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THE COMMON BELIEF SCALE FOR STUDENTS: A MEASURE OF RATIONALITY IN CHILDREN

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A MEASURE OF RATIONALITY IN CHILDREN

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This study was designed in an effort to create a measure of rationality in children. To accomplish this, the Common Belief Inventory for Students (CBIS) was developed, and the basic psychometric properties of the scale were investigated. The CBIS was formulated within Ellis's conceptual framework of Rational Behavior Therapy, and specific questions were developed from Ellis's 11 Common Irrational Beliefs (Ellis, 1962). Designed to be useful from the fourth grade to the twelfth grade, the CBIS was constructed to yield a total irrationality score as well as scores for each of the 11 individual irrational ideas.

Subjects taking part in this study included 1,226 fifth, sixth, and seventh grade students from elementary schools in the south central Kentucky area. The subjects ranged in age from nine to 15. The CBIS was administered to all 1,226 students, of which 488 were included in the experimental group and 738 were included in the control group. Students in the experimental group were exposed to one hour of RBT each week for six weeks, and at the

conclusion of the six sessions, the posttest was administered. The control group was also given the posttest, but these students did not engage in an RBT program.

Means, standard deviations, and item-total correlations were computed for each item on the CBIS, as well as for each of the 11 irrational belief components. The reliability of the CBIS and each of its belief components was investigated by the Guttman and test-retest procedures. The predictive validity of the instrument was investigated by comparing the changes experienced in the experimental group versus those experienced in the control group. Structural validity of the total test and for each belief component was determined by a factor analysis procedure. Raw scores for the total test and for each belief were transformed into standard score units.

The results indicated that the majority of the items were reliable indicators of the total test score and for the belief scores. The belief components were also found to be reliable indicators of the total test score. The reliability of the CBIS was maintained at an adequate level. The predictive validity of the CBIS indicated that the instrument was sensitive to the RBT construct, further substantiating the construct validity of the CBIS; however, the structural validity of the CBIS was not supported at an empirical level.

It was concluded that in its present form the CBIS is an adequately reliable instrument in identifying

irrationality in school age children. Recommendations for improvements in the scale and further research are discussed.

CHAPTER 1

Introduction

Rational Behavior Therapy (RBT) is based on the theory that emotions and subsequent overt behaviors are caused by a person's antecedent thoughts or private speech. More simply, it is based on the principle that people feel the way they think, and overt behavior is reasonably considered to be an expression of these feelings. RBT therapists operate under the assumption that although an individual was once influenced to think in a certain way at a certain time in his life, he may later challenge and change any belief (Ellis, 1962).

Ellis (1962) has pointed out that many individuals live their lives according to some powerful, illogical, and irrational philosophical assumption that causes considerable anxiety, and which prevents them from leading relatively pleasureful lives. Thus, it seems that a major aim of rational psychotherapy is to identify an individual's explicit or implicit irrational philosophy, and then attempt to modify it. Clinical support for this therapy process has been well documented (DeVogue, 1974; DiGiuseppe, 1975; Ellis, 1961; Glicken, 1967; Kassinove, 1972; Knaus and Bokor, 1975; Sherman, 1967).

Since this conception of therapy relies so heavily

upon the recognition of irrational ideas, it seems worthwhile to describe these irrational ideas in a clear and simple manner. One way to accomplish this is by developing psychometric instruments to measure irrationality. Such instruments would have value as screening instruments, as counseling devices, and as research tools in measuring changes in rational thinking.

Questions have been raised, however, concerning the dimensionality of rational thinking. There is nothing in the literature that suggests that rationality is a unitary construct, or that a person who strongly endorses one irrational idea will strongly believe all others. Yet, to report an individual's "rationality score" implies that rationality has been determined to some degree (Wessler, 1976).

If there are factors that constitute the construct of rationality, Ellis has already predicted them (Ellis, 1962). Each of the 11 common irrational ideas described by Ellis is a summary of the main irrational ideas held by humans in general. The validity of these irrational ideas has been supported in studies by MacDonald and Games (1972) and Newmark, Frerking, Cook, and Newmark (1973). It is these 11 irrational ideas that have formed the basic foundation for many of the psychometric attempts to measure rationality (e.g., Fox and Davies, 1971; Higginbotham, 1976; Laughridge, 1975; Maultsby, 1971; Plutchik, 1976).

However, although the support for the RBT model and the 11 irrational components continues to grow, many of the

efforts to measure this construct have been inadequate. Generally, the research on scale construction in this area has been limited in three ways: (1) There exists insufficient reliability and validity data for many of the scales now available, (2) normative data are insufficient, especially in regards to children, and (3) there exists insufficient justification for the measuring of rationality as a single construct, as compared to measuring it as a multidimensional construct. This study will focus upon the latter two points of inadequacy.

To deal with these inadequacies, the Common Belief Inventory for Students (CBIS) was constructed in an attempt to measure rationality in school age children. This instrument would be useful from the fourth grade up through the twelfth grade, and further, was designed to yield a standard score for each of the eleven irrational ideas, as well as a total standard score.

CHAPTER 2

Review of the Literature

The Rational Behavior Training Model

Maultsby (1971, p. 4) defines rational thinking as that form of thinking or acting which (1) is based on objective facts, (2) is life preserving, (3) helps one achieve his self-defined goals, (4) enables him to function with minimal internal conflict, and (5) enables him to function with minimal conflict with his environment. Although the rationality of any behavior is relative, the more of these criteria that are satisfied, the more rational the behavior.

Rational Behavior Training, or RBT, is a highly directive method of teaching people how to increase their rational thinking skills so that they will be better able to deal with the problems and stresses of daily living. The general goal in RBT is the attainment of maximum emotional and mental health with the least possible time and money expenditures. This is accomplished by utilizing to the maximum the natural ability that everyone has to think rationally (Goodman and Maultsby, 1974).

Rational behavior techniques have also been developed to aid the individual in attaining this general goal. These techniques were based on the premise that faulty thinking

leads to excessive negative emotions (e.g., anxiety rather than concern, anger rather than annoyance, and depression rather than sadness) and, consequently, to behavioral disorders (Ellis, 1962). From this, then, emotional disturbances and dysfunctional behaviors are not directly caused by activating events in the environment, as hypothesized by stimulus-response (S-R) conditioning models, but by irrational cognitions about the event (Ellis, 1962).

Relief from these disturbances is most effeciently and effectively achieved in therapy by first discovering the illogical and irrational beliefs that an individual holds which are causing the disturbances. Secondly, the therapist demonstrates how and why these beliefs are irrational and self-defeating. Next, the therapist engages the individual in actively challenging and eradicating his irrational beliefs. Finally, the therapist actively assists the client in developing a more rational philosophy and belief system upon which the individual can base his subsequent behaviors (Criddle, 1974; Ellis and Grieger, 1977).

