that loaded on the three factors could not explain each factor strongly. Table 14 shows the results of factor loadings.

Then, Principal Components' factor analysis was done to the A-CARC's 11 subscales with varimax rotation, which also yielded three main factors explaining 64% of the variance, however, the factors were better explained by the rotated loadings. The first factor was Behavioral Aggress (BAG), which loaded with a higher correlation coefficient .83 and explained 27.02% of variance. The second factor was Behavioral Assert (BAS), which also loaded with a higher correlation coefficient .88 and explained 19.52% of the variance. The third factor was Behavioral Submit (BSM), and it loaded with a higher correlation coefficient .66 and explained 17.51% of the variance. These three factors resulted with different component loadings that could explain each factor

more saliently, making each factor more defined. Table 15 shows the results of factor loadings with varimax rotation.

Although the factor structures that were rotated did not conform to the four hypothesized cognitive, behavioral, physiological, and emotional domains, however, it loaded to 3 factors that clearly categorize the subdomains or subscales of what the A-CARC is intended to measure. Therefore, we can say that the factor structures supported the factors related to the subscales of the A-CARC that it was devised to measure. It reported high factor loading for the subdomains that the A-CARC measures. The entire factor loadings were above 0.50, and were mostly low on the other factors that they were not aimed to measure.

The first factor comprises of items related to aggressive and negative anger experience that have highly loaded. The second factor comprises of the items related to assertiveness or in other words adaptive expression of anger that have also highly loaded. The third factor comprises of items related to submission and self-blame that have a moderate to high loadings.

Table 14

Factor Loadings for Exploratory Factor Analysis of the A-CARC subscales

Scales	Factors		
	1	2	3
Physiological Responses	0.862		
Emotional Responses	0.86		
Cognitive Aggress (CAG)	0.632		
Behavioral Aggress (BAG)	0.607		
Behavioral Submit (BSM)	0.571		
Cognitive Perceived Injustice (CPI)	0.539		
Behavioral Assert (BAS)		0.741	
Cognitive Assert (CAS)		0.668	
Overall Anger		-.576	
Cognitive Self-Blame (CSB)			0.55
Cognitive Submit (CSM)			0.465

Table 15

Factor Loadings for Exploratory Factor Analysis with Varimax Rotation of the A-CARC subscales

Scales	Factors		
	1	2	3
Behavioral Aggress (BAG)	0.826		
Cognitive Aggress (CAG)	0.792		
Overall Anger	0.675		
Cognitive Perceived Injustice (CPI)	0.627		
Physiological Responses	0.602		
Emotional Responses	0.580		
Behavioral Assert (BAS)		0.884	
Cognitive Assert (CAS)		0.816	
Cognitive Self-Blame (CSB)			0.758
Cognitive Submit (CSM)			0.668
Behavioral Submit (BSM)			0.657

CHAPTER V

DISCUSSION

Based on several prevalence studies, some of the key reasons children are referred to counselling and therapy are anger-related problems, such as oppositional behaviour, hostility, resentment, and verbal and physical aggression (Sukhodolsky, Solomon, & Perine, 2000; Blake, & Hamrin, 2007). Anger construct is a multifaceted emotional construct comprised of cognitive, physiological, and behavioral components.

Feindler (2006) stated that, “anger is a negative, phenomenological feeling/state that motivates desires for actions, usually against others, that aim to warn, intimidate, control, or attack, or gain retribution. It is associated with cognitive and perceptual distortions and deficiencies, such as misappraisals, justice-oriented demands, evaluations of others, dichotomous thinking, overgeneralization, attributions of blame coupled with beliefs about preventability and/or intentionality, subjective labelling of the feeling, fantasies of revenge and punishment, physiological changes, socially constructed and reinforced patterns of behaviour that define how to act when angry” (p. 4).

Based on the multidimensionality of anger, there has been an emerging interest among researchers and practitioners of school psychology and counselling in the area of children’s anger-related problems and the need for its prevention by early identification (Smith, & Furlong, 1998; Furlong, Smith, & Bates, 2000; Feindler & Engel, 2011). The purpose of this study was to adapt and validate the Children’s Anger Response Checklist to the Lebanese population so that it can be used to assess the underlying

multidimensional components of anger (cognitive, emotional, behavioural and physiological) in children from grades 4 through 6. This study aimed to investigate the *reliability* and *construct validity* of the adapted CARC.

The study was done based on the final 404 sample of Lebanese students whose ages ranged between 8 -13, and were in grades 4, 5, and 6. In this chapter, we discuss the results of the adapted CARC and compare it to the original version. Also, probable explanations of the results are provided under the reliability, and validity section in relation to previous research. Later, implications of findings related to theory and practice is discussed. Limitations for this study and recommendations for future research are provided.

Adaptation of the CARC

Adaptation of the CARC took place based on the *International Test Commission* (ITC) guidelines for adapting tests. The reason we adapted the CARC is that there is an ethical responsibility to have a children's anger assessment tool that takes into consideration the cultural and linguistic differences among the Lebanese population. Based on the ITC guidelines (2010), the adaptation process aimed to develop the CARC with more comparable psychometric qualities than the original one. Moreover, the growing recognition of multiculturalism has raised awareness for the need to provide instruments intended for the use within a single national context, and in our case it was making the CARC culturally suitable for the Lebanese population (ITC, 2010).

Then, the CARC was given to a group of three psychologists to review and check for its age appropriacy, culture-suitability, and that it meets the English

proficiency level of students. As a consensus, the group of psychologists evaluated how accurately each item/sub-domain measured the intended domain and suggested modifications.

After modifications were done, the A-CARC was pilot tested to ensure for sufficient reliability. Pilot study revealed that fourth graders needed more time to complete the test, approximately 10 more minutes (i.e. 40 minutes) than the 5th and 6th graders (15 → 30minutes). Also, students' questions were mostly related to clarifying and differentiating feelings such as "angry and frustrated" and "discouraged, and embarrassed." Therefore, it was important to clarify and differentiate these feelings before administering the test. This could be attributed to the lack of emotional awareness sessions (character education program) given in some of the schools visited.

Pilot study results encouraged the researcher to carry on with the study as it proved to have high internal reliability.

Reliability of A-CARC

Internal Reliability

The internal reliability findings shown in table 10 reveal that all in all, the obtained Chronbach alpha coefficients were moderate to high across the whole scale and its subscales. The Chronbach alpha was .91 for the whole scale, and for the responsivity of the 10 stories, .75 for the 10 anger ratings and physiological subscale, and .78 for the emotional subscale. However, because the Chronbach alpha was .69 for the behavioral subscale and .65 for the cognitive subscale, this indicates that these subscales have medium to high internal reliability. It is worth noting that the A-CARC's reliabilities of responsivity and anger rating for the 10 stories ($\alpha = .91$, and $\alpha = .76$

respectively) were similar to those reported by the original CARC, but slightly lower ($\alpha = .96$, and $\alpha = .87$ respectively). This could be attributed to the more homogeneous sample of the original sample of the CARC whereby all participants were all targeted from clinical settings and were receiving psychiatric therapy services. Whereas our sample targeted children that attended regular schools, that might or might not have had psychological problems.

Overall, the A-CARC proved to have a moderate to high reliability across the whole scale and its subscales. Therefore, the A-CARC's whole scale and related subscales appear to be more than adequate and stable to be considered reliable to measure anger and its 4 domains.

Test-Retest Reliability

The test-retest was done over 3 weeks time interval and results shown in table 11 reveal that the A-CARC's physiological and overall responsivity subscales have a high test-retest reliability, $\alpha = .78$ and $\alpha = .74$ respectively. In other words, physiological and overall responsivity subscales are highly stable over time. As for the test-retest reliability of behavioral and overall anger rating subscales, results showed that they have a moderately high correlation over time. Both the behavioral and overall anger-rating subscales have similar α coefficients, .65.

The results of the cognitive and emotional subscales showed moderate reliability over time ($\alpha = .56$ and $\alpha = .59$) respectively. Possible explanation that the cognitive and emotional scales were less stable over time than the rest of the scales is because of their subjective nature. Both emotional and cognitive subscales are related to implicit reactions of anger that gets easily influenced by personal experience, perceptions,

environmental factors, surrounding situations, i.e. context and in turn influences how children think and feel about anger provoking situations. This can be supported by Bandura's social learning theory, whereby; environmental events, person variables (thoughts and feelings), and behavior have reciprocal influence on each other (Powell, Symbaluk, & Macdonald, 2002).

Moreover, another factor that might have influenced the emotional and cognitive responses is the participating students' age group, between 8 and 12, which is not yet a very stable one based on developmental theories. This is explained by Piaget's cognitive stages of development, whereby this is the age that children start developing logical schemas that allow them to perceive, understand anger situations, and react in an either adaptive or maladaptive manner, based on their perception of the situation (Beihler & Snowman, 2004; Benaroch, 2012). Therefore, at this age children's cognitive and emotional development has not matured enough to be able to have highly stable results underlying the cognitive and emotional responses to anger.

There were no studies done to check for the test-retest reliability of the CARC. However, what is distinctive about this study is that it reports the test-retest reliability of the A-CARC. Overall the A-CARC proved to have good test-retest reliability, i.e., moderate to high stability over time.

Validity of A-CARC

Convergent Validity

The A-CARC's convergent validity was obtained by comparing responses on the A-CARC's subscales with responses on the abridged M-SAI subscales. It was hypothesized that there will be positive correlations between the adapted A-CARC

subscale scores and the related abridged M-SAI subscales' scores. Hence, it was assumed that there will be a positive correlation between the *Cognitive subdomains*, (Cognitive Aggression, and Cognitive Perceived Injustice), measured by the *Adapted CARC, with hostile subscale, i.e. cognitive domain* on the M-SAI. Moreover, it was assumed that there will be a positive correlation between the *Behavioral subdomains*, (Behavioral Aggression, and Behavioral Submission), measured by the Adapted CARC, with *destructive expressions* of anger on the M-SAI. Last, it was assumed that there will be a positive correlation between the A-CARC subdomains; *cognitive and behavioral assert subdomains*, with *positive coping* on the M-SAI.

Table 12 shows significant low to moderate correlations between all the related subscales of the A-CARC and abridged M-SAI, that range between $r = .17 \rightarrow r = .48$. First, the highest significant correlation, was obtained between the Behavioral Aggress (BAG) subscale of the A-CARC and the Destructive Expression (DE) of the abridged M-SAI ($r = .48, p < .01$). The second highest correlation was between Cognitive Aggress (CAG) and Hostility ($r = .29, p < .01$). The prior results are considered significantly substantial to moderate correlations, which possibly explain that the Behavioral and Cognitive Aggress subscales tap into angry children's overt and covert aggressive behaviors and thoughts (Furlong, Smith, & Bates, 2000). A sound reason for this significant substantial to moderate correlation can be attributed to Novaco's model of anger whereby cognitive appraisals/processes about anger provoking situations and behavioral reactions play a reciprocal role in influencing each other (Powell, Symbaluk, & Macdonald, 2002; Power & Dalgleish, 2008). Normally, the emotional and physiological factors play an influential role; however, the validity of these subscales will be discussed under the factorial analysis section. The Integrative Cognitive Model

of anger also supports the prior results, whereby, children's cognitive processing tendencies are seen as interfering variables between hostile situational input and resultant tendencies towards anger (reactive aggression) (Wilkowski & Robinson, 2010). It is worth noting that the original CARC's correlation for the Total Aggress scores (behavioral and cognitive aggress scores) was reported by comparing it with the Children's Action Tendency Scale (CATS) Aggressiveness score, and not the M-SAI. However, it was a highly significant positive relationship (.69). Most probably had we tested the total aggress validity with the M-SAI; the correlation coefficient would have been higher.

On the other hand, the A-CARC's Behavioral and Cognitive Assert subscales correlate with the Positive Coping subscale of the abridged M-SAI ($r = .20, p < .01, r = .18, p < .01$ respectively) whereby there is a positive correlation that is moderately low. We can assume that the close range of correlation between the Behavioral and Cognitive Assert with Positive Coping can also be attributed to the reciprocal influences that cognitive and behavioral reactions have on each other. This is explained by Novaco's model of anger whereby cognitive appraisals/processes about anger provoking situations and behavioral reactions play a reciprocal role in influencing each other (Powell, Symbaluk, & Macdonald, 2002; Power & Dalgleish, 2008). It is worth noting that the original CARC's correlations for the Total Assert scores (behavioral and cognitive assert scores) was reported by comparing it with the CATS Assertiveness score, and not the M-SAI Positive Coping subscale scores. However, there was an insignificant relationship between the CARC's Assert subscale scores and the CATS Assertiveness scores.

It is important to note that a possible explanation for having a lower correlation coefficient between the Cognitive Aggress subscale and the hostility subscale ($r = .29$) than the correlation coefficient between the Behavioral Aggress subscale and the Destructive expression subscale ($r = .48$), can be attributed to the notion that cognitive responses in the participating students' age group, between 8 and 12, is not yet a very stable one based on developmental theories. This is explained by Piaget's cognitive stages of development (Beihler & Snowman, 2004; Benaroch, 2012). It is worth noting that the original CARC study did not test the cognitive and behavioral aggress' convergent validity separately.

In conclusion, the A-CARC's convergent validity results showed that all the correlations were significant and low except for the correlation between the Behavioral Aggress subscale of the A-CARC and the Destructive Expression Scale of the M-SAI $r = 0.48, p < .01$; which is moderate.

Divergent Validity

To further check the construct validity of the A-CARC, divergent validity was obtained by comparing responses on the A-CARC's subscales with responses of unrelated scales on the abridged M-SAI. It was hypothesized that there will be negative correlations between the adapted A-CARC subscale scores with the unrelated abridged M-SAI subscales' scores. Hence, it was assumed that there would be negative correlations between the adapted CARC's cognitive and behavioral assert subscales, with the M-SAI's hostility and destructive expression subscales respectively. Furthermore, it was assumed that there will be a negative correlation between the

adapted CARC's cognitive aggress, cognitive perceived injustice, cognitive self-blame and behavioral aggress subscales, with the M-DSAI's positive coping subscale.

Table 13 shows that all A-CARC's subscales have a very low negative correlation with the unrelated subscales of the abridged M-SAI ($r = -0.3 \rightarrow r = -0.12$), except for the Cognitive Self-Blame subscale which significantly correlated with Positive Coping subscale in a low but positive direction ($r = .10, p < .01$). The results of the divergent validity are consistent with the assumption the Cognitive Assert subscale should be negatively correlated with Hostility subscale, Behavioral Assert subscale negatively correlated with Destructive Expression subscale, and Cognitive Aggress, Behavioral Aggress, Cognitive Perceived Injustice subscales should negatively correlate with Positive Coping subscale. However, a possible explanation as to the reason Cognitive Self-Blame subscale correlated positively with Positive Coping subscale is that Lebanese children might have viewed Cognitive Self-Blame as a positive coping mechanism to deal with an anger-provoking situation.

Therefore, we can establish that the subscales of the A-CARC have a significant divergent validity, and its cognitive and behavioral subscales actually measure the constructs that they intend to test, as they inversely correlated with unrelated subscales of the abridged M-SAI, except for the Cognitive Self-Blame subscale, which had a low correlation.

The following section will discuss the factorial structures of the A-CARC's cognitive and behavioral subscales along with the emotional, physiological and overall anger rating scales that we have further investigated.

Factor Analysis

The A-CARC's 11 subscales (Behavioral Aggress, Cognitive Aggress, Cognitive perceived injustice, Behavioral Assert, Cognitive Assert, Cognitive Self-Blame, Behavioral Submit, Cognitive Submit, Physiological responses, Emotional responses, and Overall Anger) were first subjected to simple Principal Components Factor analysis that yielded three main factors Behavioral Aggress, Behavioral Assert, and Behavioral Submit explaining 64 % of the variance. However, the three factor component loadings did not saliently define each factor, as much as the 3 factor component loadings were strongly defined after conducting Principal Factor Analysis with varimax rotation. Results of factor loadings with varimax rotation are explained as follows.

Six items loaded onto Factor 1. It is clear from Table 15 that the six items relate to aggressive and negative anger experience. The factor loadings onto factor 1 were high to moderate, Behavioral Aggress (.826), Cognitive Aggress (.792), Cognitive Perceived Injustice (.627), Physiological responses (.602), Emotional responses (.58), and Overall Anger (.675). Clearly, this factor combines the four dimensions of anger and specifically the maladaptive cognitive and behavioral subdomains (BAG, CAG, and CPI). The other three items that have loaded on Factor 1, overall anger, physiological and emotional responses seem to go in the same direction as the maladaptive cognitive and behavioral domains.

The factor loadings on Factor 1 can be explained by *Novaco's Model of Anger* as it describes anger as an *emotional response to provocation*, characterised by *heightened automatic arousal, cognitive appraisals, attributions about provocation*

events, and behavioural reactions toward or away from the provocation (Novaco, 1976; Feindler, Adler, Brooks, & Bhumitra, 1993). This definition puts emphasis on the interpersonal nature of anger and that there is generally a perceived stimulus thought to be aversive (Feindler, 2006).

And in this case, Lebanese children's maladaptive responses to provocation did not only entail cognitive and behavioural manifestations, but also physiological and emotional responses too. This can be attributed to the nature of the Lebanese population that they might have negative emotional and physiological responses related to anger. The fact that the overall anger loaded on this factor too, shows that the anger rating is related to the four underlying domains of anger. The maladaptive emotional, physiological, anger rating loadings to factor 1 can be explained by the fact that a lot of Lebanese children have been subjected to a long period of mischief and recurrent wars that inflicted and still inflict mental and psychological problems on them. According to Chimienti, Nasr, & Khalifeh (1989), 30% of Lebanon's urban children who were subjected to war between the age 3 and 9 years old, were classified to be at high risk of developing psychological disorders later in life. Anger was consistently found to be a more habitual coping response to the sporadic events happening in Lebanon. It was reported that the general emotional reaction of children who were exposed to war, was 83% fear, 77% *anger* and 76% anxiety (Chimienti, Nasr, & Khalifeh, 1989). Therefore, one can say that due to the Lebanese political and economical instability Lebanese children may have had moderate to high emotional, physiological, anger rating, cognitive and behavioral maladaptive responses to anger. This is in line with findings of Coccaro, Noblett, and McCloskey's (2009) study that hostile attribution is significantly correlated with measures of emotion processing and responsiveness to perceived

provocation. As a conclusion, Factor 1 can be labeled, “Maladaptive-Aggressive Manifestations” specifically because the highest variance was explained by the Behavioral Aggress component and the rest of the components loaded in the same direction.

As for Factor 2, two items strongly loaded onto it. Table 15 shows that the two items relate to adaptive manifestations of anger. The factor loadings onto factor 2 were high, Behavioral Assert (.884), and Cognitive Assert (.812). Clearly, this factor combines the cognitive and behavioral items related to assertiveness, which the A-CARC can strongly tap into. This factor can be labeled, “Adaptive/Assertive Cognitive and Behavioral Manifestations”.

As for Factor 3, three items loaded onto it. Table 14 shows that the three items relate to submissive or passive maladaptive manifestations of anger. The factor loadings onto factor 3 were high, Cognitive Self-Blame (.758), Cognitive Submit (.668), and Behavioral Submit (.657). Clearly, this factor combines the cognitive and behavioral items related submissive and self-blame manifestations of anger that the A-CARC can also tap into. This factor can be labeled, “Maladaptive-Passive Manifestations”.

Although the factor structures did not conform to the hypothesized cognitive, behavioral, physiological, and emotional domains, however, it loaded to 3 factors that clearly categorize the subdomains or subscales of what the CARC is intended to measure (cognitive aggress, cognitive assert, cognitive perceived injustice, cognitive self-blame, cognitive submit, behavioral aggress, behavioral assert, behavioral submit, emotional domain, physiological domain and overall anger).

It is worth mentioning that the results of the original *CARC's principle component analysis* which was conducted on the CARC together with the Children's Inventory of Anger (CIA), and (CATS); revealed only *two factors*, whereby CARC's *Factor 1* (adaptive and maladaptive manifestations) was comprised of emotional, physiological, Behavioral Submit, Cognitive Submit, Cognitive Self-Blame, Cognitive Assert, Behavioral Assert, and Cognitive Perceived Injustice; and *Factor 2* (maladaptive manifestations) was comprised of Behavioral Aggress, Cognitive Aggress, Overall Anger Rating, Physiological, Cognitive Perceived Injustice CATS Submissiveness, and CIA.

Therefore, we can say that the factor structures of the A-CARC were more salient than the original factor structures of the CARC. The A-CARC was able to distinguish between the assertive and submissive response tendencies that the CARC could not do. Moreover, the A-CARC could distinguish clearly between the adaptive and maladaptive responses (Factor 1 and 3 included subscales that test for maladaptive aggressive and passive responses. Factor 2 included subscales that test for adaptive assertive responses), whereas the original CARC's factors did not distinguish between the adaptive and maladaptive response tendencies.

Overall, the A-CARC reported high factor loading for the subdomains that the A-CARC measures. The entire factor loadings were above 0.50, and were mostly low on the other factors that they were not aimed to measure. Hence, it can be considered a valid assessment tool that would unravel distinctively the adaptive and maladaptive, behavioral, cognitive, emotional and physiological responses to anger.

Implications of Findings to Theory and Practice in the Lebanese Context

This study's results confirm the reliability and validity of the adapted CARC to the Lebanese culture. Having a reliable and valid A-CARC serves to inform both research (theory) and treatment (practice) of children with anger problems. It plays a huge role in prevention of anger-related disorders that might develop at a later stage.

- It serves to inform theory, because A-CARC's multidimensional scales are based on the cognitive behavioural and social learning theories, which can yield fruitful findings to counselling theories of anger. Moreover, based on Feindler's et al. (1993) research, "Because the CARC format presents a sequence of anger-inducing antecedent situations and subsequent responses, the device itself lays the foundational rationale for a social learning theory-based treatment approach" (p. 347). Furthermore, it specifically assists in the assessment of cognitive theories of anger and provides a means for assessing the potential mode of treatment for children with anger i.e. gives the potential to evaluate effective interventions of anger (does cognitive restructuring produce greater reduction of anger-related thoughts than relaxation training?) (Martin & Dahlen, 2007).
- The A-CARC serves practice, because, it benefits counsellors at the pre-treatment, treatment, post-treatment (evaluation) and the diagnostic level. Thus, making this device useful at the preventative and intervention level.
 - The Adapted CARC can be administered at *pre-treatment level*, which can aid in assessing the degree to which the child perceives him/herself to be angry in different situations, and how he/she would choose to respond (Feindler et al., 1993).
 - This instrument benefits students who are referred for anger management problems at school, whereby the counsellor can administer A-CARC before delivering anger management sessions.

- When developing a treatment or action plan, the A-CARC can yield specific individualized anger response profile for each student. Therefore, each of the differentiated components of adaptive (cognitive and behavioural) and maladaptive (cognitive, emotional, behavioural, and physiological) can be assessed for suitable skills training or therapy, e.g. assertiveness training, problem solving skills, emotional identification skills, relaxation, inoculation therapy etc. (Feindler et al., 1993).
- The A-CARC could be used along with mood initiation procedures to know whether people determined to have cognitive vulnerabilities to anger would in fact think or behave differently when provoked (Martin & Dahlen, 2007). It gives the counsellor some insight when developing character education lessons that target anger, by differentiating anger management strategies relative to different anger response profiles.
- The counsellor can then use the CARC as an *evaluation tool* over the academic year, to check if the anger management lessons were effective and if the students developed more adaptive approach to anger.
- It also lends itself to be used for self-monitoring administration, which would help the counsellor in teaching specific and appropriate alternative responses to anger provocation (Martin & Dahlen, 2007; & Feindler et al., 1993).
- The A-CARC can be used as a *diagnostic tool* for early identification of non-overt or underlying components of anger at the pre-clinical level and related difficulties that would in turn make use of preventive intervention in school settings (Feindler et al., 1993).

Limitations

- The Children's Anger Response Checklist was adapted and administered to a sample of grades 4, 5, & 6 students in Lebanon, Greater Beirut area only. Therefore, this limits its generalizability to other age groups, other regions and cultures.
- A-CARC did not target gender differences related to underlying multidimensional measure of anger.
- The CARC was adapted to the Lebanese population in the English language; and not the native language Arabic.
- The A-CARC is a self-report assessment tool; therefore, it is likely to display social desirability elements and response bias (Feindler & Engel, 2011).
- It is assumed that the convergent and divergent validity were significant but, low as the M-SAI might have needed further validation.
- This study did not investigate the A-CARC's predictive and discriminant validity.
- This study did not investigate the A-CARC's construct validity by correlating it with other global tools such as parent and teachers' rating scales.
- Further investigation of the factorial structure using confirmatory factor analysis of A-CARC was not tackled in this study.

Recommendations for Future Research

- When administering the A-CARC to students in grade 4, it is recommended that they be given more examples and time to complete the test, approximately 10 more minutes (i.e. 40 minutes) than the 5th and 6th graders (15 → 30minutes).

- The CARC was adapted and administered to a sample of grades 4, 5, & 6 students in Lebanon, Greater Beirut area only. Therefore, future studies should be done to generalize it to other age groups, regions and cultures.
- Due to the fact that the CARC is adapted to the Lebanese population in the English Language, there is a need to Arabize it to cater for all students in public and private schools, regardless of their second language knowledge.
- It is recommended that further research should target assessing gender differences with respect to the underlying adaptive versus maladaptive cognitive, affective, behavioral and physiological components of anger.
- Because the A-CARC is a self-report assessment tool; therefore, counselors should use additional data collection tools. According to Feindler and Engel (2011), some of these additional data collection tools can be direct observation; ratings by parents, teachers and staff; analogue role-play methods and self-monitoring tools. Feindler and Engel (2011), propose that a self-monitoring tool, Hassle Log, be used along with the CARC. This is a flexible method to quantify several variables linked with both the antecedent and consequent conditions surrounding anger provocation and aggressive behavior (Feindler & Engel, 2011).
- Because the A-CARC's construct validity was investigated against the M-SAI, therefore, it is important to further investigate the factor structures of the M-SAI and then correlate it with the A-CARC.
- Further investigate the A-CARC's construct validity by correlating it with other global tools such as the Child's Behavior Checklist-Teacher's Report Form (CBCL-TRF) to make the results of it's validity stronger.

- Investigate the A-CARC's predictive validity of precursors that may develop to later psychopathology.
- Further investigate the factorial structure using confirmatory factor analysis of A-CARC.
- Develop norms based on the Confirmed factorial structure, which will enable the A-CARC to serve diagnostic assessment purposes too (differential diagnosis).

APPENDIX I

DEFINITIONS OF THE CARC'S SUBDOMAINS

Cognitive Subdomains	Definition
Cognitive Aggress (CAG)	To think in an intensely hostile manner towards others. For example, plan to get back at someone or something.
Cognitive Assert (CAS)	This is an adaptive, positive, non-hostile, non-coercive, pattern of thinking to deal with anger provoking situations.
Cognitive Submit (CSM)	To think of letting go or denying one's own rights and feelings.
Cognitive Perceived Injustice (CPI)	Belief or perception of a situation as being unfair.
Cognitive Self-Blame (CSB)	When a child attributes anger provoking situations to him or herself.

Behavioural Subdomains	Definition
Behavioural Aggress (BAG)	'Behaving in a hostile and coercive pattern at the expense of others' (Feindler, Adler, Brooks, & Bhumitra, 1993, p.338).
Behavioural Assert (BAS)	'Patterns of expressing ones thoughts and feelings in a peaceful and non-coercive manner, without violating the rights of others' (Feindler, Adler, Brooks, & Bhumitra, 1993, p.338). In other words, it is positive and adaptive pattern of behaviour to deal with anger situations.
Behavioural Submit (BSM)	'Is the pattern of non-hostile behaviour that involves considering the feelings, power or authority of others while denying or not standing up for one's own rights and feelings' (Feindler, Adler, Brooks, & Bhumitra, 1993, p.338).

The CARC's cognitive and behavioural definitions of its subdomains are adopted from: Feindler, E. L., Adler, N., Brooks, D., & Bhumitra, E. (1993). The Children's Anger Response Checklist: CARC. In L. VandCreek (Ed.), *Innovations in clinical practice* (vol. 12, pp. 337-362). Sarasota, FL: Professional Resource Press.