In order to understand the role that these irrational beliefs play in emotional disturbance, it is first necessary to understand the RBT theory of the nature and development of emotions. This theory is based on the assumption that human emotion is intrinsically an attitudinal and cognitive process (Ellis, 1957, 1958; Ellis and Harper, 1961, 1975). Specifically, cognition represents a mediating operation between stimuli and responses. Emotions and behaviors

do not only originate from people's reactions to their environment, but also originate from any thoughts, beliefs, and attitudes that an individual has concerning his environment.

Ellis (1957) has developed what he calls the ABC's of the RBT theory of emotion. Briefly, an activating event or experience, A, does not exclusively cause an emotional consequence, C; however, B, or people's beliefs about A, more importantly and more directly contributes to or "causes" C. Other studies that support this assertion include Bandura (1974, Lazarus, 1971, 1974, 1976), and Meichenbaum (1974, 1975, 1977).

In addition to the cognitive processes, Ellis also stressed the importance of the interdependent physiology of the human body systems and processes in the arousal of what are called emotions. Ellis (1962) cites Cobb (1950) in pointing out that the human life processes of sensing, moving, thinking, and emoting are integrally related and operate through (1) sensorimotor processes, (2) autonomic processes, and (3) cognitive processes. From an RBT model frame of reference, though, it is the third set of processes, the cognitive processes, that are of concern in the creating and the sustaining of emotional reactions.

Further support for the relationship between cognition and emotion has been produced in the realm of physiology. Bausfield and Orbison (1952) found that in contrast to the previous beliefs that emotional processes

originated solely in subcortical or hypothalmic centers of the brain, evidence now exists to indicate that the cortex and frontal lobes also seem to be involved in the inhibition, instigation, and sustaining of emotional reactions.

Arnold (1960) also stressed this cognitive component as she defined emotion as:

> the felt tendency toward anything intuitively appraised as good (beneficial), or away from anything intuitively appraised as bad (harmful). This attraction or aversion is accompanied by a pattern of physiological changes organized toward approach or withdrawal. (p. 168)

This view that emotions are a kind of personal appraisal or evaluation with physiological correlates is really quite similar to Ellis's (1962) original formulation that states: "Emotions may therefore simply be evaluations which have a strong bodily component, while so called non-emotional attitudes may be evaluations with a relatively weak bodily component" (p. 44).

From this, then, it seems that both Ellis and Arnold attribute the origins of an emotional response to evaluative thinking. With the highly developed language system that exists in western civilization, most human thinking takes the form of internal words, phrases, and sentences (Luria, 1966). Thus, the individual is constantly describing, interpreting, and evaluating his world to himself through

his internal language, or what Ellis terms "self-talk" (Ellis, 1962). Strongly evaluative self-talk in relation to any person, place, thing, or event is the source of most felt emotion.

Evidence for this assumption has been offered by Velten (1968). Velten experimentally induced feelings of elation and depression in subjects through the use of self-referrand statements. Velten found that these subjects differed significantly from a control group on the performance of five behavioral tasks. Aderson (1975) and Hale and Strickland (1976) obtained similar results in support of this assumption.

With the findings of Velten (1968), and in conjunction with the view that emotions are personal evaluations with cognitive origins and subsequent physiological correlates, Ellis (1962) makes a distinction between immediate or intuitive emotional reactions and prolonged or sustained emotional reactions. Rather than reflecting any major differences in the nature or the origin of the emotion, the relationship between them may be seen as relative, and the distinction between them is best schematized as a bipolar continuum of emoting. Both the immediate emotional reaction and the sustained emotion involve a sensing-moving-thinking-emoting complex, and both rely on past experiences, in varying degrees, for an interpretive evaluation. However, at one end of the continuum, the sustained emotion is the result of a person's

"reflective appraisal" of a situation based on his attitudes and philosophy of life; while at the other end of the continuum, the immediately felt emotion is elicited as an immediate sensory response to a stimulus, and little, if any, "reflective appraisal" is involved.

From this, it seems that prolonged emotional reactions are inseparable from sustained, strongly evaluative self-talk, as they both appear to fall on the same end of the emoting continuum. By continually generating self-talk about how terrible or awful a particular event could have been, an individual can actually create and sustain his feelings toward the event. Ellis (1962) feels that it is almost impossible to maintain any emotion without bolstering it with repeated ideas. Most of the emotional and psychological disturbances in our society are caused by the sustaining of unwanted negative emotions with thinking that is illogical and irrational (Ellis, 1962).

Irrational Ideas

Irrationality may be defined as any thought, emotion, or behavior that leads to self-defeating or self-destructive consequences that significantly interfere with the survival and happiness of the organism. Further, irrational behavior usually has several aspects: (1) The individual believes, often devoutly, that the irrationality accords with the tenets of reality, although in some important respect it does not, (2) people who adhere to the irrationality significantly denigrate or refuse to accept themselves, (3)

irrationality interferes with their getting along satisfactorily with members of their primary social group, (4) it seriously blocks their achieving the kind of interpersonal relations that they would like to achieve, (5) it hinders their working gainfully and joyfully at some kind of productive labor, and (6) it interferes with their own best interests in other important respects (Ellis, 1973, 1975; Maultsby, 1975).

With this definition of irrationality, Ellis assumes that most irrational beliefs take one or more basic forms, all of which appear related to each other. These forms include what Ellis and Grieger (1977) call (1) "musturbation," or the idea that something "should," "ought," or "must" be different from the way it actually exists, (2) awfulizing and "I can't stand-it-itis," or the idea that reality is sometimes not the way we expect it to be, and (3) self-damning, or the idea that one is terrible and worthless if he is unable to attain his personal standards and goals (Ellis and Grieger, 1977).

Generally, the inter-relationship between these irrational categories is two-fold. Firstly, the making of unrealistic demands and expectations upon the world is a characteristic similar to most neurotic distortions (Beck, 1966, 1970). An unrealistic demand may be signaled by the demanding individual's use of the word "should" in relation to the desired event. The use of the word "should" may indicate an expectation that things will be a certain way.

Vertes (1971) identified this as the "should of obligation," because the individual seems to believe that the world is obliged to give in to his wishes.

Secondly, and possibly the most harmful theme interrelating these categories of irrationality, is the notion that one's personal achievements and/or the approval that others direct toward him is directly related to his self-esteem and personal worth. This is a self-defeating view on one's personal worth because it makes success and achievement necessary conditions for feeling like a worthwhile human being.