APPENDIX II

CHILDREN'S ANGER RESPONSE CHECKLIST

CHILDREN'S ANGER RESPONSE CHECKLIST*

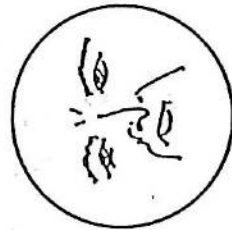
(STORIES 1-10)

Instructions: Read the following stories and check off all the possible responses you might have in these situations. Remember you can check off as many or as few responses as you feel you might have in these situations. There is also an area marked "other" where you can put responses that you might have but are not listed on the page. Then check off how angry you would be next to the face that matches how you would feel.

OVERALL ANGER RESPONSE RATING KEY - Only pick one!



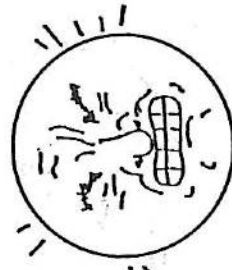
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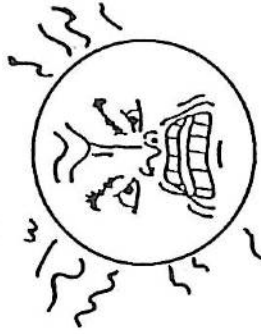
2



3



4



5

1. I'm not angry, that situation doesn't bother me at all. I don't know why it would bother someone.

2. That situation would bother me a little, but not enough to get me angry.

3. I'm angry, but I think I will be able to calm myself down real soon.

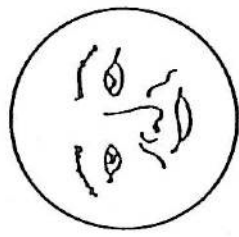

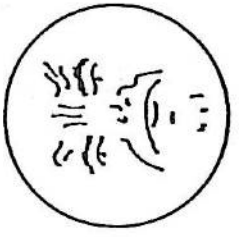
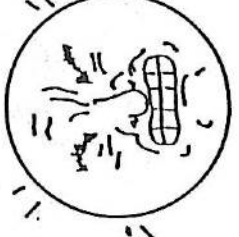
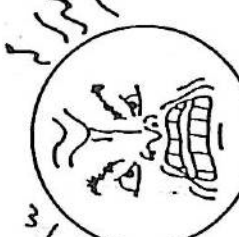
4. I'm really angry and it's going to take a lot of effort to calm myself down, but I think I will calm down.

5. I can't stand it! I'm very, very angry and I feel like doing something about it right now, like maybe really hurting that person or destroying that thing.

STORY #1

You got a brand-new present for your birthday. It's your favorite present. One of the other kids on the block takes it and breaks it while playing with it. What would you do?

<p>C</p> <p>Think it over and decide on a way to handle it? (CAS)</p> <p>Tell yourself to forget it? (CSM)</p> <p>Think that you hate everybody? (CAG)</p> <p>Think that it's your fault? (CSB)</p> <p>Think that it's unfair? (CPI)</p>	<p>P</p> <p>Get red in the face?</p> <p>Start breathing fast?</p> <p>Get hot and sweaty?</p> <p>Tighten up your muscles?</p> <p>Cry?</p>	<p>E</p> <p>Feel sad?</p> <p>Feel mad?</p> <p>Feel hurt?</p> <p>Feel afraid?</p> <p>Feel happy?</p>	<p>B</p> <p>Hit or push somebody? (BAG)</p> <p>Bottle it up? (BSM)</p> <p>Run away and hide? (BSM)</p> <p>Make a mean face? (BAG)</p> <p>Tell an adult? (BAS)</p>	<p>Other responses I might have:</p> <p>_____</p> <p>_____</p> <p>_____</p> <p>_____</p>
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1 _____	2 _____	3 _____	4 _____	5 _____

ANGER RATING (1-5) _____ TOTAL E _____ TOTAL P _____ TOTAL B _____ TOTAL C _____

TOTAL BAG + CAG _____ TOTAL BAG + CAS _____ TOTAL BSM + CSM _____ TOTAL CPI _____ TOTAL CSB _____

STORY #2

Your parent is very upset and angry because your teacher called. You have been accused of copying somebody's homework. You didn't copy it. What would you do?

<p>C</p> <p>Think that you were wrong? (CSB) _____</p> <p>Think that it isn't fair? (CPI) _____</p> <p>Think about how to get back? (CAG) _____</p> <p>Think it over and decide on a way to handle it? (CAS) _____</p> <p>Think you don't care because nobody will believe you anyway? (CSM) _____</p>	<p>E</p> <p>Feel frustrated? _____</p> <p>Feel scared? _____</p> <p>Feel angry? _____</p> <p>Feel sad? _____</p> <p>Feel hurt? _____</p>	<p>B</p> <p>Yell or scream? (BAG) _____</p> <p>Refuse to talk to anyone? (BSM) _____</p> <p>Throw something? (BAG) _____</p> <p>Talk it out with your parent? (BAS) _____</p> <p>Talk it out with other kids? (BAS) _____</p>	<p>P</p> <p>Cry? _____</p> <p>Get pains in your stomach? _____</p> <p>Start breathing fast? _____</p> <p>Get hot and sweaty? _____</p> <p>Feel your heart racing? _____</p>	<p>Other responses I might have:</p> <p>_____</p> <p>_____</p> <p>_____</p> <p>_____</p>
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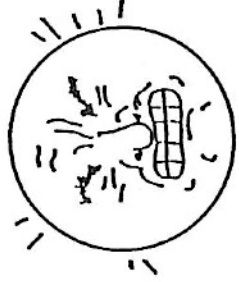
1 _____



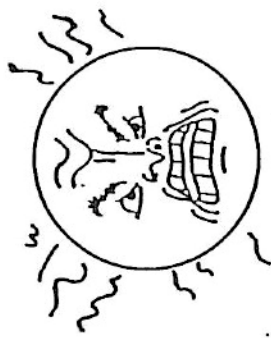
2 _____



3 _____



4 _____



5 _____

ANGER RATING (1-5) _____ TOTAL E _____ TOTAL P _____

TOTAL C _____ TOTAL B _____

TOTAL CAG _____ TOTAL BAG _____

TOTAL CAS _____ TOTAL BAS _____

TOTAL CSM _____ TOTAL BSM _____

TOTAL CPI _____ TOTAL CSB _____

TOTAL BAG + CAG _____

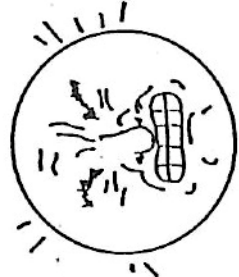
TOTAL BAS + CAS _____

TOTAL BSM + CSM _____

STORY #3

Your team would win if you scored the next point. You try your best but you miss and the other team wins. What would you do?

E	C	P	B	Other responses I might have:
Feel scared? _____	Think that you hate yourself? (CSB) _____	Feel your heart pounding? _____	Throw something? (BAG) _____	_____
Feel hurt? _____	Think about how to get even? (CAG) _____	Feel very tired? _____	Run away and hide? (BSM) _____	_____
Feel angry? _____	Think that it's unfair? (CPI) _____	Get red in the face? _____	Refuse to talk to anyone? (BSM) _____	_____
Feel happy? _____	Tell yourself you tried your best? (CAS) _____	Tighten up your fists? _____	Talk to your teammates or coach about it? (BAS) _____	_____
Feel embarrassed? _____	Tell yourself you don't care? (CSM) _____	Cry? _____	Yell at other team? (BAG) _____	_____



1 _____ 2 _____ 3 _____ 4 _____ 5 _____

ANGER RATING (1-5) _____ TOTAL E _____ TOTAL P _____ TOTAL C _____ TOTAL BAG + CAG _____

_____ TOTAL BAS _____ TOTAL CAG _____ TOTAL BAS + CAG _____

_____ TOTAL BSM _____ TOTAL CAS _____ TOTAL BAS + CAS _____

_____ TOTAL CPI _____ TOTAL CSM _____ TOTAL BSM + CSM _____

_____ TOTAL CSB _____

STORY #4

You told your best friend your best secret but your best friend told the class gossip. What would you do?

<u>C</u>	<u>E</u>	<u>P</u>	<u>B</u>	Other responses I might have:
Think that you deserved what happened? (CSB)	Feel sad?	Get hot and sweaty?	Ignore what happened? (BSM)	_____
Think that you hate that friend? (CAG)	Feel hurt?	Get a pain in your stomach?	Yell or scream? (BAG)	_____
Think that you will keep your secrets to yourself next time? (CAS)	Feel like crying?	Start breathing fast?	Stay calm and ask best friend what happened? (BAS)	_____
Think it's unfair? (CPI)	Feel like laughing?	Get cold hands?	Talk it over with someone else? (BAS)	_____
Tell yourself that it doesn't matter? (CSM)	Feel angry?	Feel very tired?	Push or kick your friend? (BAG)	_____








1 _____ 2 _____ 3 _____ 4 _____ 5 _____

ANGER RATING (1-5)	TOTAL E	TOTAL P	TOTAL B	TOTAL C
	_____	_____	_____	_____
	TOTAL CAS	TOTAL BSM	TOTAL CAG	TOTAL BAG + CAG
	_____	_____	_____	_____
	TOTAL CPI	TOTAL CSB	TOTAL CAS	TOTAL BAS + CAS
	_____	_____	_____	_____
	TOTAL CSM	TOTAL BSM + CSM	TOTAL CPI	TOTAL BSM + CSM
	_____	_____	_____	_____
	TOTAL CSB		TOTAL CSB	
	_____		_____	

STORY #5

You did all your chores because your parent told you that when you finished you could go to visit your friend. When it is time to go, your parent tells you that it is too late and you can't go. What would you do?

<p>P</p> <p>Get red in the face? _____</p> <p>Cry? _____</p> <p>Get hot and sweaty? _____</p> <p>Tighten up your muscles? _____</p> <p>Feel your heart pounding? _____</p>	<p>C</p> <p>Think that parent is unfair? (CPI) _____</p> <p>Think about how to get parent to change his/her mind? (CAS) _____</p> <p>Think about how to get back at parent? (CAG) _____</p> <p>Think that it's your own fault? (CSB) _____</p> <p>Go to room and pretend it didn't happen? (CSM) _____</p>	<p>B</p> <p>Throw something? (BAG) _____</p> <p>Run out of the room? (BSM) _____</p> <p>Refuse to talk? (BSM) _____</p> <p>Try to talk it over with parent? (BAS) _____</p> <p>Call friend and make plans to visit on the next day? (BAS) _____</p>	<p>E</p> <p>Feel happy? _____</p> <p>Feel scared? _____</p> <p>Feel mad? _____</p> <p>Feel hurt? _____</p> <p>Feel frustrated? _____</p>	<p>Other responses I might have: _____</p> <p>_____</p> <p>_____</p> <p>_____</p> <p>_____</p>
				
1 _____	2 _____	3 _____	4 _____	5 _____
<p>ANGER RATING (1-5) _____ TOTAL E _____ TOTAL P _____ TOTAL B _____ TOTAL C _____</p> <p>TOTAL BAG + CAG _____ TOTAL CAG _____</p> <p>TOTAL BAS + CAS _____ TOTAL CAS _____</p> <p>TOTAL BSM + CSM _____ TOTAL CSM _____</p> <p>TOTAL CPI _____ TOTAL CPI _____</p> <p>TOTAL CSB _____ TOTAL CSB _____</p>				

STORY #6

You are having trouble with your homework and ask your parent for help. The third time you ask, your parent yells at you to stop bothering him or her. What would you do?

<p>B</p> <p>Yell or scream? (BAG) _____</p> <p>Run away and hide? (BSM) _____</p> <p>Try to talk it out? (BAS) _____</p> <p>Do something else and try to forget what happened? (BSM) _____</p> <p>Call another kid in your class to ask about homework? (BAS) _____</p>	<p>E</p> <p>Feel embarrassed? _____</p> <p>Feel sad? _____</p> <p>Feel happy? _____</p> <p>Feel angry? _____</p> <p>Feel nervous? _____</p>	<p>P</p> <p>Cry? _____</p> <p>Get red in the face? _____</p> <p>Tighten up your muscles? _____</p> <p>Feel very tired? _____</p> <p>Feel your heart pounding? _____</p>	<p>C</p> <p>Think about how mean your parent is to you? (CPT) _____</p> <p>Think about other ways to get help? (CAS) _____</p> <p>Tell yourself to forget it? (CSM) _____</p> <p>Think that you are wrong? (CSB) _____</p> <p>Think that you hate your parent? (CAG) _____</p>	<p>Other responses I might have:</p> <p>_____</p> <p>_____</p> <p>_____</p> <p>_____</p>
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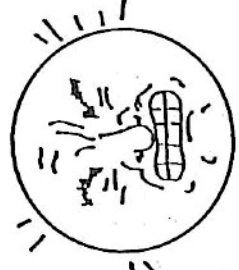
1 _____



2 _____



3 _____



4 _____



5 _____

ANGER RATING (1-5) _____ TOTAL E _____ TOTAL P _____ TOTAL B _____ TOTAL C _____

TOTAL BAG _____ TOTAL BAG + CAG _____

TOTAL BAS _____ TOTAL BAS + CAS _____

TOTAL BSM _____ TOTAL BSM + CSM _____

TOTAL CPI _____ TOTAL CSB _____

STORY #7

You are playing with a friend and your friend breaks something accidentally. Your friend blames you for it. What would you do?

<p>C</p> <p>Think things through before reacting? (CAS)</p> <p>Think people always blame you for everything? (CPI)</p> <p>Think about how to get back at your friend? (CAG)</p> <p>Tell yourself to forget it? (CSM)</p> <p>Think that you are to blame? (CSB)</p>	<p>E</p> <p>Feel sad?</p> <p>Feel happy?</p> <p>Feel nervous?</p> <p>Feel angry?</p> <p>Feel hurt?</p>	<p>B</p> <p>Run away and hide? (BSM)</p> <p>Tell an adult what happened? (BAS)</p> <p>Talk it over with your friend? (BAS)</p> <p>Yell at your friend? (BAG)</p> <p>Ignore what happened? (BSM)</p>	<p>P</p> <p>Feel sick to your stomach?</p> <p>Feel cold?</p> <p>Feel your heart pounding?</p> <p>Start breathing fast?</p> <p>Tighten up your muscles?</p>	<p>Other responses I might have:</p> <p>_____</p> <p>_____</p> <p>_____</p> <p>_____</p>
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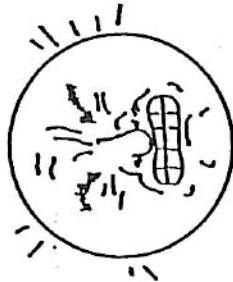
1 _____



2 _____



3 _____



4 _____



5 _____

ANGER RATING (1-5) _____

TOTAL E _____

TOTAL P _____

TOTAL B _____

TOTAL BAG _____

TOTAL BAS _____

TOTAL BSM _____

TOTAL C _____

TOTAL CAG _____

TOTAL CAS _____

TOTAL CSM _____

TOTAL CPI _____

TOTAL CSB _____




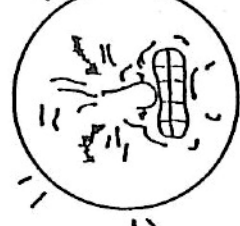
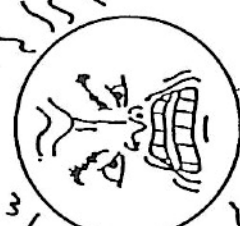
TOTAL BAG + CAG _____

TOTAL BAS + CAS _____

TOTAL BSM + CSM _____




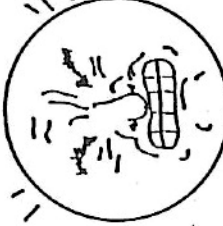
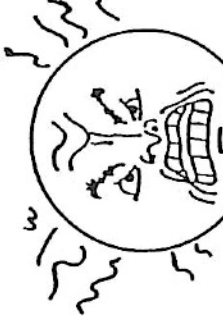
STORY #8

You hardly ever watch TV but while you are watching your one favorite TV program, your parent starts to nag you a lot to clean up your room. Finally, your parent comes in and shuts off the TV and sends you to your room. What would you do?

<u>E</u>	<u>P</u>	<u>B</u>	<u>C</u>	Other responses I might have:
_____ Feel happy?	_____ Tighten up your muscles?	_____ Refuse to move? (BAG)	_____ Think that you hate your parent? (CAG)	_____
_____ Feel nervous?	_____ Cry?	_____ Run away	_____ Think that it's unfair? (CPI)	_____
_____ Feel mad?	_____ Feel your heart pounding?	_____ and hide? (BSM)	_____ Think that your parent is right? (CSB)	_____
_____ Feel hurt?	_____ Feel very tired?	_____ Yell and scream? (BAG)	_____ Think about how to solve the problem? (CAS)	_____
_____ Feel disgusted?	_____ Get hot and sweaty?	_____ Talk it over with your parent? (BAS)	_____ Think that you don't care? (CSM)	_____
		_____ Go to your room quietly and try and forget about it? (BSM)		
1 _____	2 _____	3 _____	4 _____	5 _____
				
ANGER RATING (1-5) _____	TOTAL E _____	TOTAL P _____	TOTAL B _____	TOTAL C _____
	TOTAL E _____	TOTAL P _____	TOTAL BAG _____	TOTAL CAG _____
	TOTAL E _____	TOTAL P _____	TOTAL BAS _____	TOTAL CAS _____
	TOTAL E _____	TOTAL P _____	TOTAL BSM _____	TOTAL CSM _____
	TOTAL E _____	TOTAL P _____	TOTAL CPI _____	TOTAL CSM + CSM _____
	TOTAL E _____	TOTAL P _____	TOTAL CSB _____	TOTAL BSM + CSM _____
	TOTAL E _____	TOTAL P _____	TOTAL CSB _____	TOTAL BAS + CAS _____

STORY #9

You have been working on homework that is taking you a long time to finish. You are almost done when you spill water all over it accidentally. What would you do?

P	C	B	E	Other responses I might have:
Feel hot and sweaty? _____	Think it's not fair? (CPI) _____	Tell an adult? (BAS) _____	Feel mad? _____	_____
Start breathing fast? _____	Think it's your own fault? (CSB) _____	Hit or kick something? (BAG) _____	Feel afraid? _____	_____
Get pains in your stomach? _____	Tell yourself to stay calm? (CAS) _____	Yell or scream? (BAG) _____	Feel embarrassed? _____	_____
Cry? _____	Think that you hate homework? (CAG) _____	Ask for help? (BAS) _____	Feel nervous? _____	_____
Tighten up your muscles? _____	Think that you were going to get a bad grade anyway? (CSM) _____	Turn it in as it is? (BSM) _____	Feel disgusted? _____	_____
1	2	3	4	5
				
ANGER RATING (1-5) _____ TOTAL E _____		TOTAL B _____	TOTAL C _____	TOTAL BAG + CAG _____
TOTAL P _____		TOTAL BAG _____	TOTAL CAG _____	TOTAL BAS + CAS _____
TOTAL EAS _____		TOTAL BAS _____	TOTAL CAS _____	TOTAL BSM + CSM _____
TOTAL CAS _____		TOTAL BSM _____	TOTAL CSM _____	TOTAL CPI _____
TOTAL CSM _____		TOTAL CPI _____	TOTAL CSB _____	

STORY #10

For no reason at all, the class bully starts calling you names and making fun of the way you look. Your friends are around and hear the class bully do this. What would you do?

<p>P</p> <p>Get red in the face? _____</p> <p>Feel very tired? _____</p> <p>Cry? _____</p> <p>Tighten up your muscles? _____</p> <p>Feel your heart pounding? _____</p>	<p>B</p> <p>Call him/her names back? (BAG) _____</p> <p>Tell the teacher? (BAS) _____</p> <p>Run away and hide? (BSM) _____</p> <p>Talk it over with your friends? (BAS) _____</p> <p>Throw something at the bully? (BAG) _____</p>	<p>C</p> <p>Think that you do look funny? (CSB) _____</p> <p>Think that this is unfair? (CPI) _____</p> <p>Tell yourself to stay calm? (CAS) _____</p> <p>Think of how to get even with the bully? (CAG) _____</p> <p>Pretend it is not happening? (CSM) _____</p>	<p>E</p> <p>Feel happy? _____</p> <p>Feel scared? _____</p> <p>Feel frustrated? _____</p> <p>Feel mad? _____</p> <p>Feel sad? _____</p>	<p>Other responses I might have: _____</p> <p>_____</p> <p>_____</p> <p>_____</p> <p>_____</p>
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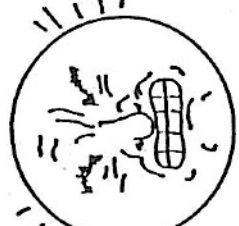
1 _____



2 _____



3 _____



4 _____



5 _____

ANGER RATING (1-5) _____ TOTAL E _____ TOTAL P _____ TOTAL B _____ TOTAL C _____

TOTAL BAG _____ TOTAL BAG + CAG _____

TOTAL BAS _____ TOTAL BAS + CAS _____

TOTAL BSM _____ TOTAL BSM + CSM _____

TOTAL CPI _____ TOTAL CPI _____

TOTAL CSB _____ TOTAL CSB _____

SCORING SUMMARY SHEET

1. OVERALL RESPONSIVITY

Directions: Count total number of items checked off for each story and enter it next to the appropriate story number below. Then add up all boxes for Overall Responsivity score.

Story 1 = ___ Story 2 = ___ Story 3 = ___ Story 4 = ___ Story 5 = ___
 Story 6 = ___ Story 7 = ___ Story 8 = ___ Story 9 = ___ Story 10 = ___
 Total = ___

2. OVERALL ANGER (Overall Level of Self-Reported Anger)

Directions: Enter the overall anger scale rating that child checked off for each story (1-5) and enter it next to the appropriate story number below. Double check that there is only one rating selected for each story. Next add all 10 boxes for Overall score.

Story 1 = ___ Story 2 = ___ Story 3 = ___ Story 4 = ___ Story 5 = ___
 Story 6 = ___ Story 7 = ___ Story 8 = ___ Story 9 = ___ Story 10 = ___
 Overall Anger Rating = ___

3. TOTAL BEHAVIORAL RESPONSES

Directions: Enter the total number of responses checked off in the "B" column for each story.

Story 1 = ___ Story 2 = ___ Story 3 = ___ Story 4 = ___ Story 5 = ___
 Story 6 = ___ Story 7 = ___ Story 8 = ___ Story 9 = ___ Story 10 = ___
 Total Behavioral Responses = ___

4. BEHAVIORAL AGGRESS (BAG)

Directions: Enter the number of responses that were checked off which were followed by (BAG) for each story.

Story 1 = ___ Story 2 = ___ Story 3 = ___ Story 4 = ___ Story 5 = ___
 Story 6 = ___ Story 7 = ___ Story 8 = ___ Story 9 = ___ Story 10 = ___
 Total BAG = ___

5. BEHAVIORAL ASSERT (BAS)

Directions: Enter the number of responses that were checked off and which were followed by (BAS) for each story.

Story 1 = ___ Story 2 = ___ Story 3 = ___ Story 4 = ___ Story 5 = ___
 Story 6 = ___ Story 7 = ___ Story 8 = ___ Story 9 = ___ Story 10 = ___
 Total BAS = ___

6. BEHAVIORAL SUBMIT (BSM)

Directions: Enter the number of responses that were checked off and which were followed by (BSM) for each story.

Story 1 = ___ Story 2 = ___ Story 3 = ___ Story 4 = ___ Story 5 = ___
 Story 6 = ___ Story 7 = ___ Story 8 = ___ Story 9 = ___ Story 10 = ___
 Total BSM = ___

7. TOTAL COGNITIVE RESPONSES

Directions: Enter the total number of responses checked off in the "C" column for each story.

Story 1 = ___ Story 2 = ___ Story 3 = ___ Story 4 = ___ Story 5 = ___
 Story 6 = ___ Story 7 = ___ Story 8 = ___ Story 9 = ___ Story 10 = ___
 Total Cognitive Responses = ___

8. COGNITIVE AGGRESS (CAG)

Directions: Enter the number of responses that were checked off and which were followed by (CAG) for each story.

Story 1 = ___ Story 2 = ___ Story 3 = ___ Story 4 = ___ Story 5 = ___
 Story 6 = ___ Story 7 = ___ Story 8 = ___ Story 9 = ___ Story 10 = ___
 Total CAG = ___

9. COGNITIVE ASSERT (CAS)

Directions: Enter the number of responses which were checked off and which were followed by (CAS) for each story.

Story 1 = ___ Story 2 = ___ Story 3 = ___ Story 4 = ___ Story 5 = ___
 Story 6 = ___ Story 7 = ___ Story 8 = ___ Story 9 = ___ Story 10 = ___
 Total CAS = ___

10. COGNITIVE SUBMIT (CSM)

Directions: Enter the number of responses which were checked off and which were followed by (CSM) for each story.

Story 1 = ___ Story 2 = ___ Story 3 = ___ Story 4 = ___ Story 5 = ___
 Story 6 = ___ Story 7 = ___ Story 8 = ___ Story 9 = ___ Story 10 = ___
 Total CSM = ___

11. COGNITIVE PERCEIVED INJUSTICE (CPI)

Directions: Enter the number of responses which were checked off and which were followed by (CPI) for each story.

Story 1 = ___ Story 2 = ___ Story 3 = ___ Story 4 = ___ Story 5 = ___
 Story 6 = ___ Story 7 = ___ Story 8 = ___ Story 9 = ___ Story 10 = ___
 Total CPI = ___

12. COGNITIVE SELF-BLAAME (CSB)

Directions: Enter the number of responses which were checked off and which were followed by (CSB) for each story.

Story 1 = ___ Story 2 = ___ Story 3 = ___ Story 4 = ___ Story 5 = ___
 Story 6 = ___ Story 7 = ___ Story 8 = ___ Story 9 = ___ Story 10 = ___
 Total CSB = ___

13. EMOTIONAL

Directions: Enter the number of responses which were checked off and which fell under the column heading "E" for each story.

Story 1 = ___ Story 2 = ___ Story 3 = ___ Story 4 = ___ Story 5 = ___
 Story 6 = ___ Story 7 = ___ Story 8 = ___ Story 9 = ___ Story 10 = ___
 Total Emotional Responses = ___

14. PHYSIOLOGICAL

Directions: Enter the number of responses which were checked off and which fell under the column heading "P" for each story.

Story 1 = ___ Story 2 = ___ Story 3 = ___ Story 4 = ___ Story 5 = ___
 Story 6 = ___ Story 7 = ___ Story 8 = ___ Story 9 = ___ Story 10 = ___
 Total Physiological Responses = ___

15. OVERALL AGGRESS

Directions: Add up the number of (BAG) and (CAG) responses for each story.

Story 1 = ___ Story 2 = ___ Story 3 = ___ Story 4 = ___ Story 5 = ___
 Story 6 = ___ Story 7 = ___ Story 8 = ___ Story 9 = ___ Story 10 = ___
 Total Overall Aggress = ___

16. OVERALL ASSERT

Directions: Add up the number of (BAS) and (CAS) responses for each story.

Story 1 = ___ Story 2 = ___ Story 3 = ___ Story 4 = ___ Story 5 = ___
 Story 6 = ___ Story 7 = ___ Story 8 = ___ Story 9 = ___ Story 10 = ___
 Total Overall Assert = ___

17. OVERALL SUBMIT

Directions: Add up the number of (BSM) and (CSM) responses for each story.