Similarly, the idea that an adult human being's self-esteem and personal worth depend on the approval or love of others artificially transforms love-approval from a highly desirable thing to a dire necessity. The individual who does not feel loved or approved of by his significant others is likely to feel like a worthless person, in spite of the fact that virtually everyone is faced with disappointment or rejection at one time or another.

Striving for achievement and approval and setting goals are all highly valued in our society. They are valued because they are generally beneficial to society, as well as to the individual. However, the beliefs that a person is worthless, and need feel worthless because he does not achieve or is not approved of by others, or that things should always go one's way, are without foundation (Ellis, 1962).

With this background, then, Ellis (1962) has identified 11 common irrational beliefs which most people socialized in our culture accept to varying degrees and which seem, inevitably, to lead to widespread neurosis. These 11 common irrational beliefs are:

1. The idea that it is a dire necessity for an adult human being to be loved or approved by virtually every significant other person in his community.
2. The idea that one should be thoroughly competent, adequate, and achieving in all possible respects if one is to consider oneself worthwhile.
3. The idea that certain people are bad, wicked, or villainous and that they should be severely blamed and punished for their villainy.
4. The idea that it is awful and catastrophic when things are not the way one would very much like them to be.
5. The idea that human unhappiness is externally caused and that people have little or no ability to control their sorrows and disturbances.
6. The idea that if something is or may be dangerous or fearsome, one should be terribly concerned about it and should keep dwelling on the possibility of its occurring.

7. The idea that it is easier to avoid than to face certain life difficulties and self-responsibilities.

8. The idea that one should be dependent on others and needs someone stronger than oneself on whom to rely.

9. The idea that one's past history is an all-important determiner of one's present behavior and that because something once strongly affected one's life, it should indefinitely have a similar effect.

10. The idea that one should become quite upset over other people's problems and disturbances.

11. The idea that there is invariably a right, precise, and perfect solution to human problems, and that it is catastrophic if this perfect solution is not found. (p. 59)

In support of Ellis's contention that belief in these 11 irrational ideas is neurosis producing, MacDonald and Games (1972) found a positive correlation between endorsement of these irrational ideas and several measures of psychopathology. Using Ellis's 11 irrational ideas as items, they developed a Likert scale with a range of scores from 1 (completely agree) to 9 (completely disagree) which indicated the degree to which an individual identified with each irrational idea. This scale was then correlated with scores from the California Psychological Inventory, Eysenck's

Neuroticism Scale, and the Taylor Manifest Anxiety Scale. Correlations with the 18 scales on the California Psychological Inventory were all in the predicted direction, with 10 scales obtaining significance at the .05 level. Significant correlations ($p < .01$) were also obtained between the Ellis scale scores and the Eysenck Neuroticism Scale and the Taylor Manifest Anxiety Scale. A study by Newmark, Frerking, Cook, and Newmark (1973) concluded with similar findings.

Since all of the common 11 irrational beliefs appear to be associated with neurotic ideation, particularly reality distortion and the concept of one's personal worth, the RBT therapist attacks these neurotic notions and attempts to replace the individual's irrational belief system with a more realistic and rational viewpoint. Therapeutic change ultimately results when the individual himself challenges and discards his irrational, neurosis-producing beliefs (Ellis, 1962).

Numerous clinical cases have been documented which demonstrate the effectiveness of the RBT method as a therapeutic technique for a variety of emotional and behavioral disturbances in both children and adults. Ellis (1961) reports success using this approach with an individual having a long history of psychopathic behavior. Sherman (1967) has found RBT useful as an approach for the treatment of alcoholics. Kassinove (1972) reports on his successful use of RBT in treating a young man's fear of sexual intercourse. The RBT approach has also been shown

to be effective in counseling children (Devoge, 1974; DiGiuseppe, 1975; DiGiuseppe and Kassinove, 1976: Glicken, 1968; Knaus and Bokor, 1975; Knaus and Eyman, 1976).

In attempting to change an individual's irrational beliefs, it is important that the therapist help the client become aware of the irrational beliefs that are specific to his problem, identify them, and then attempt to change or modify them. Since this conception of the therapy process relies so heavily upon the recognition of irrational ideas, it seems worthwhile to be able to identify and describe them simply and clearly. In an effort to do this, many instruments have been developed to measure rationality. Many of these instruments were designed to measure change due to psychotherapy, education, or some other type of intervention program.

Measuring Irrationality

An investigation by MacDonald and Games (1972) indicated that the construction of such a scale based on the RBT model, or more specifically, the 11 common irrational beliefs, was feasible and that identification with these irrational ideas may be associated with psychopathology. They created a Likert scale consisting of each one of Ellis's irrational beliefs followed by a response range of 1 (completely agree) to 9 (completely disagree). Sixty undergraduate students were used as subjects for the study.

Pearson Product Moment Correlations between each

statement and the total for all 11 statements revealed that nine of the statements were reliably associated with the total score. Item seven ("It is easier to avoid certain difficulties and self-responsibilities than to face them.") and item nine ("Past experiences and events are the determiners of present behavior; the influence of the past cannot be eradicated.") were not shown to be associated with the total score, nor were they correlated positively with the other statements.

A Cronbach Alpha was computed as an estimate of the internal consistency of the nine-item instrument. The instrument was found reliable at .73. In a cross-validation study, using 37 graduate students as subjects, the same nine statements were found to be reliably associated with the total score. A Cronbach Alpha of .79 was obtained from this sample.

In support of the contention that identification with these irrational beliefs leads to neurotic behavior, significant correlations were found between subjects' endorsement of these irrational ideas and several measures of psychopathology. On the California Personality Inventory, 10 out of 18 scales were significantly correlated with the Irrational Beliefs Scale at the .05 level. Significant correlations were also obtained with the Eysenck Neuroticism Scale (r = .37), the Taylor Manifest Anxiety Scale (r = .41), and the Internal-External Locus of Control Scale (r = .44). The results of this study produced initial reliability and

validity data for the 11 irrational beliefs.

In a similar manner, Higginbotham (1976) randomly assigned item numbers to the 11 irrational beliefs. A general irrationality score was derived by adding the number of irrational beliefs agreed with to the number of more rational replacements disagreed with. Two hundred and eleven college students were administered this test, and approximately three weeks after the initial administration, the irrationality scale was again given to a sample of the original subjects. A test-retest reliability coefficient of .89 was obtained, thus generating further support for the 11 irrational beliefs. The scale also correlated significantly with several measures of psychopathology (i.e., Mooney Problem Check List, the Taylor Manifest Anxiety Scale, the Dogmatism Scale, and grade point average), thus yielding evidence for the instrument's construct validity. Higginbotham believed that this instrument could be utilized as a means of detecting irrational beliefs and, thus, facilitate therapy.

In an early attempt to measure rationality, Hartman (1968) developed the Personal Beliefs Inventory. This was a general measure of rationality consisting of 60 items constructed on a six point Likert-scale format ranging from 0 (Totally Disagree) to 5 (Totally Agree). Specifically, the higher the score the more irrational the thinking.

Using a sample of 30 college students referred to the university counseling center, Hartman generated a test-

retest reliability coefficient of .89 over a five day period, and a split-half reliability estimate, using the Spearman-Brown Formula, of .95. Hartman believed that this instrument possessed a high level of reliability and validity and that it was extremely sensitive to changes in irrational thinking.

Maultsby (1971) developed three scales to measure irrationality, the Common Perception Inventory (CPI), the Common Trait Inventory (CTI), and the Common Belief Inventory (CBI). Goodman and Maultsby state that a high correlation exists between these three scales.

These three scales were then organized into Your Irrational Personality Trait Inventory Score (YIPTIS). The YIPTIS is a self-rating questionnaire consisting of 179 statements arranged on a five point Likert scale format, ranging from 0 (Never) to 4 (Always). It was designed to indicate the degree to which an individual identifies with Ellis's 11 common irrational beliefs. Each item of the YIPTIS has been identified with at least one of the common irrational beliefs (Maultsby, 1971).

As a personality inventory, the YIPTIS has five unique features: (1) It is based on an operational concept of motivation and a research tested concept of emotion, (2) it is consistent with the demonstrated facts of human anatomy and psychophysiology, (3) it does not require the expense or time of a mental health professional to administer or interpret, as it is not a psychological test,

(4) it is a habit or trait checklist designed for rapid self-assessment by lay people of average intelligence, and (5) the information that it supplies can readily be applied by those lay people in their daily lives to diminish their unhappiness habits (Maultsby, 1971). Maultsby (1971) further stated that he has never seen an unhappy person who has achieved a YIPTIS of less than 111.

Linden (1976), in dealing with the psychometric characteristics of the CBS component of the YIPTIS, obtained an internal consistency estimate of .80, with a test-retest reliability coefficient of .82. Aside from the work of Linden, however, no other reliability or validity estimates have been documented to date.

Jones (1969) developed the Irrational Beliefs Test (IBT) by utilizing the 10 original irrational beliefs presented by Ellis (1961). The IBT is a 100 item scale in which the subject rates his degree of agreement with each item on a five point Likert scale, ranging from 1 (strongly agree) to 5 (strongly disagree). Higher scores reflected greater irrationality, and the direction of the items was varied so as to avoid the acquiescent response set. Beliefs were represented by 10 items each and were designated (1) demand for approval, (2) perfectionistic self-expectations, (3) blame proneness, (4) frustration reactive, (5) emotional irresponsibility, (6) anxious overconcern, (7) problem avoidance, (8) dependency, (9) helplessness, and (10) seeking perfect solutions.

Jones found the test-retest reliability to be .92 for the full scale, with a range of .67 to .87 for individual scales, with observations taken one day apart. Validity was partially established through factor analysis of the a priori selected items, and the factor structure of the test was replicated. Homogeneity reliability coefficients for the 10 separate factors ranged from .66 to .80 with a mean of .74. Concurrent validity data indicated a correlation of .61 with a 25 item measure of self-report of psychiatric symptoms, and the IBT had an average correlation of .42 with clinical factors in Cattell's 16PF Scale.

The IBT also found to differentiate at a highly significant level between a mental hospital population and a normal adult sample. Trexler and Karst (1973) obtained similar reliability and validity estimates in utilizing this test in a study investigating the effectiveness of RBT.

In another attempt to measure irrationality, Fox and Davies (1971) developed the Adult Irrational Idea Inventory (AIII). The first draft of the AIII consisted of 99 items selected in such a manner that each of the 11 irrational beliefs had nine corresponding items. These items were carefully chosen and no item was used without the concurrence of two judges familiar with RBT. To further establish content validity, this version of the AIII was sent to Dr. Ellis for scrutiny.

The response mode selected for the items was the

conventional five point Likert scale ranging from "strongly agree" to "strongly disagree." Item statements were organized such that strong agreement was sometimes very rational and sometimes very irrational. This step was taken to compensate at least in part for a possible agreement-response set. The inventory is scored such that the most rational choice is given a weighting of one and the most irrational choice a weighting of five. Consequently, higher scores on the AIII indicate a higher degree of irrational thinking.

The original 99 item version of the AIII was then administered to a sample of 123 subjects, ranging in age from 17 to 75, and representing a wide occupational range. An item-total correlational analysis was then carried out on the results, and the 60 items that correlated highest with the total score were selected to constitute the final version of the AIII.

This final version was then administered to 110 college students in a test-retest situation over a three week interval to obtain reliability estimates. This procedure yielded a Pearson Correlational Coefficient of .76 and Kudar-Richardson formula 20 coefficients of .74 and .77 on the pretest and the posttest respectively.

Construct validity was also established by comparing the AIII results obtained from three criterion groups. These groups included (1) 82 newly admitted mental hospital patients, (2) 57 diagnosed alcoholics receiving either

in-patient or out-patient treatment, and (3) 113 people composing a socio-economically representative sample drawn from a northern Canadian city. The Sheffe-multiple comparison of main effects produced a significant difference between the representative sample and both the mental hospital patients and the alcoholics; however, no difference between the two clinical groups was evidenced.

Fox and Davies concluded that the AIII is a valid measure of irrationality as it is generally defined in RBT theory. It also appeared that these results supported the basic tenet of RBT that irrational beliefs and ideas are linked with emotional disturbance.

Laughridge (1975) also utilized Ellis's 11 common irrational beliefs in designing the Test for Irrational Ideations (TII). The 11 categories of irrational ideation which formed the foundation for the test were the 11 irrational beliefs discussed by Ellis (1962). The test consists of 110 items, 10 statements for each irrational idea. Content validity of the TII was analyzed by having three psychologists familiar with RBT theory (one of whom was Dr. Ellis) comment on the theoretical ability of each item to be an effective measure of irrational ideation. The TII, along with an established test of psychological maladjustment, the Butler-Haigh Q-Sort (BHQS), was then administered to three groups of graduate students (N = 64). A correlation coefficient of .83 was obtained indicating a significant relationship between the two instruments.