Story 1 = ___ Story 2 = ___ Story 3 = ___ Story 4 = ___ Story 5 = ___
 Story 6 = ___ Story 7 = ___ Story 8 = ___ Story 9 = ___ Story 10 = ___
 Total Overall Submit = ___

APPENDIX III
REFINED MULTIDIMENSIONAL SCHOOL ANGER
INVENTORY

Original 31 MSAI items and five trial refinement items (denoted by asterisks)

_____ Anger Experience Subscale Response Scale

(actual scale includes face icons depicting different levels of anger intensity):

1 = I wouldn't be mad at all 2 = I'd be a little angry

3 = I'd be pretty angry 4 = I would be furious

_____ 1. You didn't notice that someone put gum on your seat and you sit on it.

2. At school, two bigger students take something of yours and play "keep away" from you.

3. You tell the teacher that you are not feeling well but she/he does not believe you.

4. Someone in your class acts up, so the whole class has to stay after school.

5. You ask to go to the bathroom and the teacher says, "no."

6. You go to your desk in the morning and find out someone has stolen some of your school supplies.

7. Someone in your class tells the teacher on you for doing something.

8. You get sent to the principal's office when other students are acting worse than you are.

9. The teacher's pet gets to do all of the special errands in class.

10. Somebody cuts in front of you in the lunch line.

11. You are trying to do your work in school and someone bumps your desk on purpose and you mess up.

12. You study really hard for a test and still get a low grade.

13. Somebody calls you a bad name.

_____ Hostility Subscale Response Scale:

1 = Strongly Disagree 2 = Disagree 3 = Agree 4 = Strongly Agree

_____ 14. School is worthless (junk).

15. School is really boring.

16. Grades at school are unfair.

17. There is nothing worth learning at school.

18. Rules at school are stupid.

19. Adults at school don't care about students.

_____ Anger Expression Subscale (DE = Destructive Expression; PC = Positive Coping)

Response Scale (Frequency): 1 = Never 2 = Occasionally 3 = Often 4 = Always

_____ 20. When I'm angry, I'll take it out on whoever is around. (DE)

21. I talk it over with another person when I'm upset. (PC)

22. When I get angry, I think about something else. (PC)





23. When I'm mad, I hate the world. (DE)
24. When I get mad at school, I share my feelings. (PC)
25. When I'm mad, I break things. (DE) Table 2 (continued)
26. Before I explode, I try to understand why this happened to me. (PC)
27. When I'm upset, I calm myself down by reading, writing, painting, or some similar activity. (PC)
28. I get so mad that I want to hurt myself. (DE)
29. If something makes me mad, I try to find something funny about it. (PC)
30. When I'm mad, I let my feelings out by some type of physical activity like running, playing, etc. (PC)
31. If I get mad, I'll throw a tantrum. (DE)
- *32. When I'm angry, I cover it up by smiling or pretending I'm not mad. (PC)
- *33. I punch something when I'm angry. (DE)
- *34. When I get a bad grade, I figure out ways to get back at the teacher. (DE)
- *35. When I'm mad at a teacher, I make jokes in class to get my friends laughing. (DE)
- *36. When I get a bad grade on a test, I rip the test paper into little pieces. (DE)





____ Note. DE = Destructive Expression; PC = Positive Coping; Items are shown in the order that they appear in the MSAI. The items are presented in a machine-readable response sheet. *Items added to refine anger expression subscales

Source: Furlong, M. J., Smith, D. C., & Bates, M. P. (2000). *Refinement of the Multidimensional School Anger Inventory: Further construct validation, extension to female adolescents, and preliminary norms*. Retrieved from <http://education.ucsb.edu/school-psychology/MSAI/PDF/furlong-smith-bates-norms.pdf>

Your Age (years):	10	11	12	13	14	15	16	17	18
Your Sex:	Male				Female				
Grade (Year or Level) in School:	5	6	7	8	9	10	11	12	
Name of Your School:									

These pages ask about some of the feelings, ideas, and behaviors you may have at school. Respond by circling the number that best shows your answer. Remember, there are no right or wrong answers.

If these things happened to you AT SCHOOL, how mad (angry) would you be?				
1. You didn't notice that someone put gum on your seat and you sat on it.	I would not be mad at all	I would be a little angry	I would be pretty angry	I would be furious
2. At school, two bigger students take something of yours and play "keep away" from you (stop you from getting it back by throwing it to each other).	I would not be mad at all	I would be a little angry	I would be pretty angry	I would be furious
3. You tell the teacher that you are not feeling well but she or he does not believe you.	I would not be mad at all	I would be a little angry	I would be pretty angry	I would be furious
4. Someone in your class acts up (behaves badly), so your whole class has to stay after school.	I would not be mad at all	I would be a little angry	I would be pretty angry	I would be furious
5. You ask to go to the bathroom (toilet) and the teacher says "no."	I would not be mad at all	I would be a little angry	I would be pretty angry	I would be furious
6. You go to your desk in the morning and find out someone has stolen some of your school supplies.	I would not be mad at all	I would be a little angry	I would be pretty angry	I would be furious
7. Someone in your class tells the teacher on you for doing something.	I would not be mad at all	I would be a little angry	I would be pretty angry	I would be furious
8. You get sent to the principal's office when other students are acting worse than you are.	I would not be mad at all	I would be a little angry	I would be pretty angry	I would be furious

If these things happened to you AT SCHOOL , how mad (angry) would you be?				
9. The "teacher's pet" (favorite student) gets to do all of the errands or special jobs in class.	I would not be mad at all	I would be a little angry	I would be pretty angry	I would be furious
10. Somebody cuts in front of you in the lunch line (in the canteen line at lunch).	I would not be mad at all	I would be a little angry	I would be pretty angry	I would be furious
11. You are trying to do your work in school and someone bumps your desk on purpose and you mess up (make a mistake).	I would not be mad at all	I would be a little angry	I would be pretty angry	I would be furious
12. You study hard for a test and still get a low grade.	I would not be mad at all	I would be a little angry	I would be pretty angry	I would be furious
13. Somebody calls you a bad name.	I would not be mad at all	I would be a little angry	I would be pretty angry	I would be furious

How much do you disagree or agree with these ideas?

14. School is worthless (junk, waste of my time).	Strongly Disagree	Disagree	Agree	Strongly Agree
15. School is really boring.	Strongly Disagree	Disagree	Agree	Strongly Agree
16. Grades at school are unfair.	Strongly Disagree	Disagree	Agree	Strongly Agree
17. There is nothing worth learning at school.	Strongly Disagree	Disagree	Agree	Strongly Agree
18. Rules at school are stupid.	Strongly Disagree	Disagree	Agree	Strongly Agree
19. Adults at school do not care about students.	Strongly Disagree	Disagree	Agree	Strongly Agree

When you get mad (angry) at school, what do you do?

20. When I'm angry, I'll take it out on whoever is around.	Never	Occasionally (Sometimes)	Often	Always
21. When I'm mad (angry), I hate the world.	Never	Occasionally (Sometimes)	Often	Always
22. When I'm mad (angry) I break things.	Never	Occasionally (Sometimes)	Often	Always
23. I get so mad (angry) that I want to hurt myself.	Never	Occasionally (Sometimes)	Often	Always
24. If I get mad (angry), I'll throw a tantrum. (scream or go on the rampage).	Never	Occasionally (Sometimes)	Often	Always
25. I punch something when I'm angry.	Never	Occasionally (Sometimes)	Often	Always
26. When I get a bad grade, I figure out ways to get back at the teacher.	Never	Occasionally (Sometimes)	Often	Always
27. When I'm mad at a teacher, I make jokes in class to get my friends laughing.	Never	Occasionally (Sometimes)	Often	Always
28. When I get a bad grade on a test, I rip the test paper into little pieces.	Never	Occasionally (Sometimes)	Often	Always

How do you try to calm down when you get mad (angry) at school?				
	Never	Occasionally (Sometimes)	Often	Always
29. I talk it over with another person when I'm upset	Never	Occasionally (Sometimes)	Often	Always
30. When I get mad at school, I share my feelings.	Never	Occasionally (Sometimes)	Often	Always
31. When I get angry, I think about something else	Never	Occasionally (Sometimes)	Often	Always
32. Before I explode, I try to understand why this happened to me.	Never	Occasionally (Sometimes)	Often	Always
33. When I'm upset, I calm myself down by reading, writing, painting, or some similar activity.	Never	Occasionally (Sometimes)	Often	Always
34. If something makes me mad, I try to find something funny about it.	Never	Occasionally (Sometimes)	Often	Always
35. When I'm mad, I let my feelings out by some type of physical activity like running or playing.	Never	Occasionally (Sometimes)	Often	Always
36. When I'm angry, I cover it up by smiling or pretending I'm not mad.	Never	Occasionally (Sometimes)	Often	Always

When you get mad (angry) at school, what has helped you the best to calm down?

What could teachers and others at school to help you when you get really frustrated or angry?

APPENDIX IV

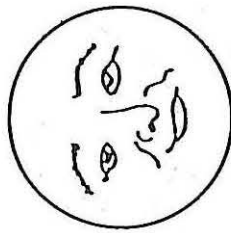
ADAPTED CHILDREN'S ANGER RESPONSE CHECKLIST

ADAPTED - CHILDREN'S ANGER RESPONSE CHECKLIST*

(STORIES 1-10)

Instructions: Read the following stories and check off all the possible responses you might have in these situations. Remember you can check off as many or as few responses as you feel you might have in these situations. There is also an area marked "other" where you can put responses that you might have but are not listed on the page. Then check off how angry you would be next to the face that matches how you would feel.

OVERALL ANGER RESPONSE RATING KEY - Only pick one!



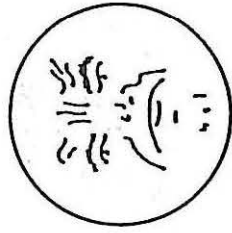
1 _____

1. I'm not angry, that situation doesn't bother me at all. I don't know why it would bother someone.



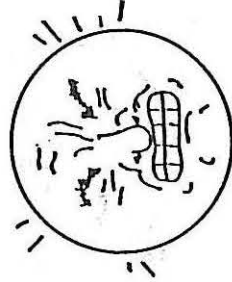
2 _____

2. That situation would bother me a little, but not enough to get me angry.



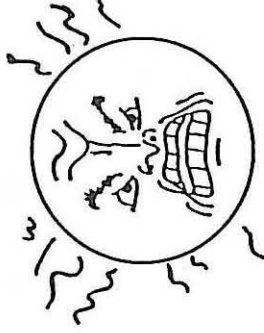
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3. I'm angry, but I think I will be able to calm myself down real soon.



4 _____

4. I'm really angry and it's going to take a lot of effort to calm myself down, but I think I will calm down.



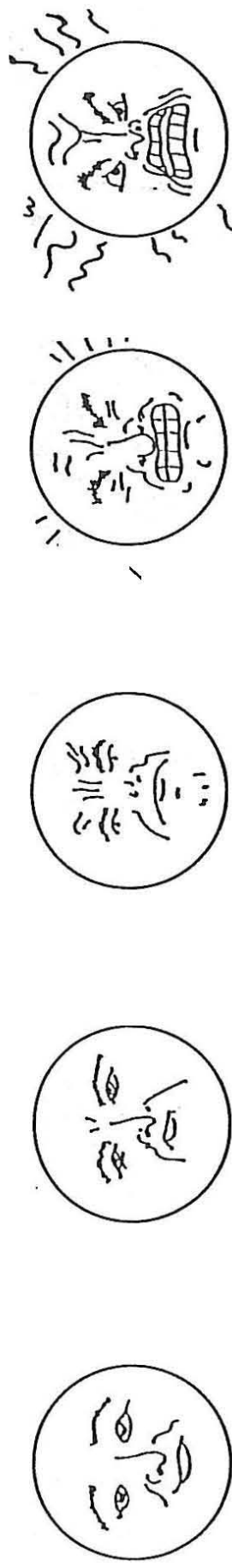
5 _____

5. I can't stand it! I'm very, very angry and I feel like doing something about it right now, like maybe really hurting that person or destroying that thing.

STORY #1

You got a brand-new present for your birthday. It's your favorite present. One of the other kids on the street takes it and breaks it while playing with it. What would you do?

<p><u>C</u></p> <p>___ Think it over and decide on a way to handle it? (CAS)</p> <p>___ Tell yourself to forget it? (CSM)</p> <p>___ Think that you hate everybody? (CAG)</p> <p>___ Think that it's your fault? (CSB)</p> <p>___ Think that it's unfair? (CPI)</p>	<p><u>P</u></p> <p>___ Get red in the face?</p> <p>___ Start breathing fast?</p> <p>___ Get hot and sweaty?</p> <p>___ Tighten up your muscles?</p> <p>___ Cry?</p>	<p><u>E</u></p> <p>___ Feel sad?</p> <p>___ Feel mad?</p> <p>___ Feel hurt?</p> <p>___ Feel afraid?</p> <p>___ Feel happy?</p>	<p><u>B</u></p> <p>___ Hit or push somebody? (BAG)</p> <p>___ Keep it to your self? (BSM)</p> <p>___ Run away and hide? (BSM)</p> <p>___ Make a mean face? (BAG)</p> <p>___ Tell an adult? (BAS)</p>	<p>Other responses I might have:</p> <p>_____</p> <p>_____</p> <p>_____</p> <p>_____</p> <p>_____</p>
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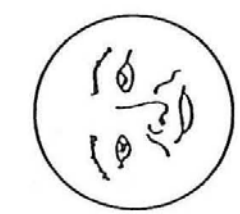


1 _____	2 _____	3 _____	4 _____	5 _____
ANGER RATING (1-5) _____	TOTAL E _____	TOTAL P _____	TOTAL B _____	TOTAL C _____
	TOTAL BAG _____	TOTAL BAS _____	TOTAL BSM _____	TOTAL CAG _____
	TOTAL CAS _____	TOTAL CSM _____	TOTAL CPI _____	TOTAL CSB _____
	TOTAL BAG + CAG _____	TOTAL BAS + CAS _____	TOTAL BSM + CSM _____	

STORY #2

Your parent is very upset and angry because your teacher called. You have been accused of copying somebody's homework. You didn't copy it. What would you do?

<u>C</u>	<u>E</u>	<u>B</u>	<u>P</u>	Other responses I might have:
<input type="checkbox"/> Think that you were wrong? (CSB)	<input type="checkbox"/> Feel discouraged?	<input type="checkbox"/> Yell or scream? (BAG)	<input type="checkbox"/> Cry?	_____
<input type="checkbox"/> Think that it isn't fair? (CPT)	<input type="checkbox"/> Feel scared?	<input type="checkbox"/> Refuse to talk to anyone? (BSM)	<input type="checkbox"/> Get pains in your stomach?	_____
<input type="checkbox"/> Think about how to get back? (CAG)	<input type="checkbox"/> Feel angry?	<input type="checkbox"/> Throw something? (BAG)	<input type="checkbox"/> Start breathing fast?	_____
<input type="checkbox"/> Think it over and decide on a way to handle it? (CAS)	<input type="checkbox"/> Feel sad?	<input type="checkbox"/> Talk to your parents about it? (BAS)	<input type="checkbox"/> Get hot and sweaty?	_____
<input type="checkbox"/> Think you don't care because nobody will believe you anyway? (CSM)	<input type="checkbox"/> Feel hurt?	<input type="checkbox"/> Talk it out with other kids? (BAS)	<input type="checkbox"/> Feel your heart racing?	_____



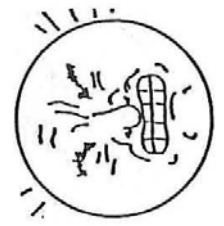
1 _____



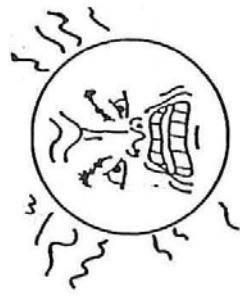
2 _____



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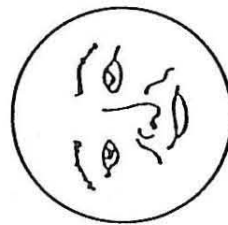
5 _____

ANGER RATING (1-5) _____	TOTAL E _____	TOTAL P _____	TOTAL B _____	TOTAL C _____	TOTAL BAG+ CAG _____
			TOTAL BAG _____	TOTAL CAG _____	TOTAL BAS+ CAS _____
			TOTAL BAS _____	TOTAL CAS _____	TOTAL BSM+ CSM _____
			TOTAL BSM _____	TOTAL CSM _____	TOTAL CPI _____
				TOTAL CPI _____	TOTAL CSB _____

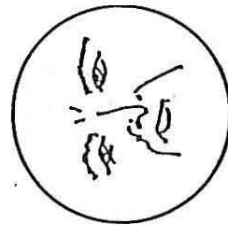
STORY #3

Your team would win if you scored the next point. You try your best but you miss and the other team wins. What would you do?

<p>E</p> <p>___ Feel scared?</p> <p>___ Feel hurt?</p> <p>___ Feel angry?</p> <p>___ Feel happy?</p> <p>___ Feel embarrassed?</p>	<p>C</p>	<p>___ Think that you hate yourself? (CSB)</p> <p>___ Think about how to get even? (CAG)</p> <p>___ Think that it's unfair? (CPI)</p> <p>___ Tell yourself you tried your best? (CAS)</p> <p>___ Tell yourself you don't care? (CSM)</p>	<p>P</p>	<p>___ Feel your heart pounding/ beating?</p> <p>___ Feel very tired?</p> <p>___ Get red in the face?</p> <p>___ Tighten up your fists?</p> <p>___ Cry?</p>	<p>B</p>	<p>___ Throw something? (BAG)</p> <p>___ Run away and hide? (BSM)</p> <p>___ Refuse to talk to anyone? (BSM)</p> <p>___ Talk to your teammates or coach about it? (BAS)</p> <p>___ Yell at other team? (BAG)</p>	<p>Other responses I might have:</p> <p>_____</p> <p>_____</p> <p>_____</p> <p>_____</p> <p>_____</p>
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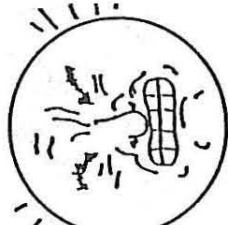
1 _____



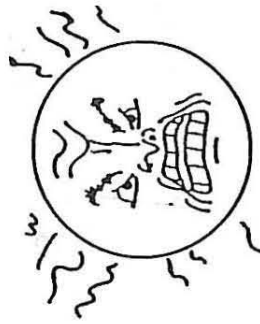
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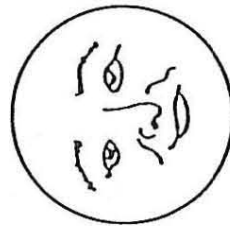
ANGER RATING (1-5) _____

TOTAL E _____	TOTAL P _____	TOTAL B _____	TOTAL C _____
TOTAL BAG _____	TOTAL BAG _____	TOTAL BAG _____	TOTAL BAG+ CAG _____
TOTAL BAS _____	TOTAL BAS _____	TOTAL BAS _____	TOTAL BAS+ CAS _____
TOTAL BSM _____	TOTAL BSM _____	TOTAL BSM _____	TOTAL BSM+ CSM _____
TOTAL CPI _____	TOTAL CPI _____	TOTAL CPI _____	TOTAL CPI _____
TOTAL CSB _____	TOTAL CSB _____	TOTAL CSB _____	TOTAL CSB _____

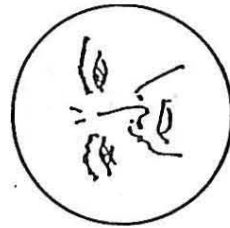
STORY #4

You told your best friend your best secret but your best friend told the class gossip. What would you do?

<u>C</u>	<u>E</u>	<u>P</u>	<u>B</u>
<input type="checkbox"/> Think that you deserved what happened? (CSB)	<input type="checkbox"/> Feel sad?	<input type="checkbox"/> Get hot and sweaty?	<input type="checkbox"/> Ignore what happened? (BSM)
<input type="checkbox"/> Think that you hate that friend? (CAG)	<input type="checkbox"/> Feel hurt?	<input type="checkbox"/> Get a pain in your stomach?	<input type="checkbox"/> Yell or scream? (BAG)
<input type="checkbox"/> Think that you will keep your secrets to yourself next time? (CAS)	<input type="checkbox"/> Feel like crying?	<input type="checkbox"/> Start breathing fast?	<input type="checkbox"/> Stay calm and ask best friend what happened? (BAS)
<input type="checkbox"/> Think it's unfair? (CPI)	<input type="checkbox"/> Feel angry?	<input type="checkbox"/> Get cold hands?	<input type="checkbox"/> Talk about it with someone else? (BAS)
<input type="checkbox"/> Tell yourself that it doesn't matter? (CSM)		<input type="checkbox"/> Feel very tired?	<input type="checkbox"/> Push or kick your friend? (BAG)
			Other responses I might have: _____



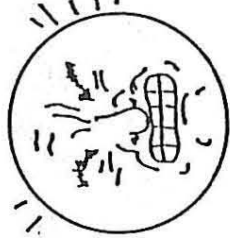
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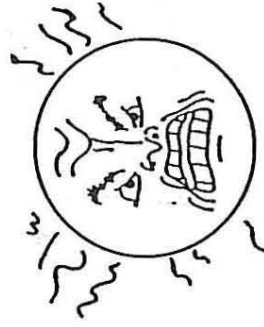
2 _____



3 _____



4 _____






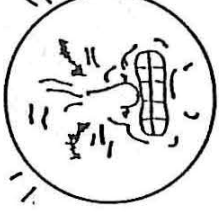
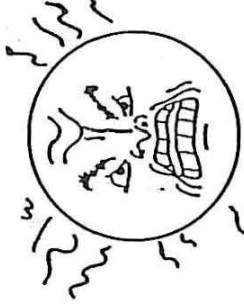
5 _____

ANGER RATING (1-5) _____	TOTAL E _____	TOTAL P _____	TOTAL B _____	TOTAL C _____
	TOTAL BAG _____	TOTAL CAS _____	TOTAL BSM _____	TOTAL CAG _____
	TOTAL BSM _____	TOTAL CPI _____	TOTAL CSB _____	TOTAL BAS + CAS _____
				TOTAL BSM + CSM _____
				TOTAL BAG + CAG _____

STORY #5

You did all your chores because your parent told you that when you finished you could go to visit your friend. When it is time to go, your parent tells you that it is too late and you can't go. What would you do?

<u>P</u>	<u>C</u>	<u>B</u>	<u>E</u>	Other responses I might have:
_____	_____	_____	_____	_____
Get red in the face?	Think that parent is unfair? (CPI)	Throw something? (BAG)	Feel happy?	_____
_____	_____	_____	_____	_____
Cry?	Think about how to get parent to change his/her mind? (CAS)	Run out of the room? (BSM)	Feel scared?	_____
_____	_____	_____	_____	_____
Get hot and sweaty?	Think about taking revenge from parents? (CAG)	Refuse to talk? (BSM)	Feel mad?	_____
_____	_____	_____	_____	_____
Tighten up your muscles?	Think that it's your own fault? (CSB)	Try to talk it over with parent? (BAS)	Feel hurt?	_____
_____	_____	_____	_____	_____
Feel your heart pounding?	Go to room and pretend it didn't happen? (CSM)	Call friend and make plans to visit on the next day? (BAS)	Feel frustrated?	_____
_____	_____	_____	_____	_____
1	2	3	4	5

				
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ANGER RATING (1-5) _____	TOTAL E _____	TOTAL P _____	TOTAL B _____	TOTAL C _____
	TOTAL BAG _____	TOTAL CAS _____	TOTAL BSM _____	TOTAL CAG _____
	TOTAL BAS _____	TOTAL CSM _____	TOTAL CPI _____	TOTAL BAS + CAS _____
		TOTAL CSB _____		TOTAL BSM + CSM _____
				TOTAL CSB _____

STORY #6

You are having trouble with your homework and ask your parent for help. The third time you ask, your parent yells at you to stop bothering him or her. What would you do?

B

- ___ Yell or scream? (BAG)
- ___ Run away and hide? (BSM)
- ___ Try to talk about it with someone? (BAS)
- ___ Do something else and try to forget what happened? (BSM)
- ___ Call another kid in your class to ask about homework? (BAS)

E

- ___ Feel embarrassed?
- ___ Feel sad?
- ___ Feel happy?
- ___ feel *angry*?
- ___ Feel nervous?

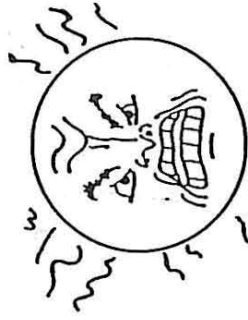
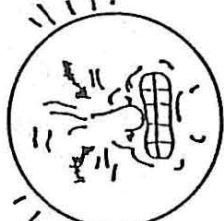
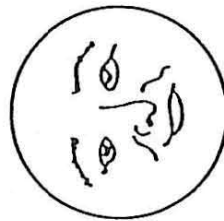
P

- ___ Cry?
- ___ Get red in the face?
- ___ Tighten up your muscles?
- ___ Feel very tired?
- ___ Feel your heart pounding/beating?

C

- ___ Think about how mean your parent is to you? (CPI)
- ___ Think about other ways to get help? (CAS)
- ___ Tell yourself to forget it? (CSM)
- ___ Think that you are wrong? (CSB)
- ___ Think that you hate your parent? (CAG)

Other responses
might have:



1

2

3

4

5

ANGER RATING (1-5) _____

TOTAL E _____

TOTAL P _____

TOTAL B _____

TOTAL C _____

TOTAL BAG _____

TOTAL CAS _____

TOTAL CPI _____

TOTAL CSB _____

TOTAL BAG+ CAG _____

TOTAL BAS+ CAS _____

TOTAL BSM+ CSM _____

TOTAL BSM+ CAS _____

TOTAL BSM+ CSM _____

TOTAL CPI _____

TOTAL CSB _____

STORY #7

You are playing with a friend and your friend breaks something accidentally. Your friend blames you for it. What would you do?

<u>C</u>	<u>E</u>	<u>B</u>	<u>P</u>	<u>Other responses</u>
_____ Think things through before reacting? (CAS)	_____ Feel sad? •	_____ Run away and hide? (BSM)	_____ Feel so sick that your stomach aches?	_____
_____ Think people always blame you for everything? (CPI)	_____ Feel happy?	_____ Tell an adult what happened? (BAS)	_____ Feel cold?	_____
_____ Think about how to get back at your friend? (CAG)	_____ Feel nervous?	_____ Talk it over with your friend? (BAS)	_____ Feel your heart pounding/beating?	_____
_____ Tell yourself to forget it? (CSM)	_____ Feel angry?	_____ Yell at your friend? (BAG)	_____ Start breathing fast?	_____
_____ Think that you are to blame? (CSB)	_____ Feel hurt?	_____ Ignore what happened? (BSM)	_____ Tighten up your muscles?	_____



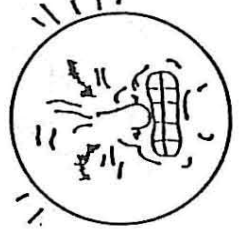
1 _____



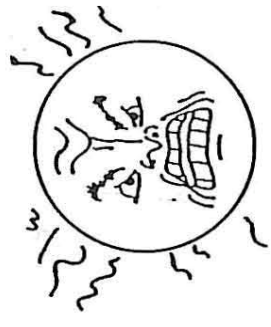
2 _____



3 _____



4 _____



5 _____

ANGER RATING (1-5) _____ TOTAL E _____ TOTAL P _____ TOTAL B _____ TOTAL C _____

_____ TOTAL BAG _____ TOTAL BAG + CAG _____

_____ TOTAL BAS _____ TOTAL BAS + CAS _____

_____ TOTAL CSM _____ TOTAL BSM + CSM _____

_____ TOTAL CPI _____ TOTAL CSB _____

STORY #8

You hardly ever watch TV but while you are watching your one favorite TV program, your parent starts to nag you a lot to clean up your room. Finally, your parent comes in and shuts off the TV and sends you to your room. What would you do?

<u>E</u>	<u>P</u>	<u>B</u>	<u>C</u>	Other responses I might have:
_____ Feel happy?	_____ Tighten up your muscles?	_____ Refuse to move? (BAG)	_____ Think that you hate your parent? (CAG)	_____
_____ Feel nervous?	_____ Cry?	_____ Runaway	_____ Think that it's unfair? (CPI)	_____
_____ Feel mad?	_____ Feel your heart pounding/beating?	_____ and hide? (BSM)	_____ Think that your parent is right? (CSB)	_____
_____ Feel hurt?	_____ Feel very tired?	_____ Yell and scream? (BAG)	_____ Think about how to solve the problem? (CAS)	_____
_____ Feel disgusted/ grossed out?	_____ Get hot and sweaty?	_____ Talk it over with your parent? (BAS)	_____ Think that you don't care? (CSM)	_____
	_____	_____ Go to your room quietly and try and forget about it? (BSM)		



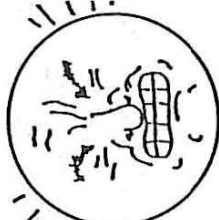
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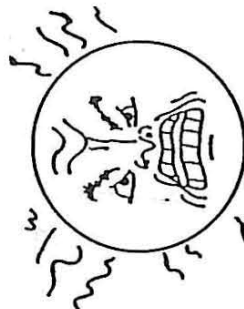
2 _____



3 _____



4 _____




5 _____

ANGER RATING (1-5) _____	TOTAL E _____	TOTAL P _____	TOTAL B _____	TOTAL C _____
	TOTAL BAG _____	TOTAL CAS _____	TOTAL BSM _____	TOTAL CAG _____
	TOTAL BAS _____	TOTAL CSM _____	TOTAL CPI _____	TOTAL BAS+ CAS _____
	TOTAL CSB _____	TOTAL CSM+ CSM _____	TOTAL CSB _____	TOTAL BSM+ CSM _____


STORY #9

You have been working on homework that is taking you a long time to finish. You are almost done when you spill water all over it accidentally. What would you do?