Normative data relative to criterion related validity was gathered over a three year period. Four diagnostically distinct groups of people were tested with the TII including (1) graduate students (N = 78), (2) diagnosed neurotics (N = 49), (3) individuals being treated for drug dependence (N = 30), and (4) in-residence neuropsychiatric patients (N = 23). Significant differences were found between all of the groups, with the exception of the comparison between the drug dependent group and the neurotic group. Laughridge concluded that the significant differences found between the groups suggested the value of the TII in differential diagnosis. In addition, each individual's total score was derived from subscores on each of the 11 irrational ideas. As such, the TII appears to be more sophisticated than many of the other tests developed from the RBT model, and further, seems to be more useful in directing the therapist toward the particular irrational idea(s) of the client. Laughridge also suggested that different ideas may be endorsed differentially by diagnostically distinct groups. This speculation is presently under investigation by Laughridge.

Bard (1973) developed the Self-Rating Scale for Rationality (SRSR) in an effort to sample opinions relevant to the tenets of RBT. The SRSR consists of 20 statements of rational and irrational values set in a Likert scale format. The SRSR is considered to have construct validity in that the scoring was based on Ellis's responses to the items (Ellis, 1973). No other reliability or validity

information was presented with the scale.

Implementing the SRSR, Waugh (1975) found the split-half reliability to range from .56 to .67 and item-total correlations to range from .04 to .56. He also reported a test-retest reliability of .80 after one week; however, in a different study, Crabtree and Ward (1975) reported a test-retest reliability of .50. Crabtree and Ward did find, however, that the SRSR significantly correlated with the Common Belief Scale (Maultsby, 1974), and with MacDonald and Games' (1972) nine item version of Ellis's irrational ideas set in a Likert scale format.

Based on these limited results, however, Bessai and Lane (1976) asserted that although the SRSR might serve as a useful way to solicit initial information from a client, the scale characteristics reported thus far would not seem to encourage the use of the SRSR in its present form for decision making purposes.

In examining the text Reason and Emotion (Ellis, 1962), Plutchik (1976) identified any irrational idea that may have been characteristic of a maladjusted individual, and then structured them into the form of simple statements, answerable in a dichotomous fashion ("Yes" or "No"). A total of 90 items was created and judged by Dr. Ellis for content validity. The resulting set of 92 items was the initial version of the Self-Inventory.

After the administration of the Self-Inventory to 103 college students, three kinds of item analysis were

computed. The first obtained the percent of subjects who said "Yes" to each item. Those items were eliminated as it was felt that they did not discriminate between individuals. A second type of item analysis was carried out by identifying the top 25 percent of the group on overall score and the bottom 25 percent. These groups were then compared by examining their frequency of "yes" responses to each item. When a large difference was not found between these two groups on any particular item, then that item was also eliminated. Finally, point biserial correlations were computed between scores on each item and total scores. Items for which the point biserial correlations did not exceed .35 were dropped from further consideration. These three item analysis procedures produced a total of 45 items for the current version of the Self-Inventory.

The 45 item version of the Self-Inventory was then administered to 121 students at an undergraduate college. The split-half correlation of the test was found to be .88. A significant difference was also found between males and females, with females being more irrational as a group, a result not previously documented.

Although Plutchik feels that the Self-Inventory is a reliable instrument, representative of the range of irrational ideas described by Ellis, presently there exists no research to support or refute the validity of this instrument.

CHAPTER 3

Statement of the Problem

As can be seen from the discussed research, support for Rational Therapy's basic premises comes from studies that have demonstrated that the endorsement of the 11 irrational beliefs in some psychometric structure is a useful and productive way to measure irrationality. Furthermore, the studies reviewed also stressed that in order to assess the effectiveness of therapeutic or education intervention, it is important to have an adequate measure of the construct as defined by the RBT model.

While a number of investigators have attempted to do this, much of the research has been limited in three ways. Firstly, in many cases, the reliability and/or validity have been inadequate. To exemplify this, one test of irrationality (Bard, 1973) was introduced into the literature that had no reliability or validity estimates.

A second limitation, and of particular relevance to this project, is that the normative data have been based almost exclusively on college students, making the devised instruments inappropriate for public school age children. Since school age children have more limited verbal and cognitive abilities, and shorter attention spans, it is questionable whether they could adequately respond to

questions designed for college students.

The third limitation of many of the scales developed is in their basic conception of irrationality. Irrationality, as defined by Rational Behavior Theory, is a multidimensional construct (i.e., composed of 11 specific cognitions). Yet, although many of the present scales originated from the 11 irrational beliefs, almost all of the research to date has measured the construct as a unitary phenomenon. Wessler (1976) has noted, "I can find nothing in Ellis's writings to suggest that rationality is a unitary construct, or that a person who strongly believes one irrational idea will strongly believe all others" (p. 25).

Presently, Laughridge's (1975) Test of Irrational Ideation and Jones's (1969) Irrational Belief Test are the only two instruments that attempt to measure each of the 11 individual irrational ideas. Unfortunately, both of these tests were developed for an adult population and, thus, would be inappropriate for school age children. Currently, there have been only two documented attempts to measure rationality in children (Kassinove, Crisci, and Tiegerman, 1977; Knaus, 1974).

Knaus (1974) has developed two exam-type tests, the Children's Survey of Rational Beliefs (CSRB) and the Children's Survey of Rational Concepts (CSRC), for use in an RBT education program. The CSRB consists of 18 multiple choice questions and is designed for children ages seven to to 10, and the CRSC consists of 38 multiple choice questions

designed for children between the ages of 10 to 13. Presently, however, there exists no reliability, validity, or normative data for either of these instruments.

Probably the best effort to design a test of irrationality useful across all ages has been a recent attempt by Kassinove, Crisci, and Tiegerman (1977). In constructing the Idea Inventory, an initial pool of 55 items was generated, five items for each of Ellis's 11 irrational beliefs. From this pool of items, the authors independently selected two items that they felt represented each belief. They all needed to concur before an item could be incorporated into the scale. In addition to the two items selected for each irrational idea, Ellis's original statement of the idea was also included in the test. However, modifications of the original statements were made in order to increase their readability for children and lower functioning adults. A pilot study indicated that children as young as age eight could adequately comprehend the items chosen if the statements were read aloud to them. Thus, each of the 11 irrational ideas was represented by three items, resulting in a 33 item test.

On the Idea Inventory, the subjects were asked to respond to each item on a three point Likert scale (1 = agree, 2 = uncertain, and 3 = disagree). Total irrationality scores could vary from 33 (highly irrational) to 99 (highly rational). In addition, scores on each individual idea could be computed, ranging from three

(less rational) to 9 (more rational).

Internal consistency estimate for the instrument attained a .84 reliability, while item-total correlations ranged from .38 to .78. In a validity assessment, the Idea Inventory correlated significantly with neuroticism scale scores on the Eysenck Inventory and with scores on the Bell Adjustment Inventory.

Therefore, since the research in this area of scale development is relatively new, this study was designed in an effort to generate a measure of rational thinking in children. To accomplish this, the Common Belief Inventory for Students (CBIS) was constructed which would be useful from the fourth grade to the twelfth grade. Similar to Kassinove et al.'s (1977) Idea Inventory, this test was designed to yield a total irrationality score, as well as scores for each of the 11 irrational beliefs.

CHAPTER 4

Method

Subjects

Subjects taking part in this study included 191 fifth grade, 519 sixth grade, and 614 seventh grade students from elementary schools in Butler and Warren County, Kentucky. The subjects were obtained through the education component of the Drug Abuse Program in the Barren River Comprehensive Care System. The sample was composed of 653 males and 671 females ranging in age from 9 to 15. In the majority of the schools sampled, complete grades were involved in the testing so as to control for random intellectual and demographic fluctuations.

Instrument

The instrument designed for the essence of this study was the Common Belief Inventory for Students, from here on referred to as the CBIS. An initial item pool of 51 statements was generated based on Ellis's 11 common irrational beliefs. From these 51 statements, four judges, three of whom were practicing RBT in some capacity, independently selected the items which they felt best measured the single construct of rationality, as well as the 11 component ideas. The judges had to obtain 100 percent agreement for an item to be selected.

From this item selection process, 45 items emerged. These items were then randomly placed into the scale so as to control for any response set that might occur. Prior to any administration of the CBIS, the test as a whole was subjected to a readability program so as to establish the readability limits of the scale.

The test was constructed on a five-point Likert-Scale format, similar to Maultsby's (1971) YIPTIS, using 0 (Never) equal to no percent of the time, 1 (Sometimes) equal to 25 percent of the time, 2 (Half of the time) equal to 50 percent of the time, 3 (Almost always) equal to 75 percent of the time, and 4 (Always) equal to 100 percent of the time. For the total scale, raw scores could range from 0 to 180, while for each belief, raw scores could range from 0 to 16.

All of the statements were constructed in an irrational direction such that the more one would adhere to any of the statements, or the higher his score, the more irrational his thinking. A copy of this version of the CBIS may be seen in Appendix A.

Procedure

The 45 item CBIS was administered to all 1,324 students. Of these 1,324 students, 586 were included in the experimental group and 738 were included in the control group. Students in the experimental group were then exposed to one hour of RBT instruction each week for six weeks.

The objectives of these six sessions included (1) assisting students in defining and identifying their common feelings, (2) demonstrating that feelings and emotions are generated by the beliefs that people have, (3) helping the students identify their irrational beliefs, (4) establishing differences between fact and opinion, (5) demonstrating that each individual controls his own self-concept, and (6) defining and differentiating between desires, needs, and irrational demands.

All of the RBT sessions were administered by a drug educator trained in Rational Behavior Training, and the basic instruction followed the Rational Emotive Education Program model established by Knaus (1974).

At the conclusion of the six sessions, the posttest, utilizing the CBIS, was administered. The control group was also given the posttest at this time, although these students did not participate in any type of RBT education program. All data were collected during the final half of the 1977-78 academic year (January through April).

In obtaining the psychometric properties of the CBIS, a pretest/posttest design was utilized, using the CBIS in the test/retest format. Any subject that missed more than three items on the pretest or the posttest was eliminated from the analysis. This procedure resulted in a final sample of 1,226 individuals, approximately 93 percent of the total sample. For the remaining missing items, the mean of the particular item missed was substituted for all

calculations.

Item characteristics (i.e., item means, item standard deviations, and item-total correlations) and scale characteristics (i.e., scale and belief means, scale and belief standard deviations, and belief-total correlations) were produced from the 1,226 pretests. Standard scores were also generated from the 1,226 pretests.

The internal consistency of the CBIS and the belief components was obtained from all 1,226 pretests and the test/retest procedure utilized the 738 students in the control group in generating reliability estimates for the CBIS.

Validity estimates of the scale also utilized the 1,226 pretests in gaining the structural validity of the CBIS, while the predictive validity of the instrument was established by comparing the pretests and the posttests between both groups.

CHAPTER 5

Item Characteristics

Analysis

A mean, standard deviation, and an item-total correlation were computed across all 1,226 pretests for each item. Any items not contributing to the total variance (i.e., items obtaining an item-total correlation of less than .20) were eliminated at this point. How each item correlated to its respective belief score was also computed.

Results

The item means on this administration of the CBIS ranged from .72 on Item 39, with a standard deviation of 1.029, to 3.4 on Item 28, with a standard deviation of 1.084. All of the item-total correlations for the CBIS ranged from .20 (Item 32) to .49 (Item 17), with the exception of Item 28 ("People should always do their best."), which received an item-total correlation of approximately .12. Item 28 also decreased the total test reliability, and consequently, was eliminated from any further analysis. The mean, standard deviation, and item-total correlation for each item may be seen in Table 1.

With the elimination of Item 28, there remained a total of 44 items; moreover, there remained four items for each one of Ellis's (1962) 11 irrational beliefs. On

TABLE 1

CBIS Item Characteristics

(n = 1,226)

Items	Mean	Standard Deviation	Item-Total Correlation
Item 1	1.4	1.175	0.23
Item 2	1.1	1.099	0.33
Item 3	2.0	1.351	0.41
Item 4	1.7	1.127	0.38
Item 5	2.2	1.396	0.37
Item 6	1.7	1.397	0.36
Item 7	2.2	1.381	0.29
Item 8	1.8	1.158	0.39
Item 9	1.5	1.227	0.29
Item 10	1.5	1.245	0.24
Item 11	1.4	1.096	0.33
Item 12	2.2	1.395	0.27
Item 13	2.1	1.305	0.45
Item 14	2.5	1.273	0.41
Item 15	2.5	1.339	0.39
Item 16	1.6	1.432	0.43
Item 17	1.7	1.343	0.49
Item 18	1.4	1.098	0.39
Item 19	1.5	1.115	0.43