<u>P</u>	<u>C</u>	<u>B</u>	<u>E</u>	
_____ Feel hot and sweaty?	_____ Think it's not fair? (CPI)	_____ Tell an adult? (BAS)	_____ Feel mad?	_____ Other responses I might have: _____
_____ Start breathing fast?	_____ Think it is your own fault? (CSB)	_____ Hit or kick something? (BAG)	_____ Feel afraid?	_____
_____ Get pains in your stomach?	_____ Tell yourself to stay calm? (CAS)	_____ Yell or scream? (BAG)	_____ Feel embarrassed?	_____
_____ Cry?	_____ Think that you hate homework? (CAG)	_____ Ask for help? (BAS)	_____ Feel nervous?	_____
_____ Tighten up your muscles?	_____ Think that you were going to get a bad grade anyway? (CSM)	_____ Turn it in as it is? (BSM)	_____ Feel disgusted?	_____



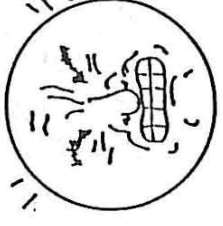
1 _____




2 _____



3 _____



4 _____



5 _____

ANGER RATING (1-5) _____

TOTAL E _____	TOTAL P _____	TOTAL B _____	TOTAL C _____
TOTAL E _____	TOTAL P _____	TOTAL BAG _____	TOTAL CAG _____
TOTAL E _____	TOTAL P _____	TOTAL BAS _____	TOTAL CAS _____
TOTAL E _____	TOTAL P _____	TOTAL BSM _____	TOTAL CSM _____
TOTAL E _____	TOTAL P _____	TOTAL CPI _____	TOTAL CSI _____
TOTAL E _____	TOTAL P _____	TOTAL CSB _____	TOTAL CSB _____

STORY #10

For no reason at all, the class bully starts calling you names and making fun of the way you look. Your friends are around and hear the class bully do this. What would you do?

P

- _____ Get red in the face?
- _____ Feel very tired?
- _____ Cry?
- _____ Tighten up your muscles?
- _____ Feel your heart pounding?

B

- _____ Call him/her names back? (BAG)
- _____ Tell the teacher? (BAS)
- _____ Run away and hide? (BSM)
- _____ Talk it over with your friends? (BAS)
- _____ Throw something at the bully? (BAG)

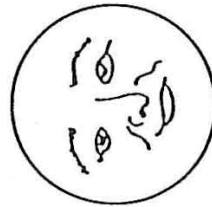
C

- _____ Think that you do look funny? (CSB)
- _____ Think that this is unfair? (CPI)
- _____ Tell yourself to stay calm? (CAS)
- _____ Think of how to get even with the bully? (CAG)
- _____ Pretend it is not happening? (CSM)

E

- _____ Feel happy?
- _____ Feel scared?
- _____ Feel discouraged?
- _____ Feel mad?
- _____ Feel sad?

Other responses
I might have:



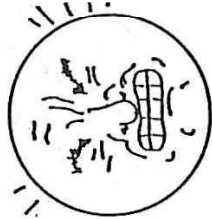
1 _____



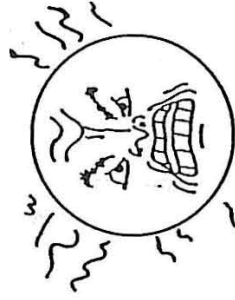
2 _____



3 _____



4 _____



5 _____

ANGER RATING (1-5)

TOTAL P _____

TOTAL E _____

TOTAL B _____

TOTAL C _____

TOTAL BAG+ CAG _____

TOTAL BAS _____

TOTAL CAS _____

TOTAL CSM _____

TOTAL BSM+ CSM _____

TOTAL CPI _____

TOTAL CSB _____

TOTAL BSM+ CAS _____

TOTAL BSM+ CSM _____

TOTAL BAS+ CAS _____

TOTAL BSM+ CSM _____

SCORING SUMMARY SHEET

1. **OVERALL RESPONSIVITY**
 Directions: Count the number of items checked off for each story and enter it next to the appropriate story number below.
 Enter the number of responses which were followed by (CAS) for each story.
 Story 1 _____ Story 2 _____ Story 3 _____ Story 4 _____ Story 5 _____
 Story 6 _____ Story 7 _____ Story 8 _____ Story 9 _____ Story 10 _____
 Total CAS _____
2. **OVERALL ANGER (Overall Level of Self-Reported Anger)**
 Directions: Enter the overall anger rating that child checked off for each story (1-5) and enter it next to the appropriate story number below. Double check that there is only one rating selected for each story. Read and add all 10 boxes for Overall score.
 Story 1 _____ Story 2 _____ Story 3 _____ Story 4 _____ Story 5 _____
 Story 6 _____ Story 7 _____ Story 8 _____ Story 9 _____ Story 10 _____
 Total Anger Rating _____
3. **TOTAL BEHAVIORAL RESPONSES**
 Directions: Enter the total number of responses checked off in the 'B' column for each story.
 Story 1 _____ Story 2 _____ Story 3 _____ Story 4 _____ Story 5 _____
 Story 6 _____ Story 7 _____ Story 8 _____ Story 9 _____ Story 10 _____
 Total Behavioral Responses _____
4. **BEHAVIORAL AGGRESS (BAS)**
 Directions: Enter the number of responses that were checked off which were followed by (BAS) for each story.
 Story 1 _____ Story 2 _____ Story 3 _____ Story 4 _____ Story 5 _____
 Story 6 _____ Story 7 _____ Story 8 _____ Story 9 _____ Story 10 _____
 Total BAS _____
5. **BEHAVIORAL SUBMIT (BAS)**
 Directions: Enter the number of responses that were checked off and which were followed by (BAS) for each story.
 Story 1 _____ Story 2 _____ Story 3 _____ Story 4 _____ Story 5 _____
 Story 6 _____ Story 7 _____ Story 8 _____ Story 9 _____ Story 10 _____
 Total BAS _____
6. **BEHAVIORAL SUBMIT (BSM)**
 Directions: Enter the number of responses that were checked off and which were followed by (BSM) for each story.
 Story 1 _____ Story 2 _____ Story 3 _____ Story 4 _____ Story 5 _____
 Story 6 _____ Story 7 _____ Story 8 _____ Story 9 _____ Story 10 _____
 Total BSM _____
7. **TOTAL COGNITIVE RESPONSES**
 Directions: Enter the total number of responses checked off in the 'C' column for each story.
 Story 1 _____ Story 2 _____ Story 3 _____ Story 4 _____ Story 5 _____
 Story 6 _____ Story 7 _____ Story 8 _____ Story 9 _____ Story 10 _____
 Total Cognitive Responses _____
8. **COGNITIVE AGGRESS (CAG)**
 Directions: Enter the number of responses that were checked off and which were followed by (CAG) for each story.
 Story 1 _____ Story 2 _____ Story 3 _____ Story 4 _____ Story 5 _____
 Story 6 _____ Story 7 _____ Story 8 _____ Story 9 _____ Story 10 _____
 Total CAG _____
9. **COGNITIVE ASSESS (CAS)**
 Directions: Enter the number of responses which were checked off and which were followed by (CAS) for each story.
 Story 1 _____ Story 2 _____ Story 3 _____ Story 4 _____ Story 5 _____
 Story 6 _____ Story 7 _____ Story 8 _____ Story 9 _____ Story 10 _____
 Total CAS _____
10. **COGNITIVE SUBMIT (CSM)**
 Directions: Enter the number of responses which were checked off and which were followed by (CSM) for each story.
 Story 1 _____ Story 2 _____ Story 3 _____ Story 4 _____ Story 5 _____
 Story 6 _____ Story 7 _____ Story 8 _____ Story 9 _____ Story 10 _____
 Total CSM _____
11. **COGNITIVE PERCEIVED INJUSTICE (CPI)**
 Directions: Enter the number of responses which were checked off and which were followed by (CPI) for each story.
 Story 1 _____ Story 2 _____ Story 3 _____ Story 4 _____ Story 5 _____
 Story 6 _____ Story 7 _____ Story 8 _____ Story 9 _____ Story 10 _____
 Total CPI _____
12. **COGNITIVE SELF-BLAME (CSB)**
 Directions: Enter the number of responses which were checked off and which were followed by (CSB) for each story.
 Story 1 _____ Story 2 _____ Story 3 _____ Story 4 _____ Story 5 _____
 Story 6 _____ Story 7 _____ Story 8 _____ Story 9 _____ Story 10 _____
 Total CSB _____
13. **EMOTIONAL**
 Directions: Enter the number of responses which were checked off and which fell under the column heading "E" for each story.
 Story 1 _____ Story 2 _____ Story 3 _____ Story 4 _____ Story 5 _____
 Story 6 _____ Story 7 _____ Story 8 _____ Story 9 _____ Story 10 _____
 Total Emotional Responses _____
14. **PHYSIOLOGICAL**
 Directions: Enter the number of responses which were checked off and which fell under the column heading "P" for each story.
 Story 1 _____ Story 2 _____ Story 3 _____ Story 4 _____ Story 5 _____
 Story 6 _____ Story 7 _____ Story 8 _____ Story 9 _____ Story 10 _____
 Total Physiological Responses _____
15. **OVERALL AGGRESS**
 Directions: Add up the number of (BAS) and (CAG) responses for each story.
 Story 1 _____ Story 2 _____ Story 3 _____ Story 4 _____ Story 5 _____
 Story 6 _____ Story 7 _____ Story 8 _____ Story 9 _____ Story 10 _____
 Total Overall Aggress _____
16. **OVERALL ASSESS**
 Directions: Add up the number of (CAS) and (CSM) responses for each story.
 Story 1 _____ Story 2 _____ Story 3 _____ Story 4 _____ Story 5 _____
 Story 6 _____ Story 7 _____ Story 8 _____ Story 9 _____ Story 10 _____
 Total Overall Assess _____
17. **OVERALL SUBMIT**
 Directions: Add up the number of (BSM) and (CSM) responses for each story.
 Story 1 _____ Story 2 _____ Story 3 _____ Story 4 _____ Story 5 _____
 Story 6 _____ Story 7 _____ Story 8 _____ Story 9 _____ Story 10 _____
 Total Overall Submit _____

APPENDIX V
ABRIDGED MULTIDIMENSIONAL SCHOOL ANGER
INVENTORY

Adapted MSAI

page 1

Your Age (years):	7	8	9	10	11	12
Grade (Year or Level) in School:	4	5	6			

These pages ask about some of the feelings, ideas, and behaviors you may have at school. Respond by circling the number that best shows your answer. Remember, there are no right or wrong answers.

How much do you disagree or agree with these ideas?						
	Strongly Disagree	Disagree	Agree	Strongly Agree		
1. School is worthless (junk, waste of my time).	Strongly Disagree	Disagree	Agree	Strongly Agree		
2. School is really boring.	Strongly Disagree	Disagree	Agree	Strongly Agree		
3. Grades at school are unfair.	Strongly Disagree	Disagree	Agree	Strongly Agree		
4. There is nothing worth learning at school.	Strongly Disagree	Disagree	Agree	Strongly Agree		
5. Rules at school are stupid.	Strongly Disagree	Disagree	Agree	Strongly Agree		
6. Adults at school do not care about students.	Strongly Disagree	Disagree	Agree	Strongly Agree		

When you get mad (angry) at school, what do you do?					
	Never	Occasionally (Sometimes)	Often	Always	
7. When I'm angry, I'll hurt whoever is around.	Never	Occasionally (Sometimes)	Often	Always	
8. When I'm mad (angry), I hate the world.	Never	Occasionally (Sometimes)	Often	Always	
9. When I'm mad (angry) I break things.	Never	Occasionally (Sometimes)	Often	Always	
10. I get so mad (angry) that I want to hurt myself.	Never	Occasionally (Sometimes)	Often	Always	
11. If I get mad (angry), I'll shout, scream and cry so loud.	Never	Occasionally (Sometimes)	Often	Always	
12. I punch something when I'm angry.	Never	Occasionally (Sometimes)	Often	Always	
13. When I get a bad grade, I figure out ways to get back at the teacher.	Never	Occasionally (Sometimes)	Often	Always	
14. When I'm mad at a teacher, I make jokes in class to get my friends laughing.	Never	Occasionally (Sometimes)	Often	Always	
15. When I get a bad grade on a test, I rip the test paper into little pieces.	Never	Occasionally (Sometimes)	Often	Always	

Adapted MSAI

How do you try to calm down when you get mad (angry) at school?		Never	Occasionally (Sometimes)	Often	Always
16.	I talk it over with another person when I'm upset.	Never	Occasionally (Sometimes)	Often	Always
17.	When I get mad at school, I share my feelings.	Never	Occasionally (Sometimes)	Often	Always
18.	When I get angry, I think about something else.	Never	Occasionally (Sometimes)	Often	Always
19.	Before I explode, I try to understand why this happened to me.	Never	Occasionally (Sometimes)	Often	Always
20.	When I'm upset, I calm myself down by reading, writing, painting, or some similar activity.	Never	Occasionally (Sometimes)	Often	Always
21.	If something makes me mad, I try to find something funny about it.	Never	Occasionally (Sometimes)	Often	Always
22.	When I'm mad, I let my feelings out by some type of physical activity like running or playing.	Never	Occasionally (Sometimes)	Often	Always
23.	When I'm angry, I cover it up by smiling or pretending I'm not mad.	Never	Occasionally (Sometimes)	Often	Always

APPENDIX VI

IRB FORMS (PRINICIPAL'S, PARENTAL CONSENT FORMS
& CHILD'S ORAL ASSENT FORM)



AUB

Department of Education

Study Title: Adaptation and Validation of the Children's Anger Response Checklist for Grade 4, 5, and 6 Lebanese Students

Principal Investigator: Dr. Karma El Hassan

Co-Investigator: Miss Nadine Adhami

Dear principal,

We are requesting your approval to conduct a study in the school under Institutional Review Board (IRB) for human rights regulations. We are asking a group of students to participate in a **research study**. Please read the information below and feel free to ask any questions that you may have.

A. Project Description

1. The purpose of the study is to adapt and validate the Children's Anger Response Checklist (CARC) to the Lebanese population that assesses the four underlying multidimensional components (behavioral, emotional, cognitive, and physiological) of anger in children from grades 4, 5, and 6.
2. This study will be conducted in seven private schools located in Beirut and the Greater Beirut area. This consent is to be signed by the school principals in order to be eligible to participate in the study. As a principal, you will be given a copy of this consent form to keep with you. In each of the seven private schools that will be chosen for this study, only one section from each of the grade levels 4, 5, and 6 will be randomly selected. Since each classroom consists of approximately 25 students, a sample of around 75 students per school is expected. Therefore, the total number of students participating in this study is expected to be 525. For the purpose of having a well validated children's anger assessment tool, we need to have a big sample size that can be representative of the Beirut and Greater Beirut area. It is still an acceptable sample size, in case not all the 25 students per class accept to participate in the study and we end up with approximately 350 to 400 students as a total from all schools. After the school approves to participate, a parental consent form will be distributed to the students in order to be signed. Only students whose parents have signed the parental consent form will be eligible to participate in the study. Also, only students who have given their oral assent will be entitled to participate.

3. In this study, two questionnaires will be distributed by the Co-Investigator to one randomly chosen section from each of the grade levels between grades 4 and 6. The two questionnaires are instruments that assess children's anger based on a multidimensional model i.e. the behavioral, emotional, cognitive and physiological factors of anger. This will take about 60 minutes to complete (approximately one session). After three weeks of administering the two questionnaires, 30 randomly selected students will be targeted from the seven schools to re-administer one of the questionnaires; therefore, a sample of 4 or 5 students per school is expected. This process will take about 20 minutes to complete. The questionnaires will take place in the students' classroom during a session of any subject matter chosen by the administration. Note that the Co-Investigator will be administering the study at all times and in all locations, therefore, no teachers will be present in the classrooms during the administration of the questionnaires.

4. Your school may also be chosen for conducting the pilot study. One of the seven target schools will be randomly selected for pilot testing which will take place before the actual study. One section from each grade level (4, 5, & 6) will be targeted by random selection, however separate from the sections selected for the study. Since each classroom consists of approximately 25 students, a sample of around 75 students is expected. The pilot study is procedurally the same as the actual study.

5. This research is being conducted for the purpose of a Master's thesis study.

B. Risks and Benefits

The participation of students in this study does not involve any physical risk or emotional risk to them beyond the risks of daily life. The benefits of this study include providing researchers, school counselors, and teachers a culturally valid anger assessment tool that is specific for children at a preventative age level. The benefit of having a valid anger assessment tool for grades 4, 5, and 6 is that it can be used by school counselors for preventing inappropriate actions caused by anger at an early stage, therefore, catering for a positive school atmosphere.

C. Confidentiality

If you agree that students from grades 4 to 6 may participate in this research study, the information will be kept confidential. To secure the confidentiality of the responses of students, their names and other identifying information will never be attached to their answers; each student will be given a code. All codes and data will be kept in a locked drawer in a locker room or on a password-protected computer that is kept secure. Data access is limited to the Principal Investigator and the Co-Investigator working directly on this study. All data will be destroyed responsibly after the required retention period, which is usually three years. The students' privacy will be maintained in all written data resulting from this study. Names or other identifying information of the students and of the school will not be used in any reports or presentations.

D. Contact Information

In case of any questions, you may contact Dr. Karma El-Hassan at 01-350000 ext. 3131 or by email: kelhasan@aub.edu.lb or Miss Nadine Adhami at 03- 192196 or by email: nna20@aub.edu.lb or nadine.adhmai@gmail.com. If you feel that your questions have not been answered, you may contact the Institutional Review Board (IRB) for human rights at 01-374374, ext:5445 or by email: irb@aub.edu.lb.

E. Participant rights

Participation in this study is completely voluntary. The school administrators are free to leave the study and ask the students to discontinue participation in this project at any time without penalty. Your decision not to participate will not influence your relationship with AUB in any way. Moreover, students who decide not to participate in the study will stay in the same classroom as the participants do. They will not be given the two questionnaires; instead they will be given time-saver fun activities such as puzzles, riddles, games, etc...

Sincerely,

Karma El Hassan

Associate Professor, Department of Education & Director, Office of Institutional Research and Assessment (OIRA)

Faculty of Arts and Sciences

American University of Beirut

Nadine Adhami

Graduate Student, Department of Education

Faculty of Arts and Sciences

American University of Beirut

I have read and understood the above information. I voluntarily agree for the students of this school to participate in this study.

Name of Principal

Signature of Principal

Date & Time



AUB Social & Behavioural Sciences Parental Permission

Permission for Child to Participate in Research

Study Title: Adaptation and Validation of the Children's Anger Response Checklist for Grade 4, 5, and 6 Lebanese Students

Principal Investigator: Dr. Karma El Hassan

Co- investigator: Nadine Adhami

Description of the study: Your child is invited to participate in a study that aims to adapt and validate the Children's Anger Response Checklist (CARC) to the Lebanese population. This study will allow researchers, and counselors to have a children's anger assessment tool that is valid and assesses the four underlying multidimensional components (behavioral, emotional, cognitive, and physiological) of anger in children from grades 4, 5, and 6. The long term goal of having a valid anger assessment tool for grades 4, 5, and 6 is to be used by school counselors for preventing inappropriate actions caused by anger at an early stage, therefore, catering for a positive school atmosphere. This study will be conducted in seven private schools located in Beirut and the Greater Beirut area. This consent is only applicable to schools that have been approved as a site for the study. In each of the participating seven private schools, only one section from each of the grade levels 4, 5, and 6 will be randomly selected. Since each classroom consists of approximately 25 students, a sample of around 75 students per school is expected. Therefore, the total number of students participating in this study is expected to be 525. After the school approves to participate, a parental consent form will be distributed to the students in order to be signed. Only students whose parents have signed the parental consent form will be eligible to participate in the study. Also, only students who have signed the student assent form will be entitled to participate.

The questionnaire will take place in the students' classroom during a session of any subject matter chosen by the administration. This research is being conducted for the purpose of a Master's thesis study.

This is a permission form for your child for whom you are legal guardian to participate in a research study. It contains important information about this study and what to expect if you decide to permit your child to participate.

A. *Terms of participation:*

1. Your child's participation is **voluntary**.
2. Your child will be involved in the study for one or two sessions (first session is 60 minutes, and second session is about 20 minutes). Your child will be asked to fill out **two** questionnaires that are child-friendly about the factors that influence the anger experience at their age. One questionnaire consists of 10 items and the second questionnaire consists of 23 items. This will be done in your child's classroom in school. The items included in both questionnaires are in the form of short anger-related scenarios along with their corresponding responses. Students will check off the

response/s that best describes them in these situations. Two or three students from each class will be chosen randomly to fill in one of the questionnaires again in a 20 minutes session that is after three weeks from first filling it in.

3. Please note that **your child may leave the study at any time** and therefore can refuse to participate when the questionnaires are administered the first and second time. If you decide to stop your child's participation in the study at any time, there will be **no penalty** to you. Your decision will not affect your future relationship, or that of your child, with AUB. If you are a student or employee at AUB, your decision about whether or not you allow your child to participate in this research will not affect your grades or employment status.
4. Your child's participation in the study does not involve any physical risk or emotional risk beyond the risks of daily life; therefore, the study involves minimal risk.

B. Confidentiality and Maintenance/Disposal of Record

1. The name of your child and other identifying information will **never** be attached to his/her answers.
2. Your child's answers will **not be graded**.
3. Efforts will be made to keep your child's study-related information confidential, which means that nobody else will know about his/her participation.
4. All data from this study will be maintained in a secure locked drawer in a locked office and on a password protected laptop which only the **researchers** have access to. After approximately three years, all data will be responsibly destroyed.
5. No names of individual children will be disclosed in any reports or presentations of this research. Each student will be given a code for identification.
6. The University's ethics committee might audit data.

C. Risks and Benefits

1. There is **no potential risk or harm** in filling out the questionnaires.
2. This study will help in providing school counselors and researchers a valid anger assessment tool for grades 4, 5, and 6 to identify and prevent inappropriate behavioral, emotional, physiological and cognitive factors caused by anger at an early stage, therefore, catering for positive ways of dealing with anger. Hence, by having an anger prevention tool, a more positive atmosphere will be created in schools.
3. If your child chooses, he/she will be given back the results of their questionnaires.
4. **No payment** will be made for your child to participate in this study.

Contacts and Questions:

In case of any questions, you may contact Dr. Karma El-Hassan at 01-350000 ext. 3131 or by email: kelhasan@aub.edu.lb or Miss Nadine Adhami at 03- 192196 or by email: nna20@aub.edu.lb or nadine.adhmai@gmail.com. If you feel that your questions have not been answered, you may contact the Institutional Review Board (IRB) for human rights at 01-374374, ext:5445 or by email: irb@aub.edu.lb.

Signing the consent form

I have read (or someone has read to me) this form and I am aware that I am being asked to give permission for my minor child (or child under my guardianship) to participate in a research study. I have had the opportunity to ask questions and have had them answered to my satisfaction. I voluntarily agree to give permission for my child/children under my guardianship to participate in the administration of the two questionnaires for the first time, and in case they were randomly chosen for the second time, they will fill in one of the questionnaires after three weeks.

I am not giving up any legal rights by signing this form. I will be given a copy of this form.

Printed name of subject

**Printed name of person authorized to give permission for
minor subject/participant**

**Signature of person authorized to give permission for minor
subject/participant (when applicable)**

AM/PM

Relationship to the subject

Date and time



Child Oral Assent Form

(Approximate age 8-12)

Study Title: Adaptation and Validation of the Children's Anger Response Checklist for Grade 4, 5, and 6 Lebanese Students

Principal Investigator: Dr. Karma El Hassan

Co- investigator: Nadine Adhami

You are being asked to be part of a study. A study is done to find more about ideas or issues that interest us. From the study we learn new information that can help us in life. This study is being done as a requirement to graduate and receive a Masters degree. This form will tell you about the study to help you decide whether or not you want to participate. Before you agree to participate, you should ask all the questions that would help you make up your mind. This is not graded and will not affect your academic work, you are free to choose if you want to participate or not. It is okay to say "No" if you don't want to be in the study. If you say "Yes" you can change your mind and quit being in the study at any time without getting in trouble.

Purpose

The purpose of the study is to adapt and validate the Children's Anger Response Checklist so Lebanese students like you who attend grades 4, 5, and 6 can be able to fill it in without finding difficulty. This questionnaire will allow researchers and some school members such as counselors to help find out and understand how each one of you thinks, feels, acts and looks when feeling angry.

Participation

Your parents have already given their permission for you to participate in this study; however it is up to you to decide if you want to be in the study or not. If you decide that you want to be in this study, this is what will happen. You will be asked to fill in two child-friendly anger questionnaires, whereby, one includes 10 items and the second includes 23 items within a 60 minutes session. The items included in both questionnaires are in the form of short anger-related scenarios along with their corresponding responses. You will check off the response/s that best describes you in these situations. Two or three students from each class will be chosen randomly to fill in one of the questionnaires again in a 20 minutes session that is after three weeks from first filling it in. Your answers will not be graded. You may also skip any questions that you do not wish to answer.

You may stop being in the study at any time and therefore can refuse to participate when the questionnaires are administered the first and second time. If you do not wish to participate in the study during administration time, you will not be given the two questionnaires; instead you will be given time-saver fun activities such as puzzles, riddles, games, etc... Your participation in

the study does not involve any physical risk or emotional risk beyond the risks of daily life; therefore, the study involves minimal risk.

Benefit

When you participate in this study, you will help in making this questionnaire easy for Lebanese students or children your age to fill it in. Therefore, it allows researchers and counselors find out and understand how each one of you thinks, feels, acts and looks when feeling angry. In turn, this would benefit you by identifying positive ways to deal with anger. You will not receive any incentives or extra credit for participating in this study. Also, you will not be penalized for not being part of this study.

Confidentiality

Actions will be made to keep your records confidential. To secure the confidentiality of your responses, your name and other identifying information will never be attached to your answers. All your responses will be kept safe and will not be shared with anyone outside the research team. Your privacy will be maintained in all written data resulting from this study. Your name or other identifying information will not be used in the reports.

Risk

Your participation in the study does not involve any physical risk or emotional risk beyond the risks of daily life; therefore, the study involves minimal risk.. Your names will not be included in the study.

Contacts and Questions:

In case of any questions, you may contact Dr. Karma El-Hassan at 01-350000 ext. 3131 or by email: kelhasan@aub.edu.lb or Miss Nadine Adhami at 03- 192196 or by email: nna20@aub.edu.lb or nadine.adhmai@gmail.com. If you feel that your questions have not been answered, you may contact the Institutional Review Board (IRB) for human rights at 01-374374, ext:5445 or by email: irb@aub.edu.lb.

Investigator/Research Staff

I have explained the research to the participants before requesting their oral assent to participate in the administration of the two questionnaires for the first time, and in case they were randomly chosen for the second time, they will fill in one of the questionnaires three weeks later. There

are no blanks in this document. A copy of this form has been given to the participant or his/her representative.

Printed name of person obtaining assent

Signature of person obtaining assent

AM/PM

Date and time

APPENDIX VII

BREAKDOWN OF PILOT & STUDY SAMPLE OF THE 7 SCHOOLS

Schools	Area	Grd 4 students	Drop outs	Grd 5 students	Drop outs	Grd 6 students	Drop outs	Total
Pilot School	2 nd educational area in Beirut	O→22 R→21	1	O→23 R→23	–	O→24 R→23	1	O→69 R→67
School A	Beirut's Semi-close suburbs	O→25 R→24	1	O→21 R→19	2	O→20 R→20	–	O→66 R→63
School B	Southern Suburbs of Beirut	O→24 R→19	5	O→21 R→21	–	O→21 R→20	1	O→66 R→60
School C	2 nd educational area in Beirut	O→31 R→14	17	O→31 R→12	19	O→31 R→10	22	O→93 R→36
School D	2 nd educational area in Beirut	O→22 R→21	1	O→25 R→23	2	O→23 R→23	–	O→70 R→67
School E	3 rd educational area in Beirut	O→31 R→22	9	O→26 R→23	3	O→29 R→29	–	O→86 R→74
School F	Close Northern Suburbs of Beirut	O→18 R→12	6	O→23 R→17	6	O→22 R→12	10	O→63 R→41
School G	1 st educational area in Beirut	O→25 R→25	–	O→20 R→17	3	O→23 R→21	2	O→68 R→63
Total # of study sample		O→176 R→137		O→167 R→132		O→169 R→135		O→512 R→404

*O → Original sample *R → Remaining or targeted sample

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