Table 1-continued

Items	Mean	Standard Deviation	Item-Total Correlation
Item 20	2.0	1.195	0.38
Item 21	1.7	1.291	0.38
Item 22	1.1	1.068	0.25
Item 23	2.7	1.307	0.24
Item 24	2.2	1.387	0.24
Item 25	1.4	1.079	0.31
Item 26	1.6	1.023	0.41
Item 27	2.0	1.246	0.40
Item 28	3.4	1.084	0.13
Item 29	1.7	1.332	0.34
Item 30	2.3	1.370	0.40
Item 31	2.4	1.292	0.25
Item 32	1.9	1.255	0.20
Item 33	1.6	1.181	0.27
Item 34	1.2	0.950	0.34
Item 35	1.9	1.369	0.35
Item 36	2.4	1.372	0.36
Item 37	0.9	1.130	0.22
Item 38	1.2	1.266	0.20
Item 39	0.7	1.029	0.21
Item 40	1.1	1.062	0.20
Item 41	1.1	0.831	0.33
Item 42	1.0	0.806	0.24
Item 43	1.7	1.320	0.24

Table 1-continued

Items	Mean	Standard Deviation	Item-Total Correlation
Item 44	1.2	0.974	0.21
Item 45	1.2	1.221	0.34

Irrational Belief 1, the item-total correlations ranged from .23 (Item 1) to .30 (Item 30), they extended from .25 (Item 16) to .35 (Item 15) on Irrational Belief 2, from .20 (Item 29) to .42 (Item 31) on Irrational Belief 3, from .21 (Item 14) to .32 (Item 18) on Belief 4, from .22 (Item 9) to .29 (Item 19) on Belief 5, from .18 (Item 10) to .32 (Item 8) on Belief 6, from .08 (Item 39) to .40 (Item 5) on Belief 7, from .18 (Item 40) to .37 (Item 41) on Belief 8, from .19 (Item 25) to .34 (Item 2) on Belief 9, from .05 (Item 22) to .28 (Item 43) on Belief 10, and from .07 (Item 24) to .20 (Item 26) on Belief 11. The item-total correlations for each item in each irrational belief may be seen in Table 2.

Discussion

With the exception of Item 28, all of the items created for the CBIS appeared to be discriminating between individual scores, as well as contributing to the total variance generated by the total test. The low item-total correlation for Item 28, however, caused its deletion from the CBIS.

A possible explanation for this low item-total correlation is that the item did not discriminate very well between individuals. Specifically, over 75 percent of the total sample of 1,226 responded to the statement with a score of 3 (Almost Always) on the Likert scale format. In comparison, the next highest response percentage for any one response to any item was 62 percent.

TABLE 2

Item-Total Correlations for Each Item

in Each Irrational Belief

Irrational Beliefs	Items	Item-Total Correlation
Irrational Belief 1	Item 1	0.24
	Item 7	0.24
	Item 17	0.30
	Item 30	0.24
Irrational Belief 2	Item 13	0.34
	Item 15	0.36
	Item 16	0.25
	Item 27	0.31
Irrational Belief 3	Item 29	0.13
	Item 31	0.42
	Item 32	0.38
	Item 33	0.35
Irrational Belief 4	Item 14	0.16
	Item 18	0.33
	Item 34	0.31
	Item 35	0.23

Table 2-continued

Irrational Beliefs	Items	Item-Total Correlation
Irrational Belief 5	Item 9	0.23
	Item 19	0.29
	Item 20	0.28
	Item 21	0.26
Irrational Belief 6	Item 8	0.33
	Item 10	0.18
	Item 36	0.26
	Item 37	0.19
Irrational Belief 7	Item 3	0.36
	Item 5	0.40
	Item 6	0.32
	Item 39	0.08
Irrational Belief 8	Item 38	0.21
	Item 40	0.19
	Item 41	0.37
	Item 42	0.33
Irrational Belief 9	Item 2	0.34
	Item 4	0.34
	Item 25	0.20
	Item 45	0.27

Table 2-continued

Irrational Beliefs	Items	Item-Total Correlation
Irrational Belief 10	Item 12	0.25
	Item 22	0.05
	Item 23	0.27
	Item 43	0.29
Irrational Belief 11	Item 11	0.19
	Item 24	0.07
	Item 26	0.21
	Item 44	0.17

With the elimination of Item 28, the CBIS contained four items within each irrational belief. The item-total correlations within each irrational belief were also encouraging. All of the correlations exceeded .18, with the exception of items 22, 24, and 39 which obtained correlations of .05, .07, and .08 respectively. This indicated that their contributions to their respective irrational belief score (i.e., Irrational Beliefs 10, 11, and seven, respectively) were minimal. These irrational belief components may have been weakened in regards to their reliability.

With this structure, however, one will be able to determine movement within each irrational belief, as well as within the total construct of rationality. In general, the majority of items on the test were found to be reliable indicators of the total score, as well as reliable indicators of the irrational belief component scores and, thus, contributed to the reliability of the instrument.

CHAPTER 6

Scale Characteristics

Analysis

The CBIS was grammatically constructed to be used with a younger population, and prior to any administration of the CBIS, the test as a whole was subjected to the Simple Test Approach for Readability (STAR) created by General Motors. The STAR program generated a Flesch Index, the Dale Index, and a grade level equivalent.

The Flesch Index is based on a scale of 0 to 100, and the higher the index, the more readable the writing. The Dale Index, which is derived from the Flesch Index, is based on a scale of 0 to 10, and the higher the index, the more difficult the reading. The grade level equivalent is also derived from the Flesch Index.

A mean and a standard deviation were computed for the total test and for each of the irrational belief components. The irrational belief-total test correlations were also computed in an effort to determine how much each belief was contributing to the total score.

The raw scores for the total test, as well as for each belief, were transformed into standard score units. Percentile rankings were generated from the frequency distribution of the total raw scores.

Results

Based on the Simple Test Approach for Readability, the CBIS gained a Flesch Index of 89.7, a Dale Index of 4.1, and a general grade level readability of 4.8. The elimination of Item 28, along with several wording changes, did not affect these ratios. The final version of the CBIS consisted of 44 statements, with a range of raw scores from 0 to 176. This final version of the CBIS may be seen in Appendix B.

This final version of the CBIS generated a total test mean of 74.4, with a standard deviation of 20.169. The irrational belief means on this administration of the CBIS ranged from 4.4, with a standard deviation of 2.487 on Irrational Belief 8, to 8.1 on Belief 2, with a standard deviation of 3.415. The irrational belief-total test correlations ranged from .34 on Belief 8 to .63 on Belief 2. The means, standard deviations, and the belief-total test correlations may be seen in Table 3.

By assuming equality between the response units on the Likert scale format, the total test raw scores of the CBIS were transformed into standard T-scores. The T-score maintains a mean of 50 and a standard deviation of 10. The T-score conversions, extending over three standard deviations, may be seen in Table 4. Percentile ranks were also generated from the frequency distributions of the total raw scores. The percentile ranks may be seen in Table 5.

With the raw scores for the belief components

TABLE 3

Total Test and Irrational Belief Characteristics

(n = 1,226)

Scale	Mean	Standard Deviation	Belief-Total Correlation
Belief 1	7.6	3.245	0.57
Belief 2	8.1	3.415	0.64
Belief 3	7.7	3.243	0.37
Belief 4	6.9	2.896	0.60
Belief 5	6.7	2.993	0.58
Belief 6	6.7	2.981	0.48
Belief 7	6.7	3.291	0.52
Belief 8	4.4	2.487	0.35
Belief 9	5.4	2.851	0.51
Belief 10	7.9	3.051	0.39
Belief 11	6.3	2.566	0.51
Total Test	74.4	20.169	

TABLE 4

T-Score Conversions for Total Test Raw Scores

Raw Score	T-Score	Raw Score	T-Score
Below 15	20	76-77	51
16-17	21	78-79	52
18-19	22	80-81	53
20-21	23	82-83	54
22-23	24	84-85	55
24-25	25	86-87	56
26-27	26	88-89	57
28-29	27	90-91	58
30-31	28	92-93	59
32-33	29	94-95	60
34-35	30	96-97	61
36-37	31	98-99	62
38-39	32	100-101	63
40-41	33	102-103	64
42-43	34	104-105	65
44-45	35	106-107	66
46-47	36	108-109	67
48-49	37	110-111	68
50-51	38	112-113	69
52-53	39	114-115	70

Table 4-continued

Raw Score	T-Score	Raw Score	T-Score
54-55	40	116-117	71
56-57	41	118-119	72
58-59	42	120-121	73
60-61	43	122-123	74
62-63	44	124-125	75
64-65	45	126-127	76
66-67	46	128-129	77
68-69	47	130-131	78
70-71	48	132-133	79
72-73	49	134 and	80
74-75	50	above	

TABLE 5

Percentile Ranks for Total Test Raw Scores

Raw Scores	Percentile Ranks	Raw Scores	Percentile Ranks
Below 25	Less than 1	45	21
26	2	46	22
27	3	47	23
28	4	48	24
29	5	49	25
30	6	50	26
31	7	51	27
32	8	52	28
33	9	53	29
34	10	54	30
35	11	55	31
36	12	56	32
37	13	57	33
38	14	58	34
39	15	59	35
40	16	60	36
41	17	61	37
42	18	62	38
43	19	63	39
44	20	64	40

Table 5-continued

Raw Scores	Percentile Ranks	Raw Scores	Percentile Ranks
65	41	89	65
66	42	90	66
67	43	91	67
68	44	92	68
69	45	93	69
70	46	94	70
71	47	95	71
72	48	96	72
73	49	97	73
74	50	98	74
75	51	99	75
76	52	100	76
77	53	101	77
78	54	102	78
79	55	103	79
80	56	104	80
81	57	105	81
82	58	106	82
83	59	107	83
84	60	108	84
85	61	109	85
86	62	110	86
87	63	111	87
88	64	112	88

Table 5-continued

Raw Scores	Percentile Ranks	Raw Scores	Percentile Ranks
113	89	119	95
114	90	120	96
115	91	121	97
116	92	122	98
117	93	123 and above	99
118	94		

approximating the normal distribution, but with less precision, the component scores were converted into stanine units. The stanine maintains a mean of five and a standard deviation of two. The stanine conversions may be seen in Table 6.

Discussion

From the Simple Test Approach for Readability, it appears that the CBIS is a readable test for individuals functioning at an upper fourth grade level. It is suspected that individuals functioning below this level would be able to adequately comprehend the items if they were read aloud to them. Kassinove et al. (1977) provided support for this assertion in the process of developing the Idea Inventory. They reported that children as young as eight were able to complete the test if the statements were read aloud to them.

By utilizing the test mean and standard deviation as the appropriate measures of central tendency, it appears that the CBIS was judging the majority of the students' level of rationality as average. This would lend support to the transformation of the raw scores into standardized scores, and further substantiate the assumption of equality between response units. The percentile ranks were constructed in conjunction with the standard scores so as to aid in the ease of interpretation.

The component beliefs were also aligning themselves with the normal distribution, but since their reliability was less exact, due to the small number of items within each

TABLE 6

Stanine Conversions for Total Belief Raw Scores

	Raw Scores Beliefs										
Stanines	1	2	3	4	5	6	7	8	9	10	11
1	0-1	0-2	0-2	0-1	0-1	0-1	0	0	0	0-2	0-1
2	2-3	3	3	2-3	2	2	1-2	1	1	3	2
3	4	4	4	4	3	3	3	2	2	4	3
4	5-6	5-6	5-6	5	4-5	4-5	4-5	3	3	5-6	4-5
5	7	7-8	7	6-7	6	6	6	4	4-5	7-8	6
6	8-9	9-10	8-9	8	7-8	7-8	7-8	5	6	9	7
7	10-11	11	10-11	9-10	9-10	9	9-10	6-7	7-8	10-11	8-9
8	12-13	12-13	12-13	11	11	10-11	11	8-9	9-10	12	10
9	14-16	14-16	14-16	12-16	12-16	12-16	12-16	10-16	11-16	13-16	11-16

belief, the stanine, a more general standard score, was implemented. Even though the belief-total test correlations were quite adequate, with such few items contained within each belief component, it was felt that any movement within these beliefs should be interpreted at a general level and, thus, be a signal for further exploration into the specific irrational characteristics generated by that particular belief.

Generally, the T-score and the stanine locate an individual's score in relation to the group performance by indicating the number of standard deviation units above or below the group mean that an individual score falls.

CHAPTER 7

Reliability Estimates

Analysis

A Pearson Product Moment Correlation was computed between the pretests and the posttests of the 738 students in the control group so as to obtain an estimate of the scale's test-retest reliability. This provided a measure of the stability of the CBIS by estimating the amount of variable fluctuation in scores over the six week time interval. The same procedure was applied to each belief component.

Internal consistency estimates for the test were obtained from the Guttman reliability procedures, The coefficients generated from these procedures yielded a range of internal consistency estimates. These internal consistency procedures were also applied to each belief component. All internal consistency calculations were based on the 1,226 pretests.

A standard error of measurement was calculated for the total test, as well as for each specific belief component, in an effort to provide confidence intervals around an obtained raw score. This index represents an estimate of the standard deviation of the errors obtained in repeated testing on the same individual. The test-retest reliability

coefficients were utilized in the calculations of the standard error of measurement indices.

Results

The test-retest procedures yielded a correlation coefficient of .84 for the total test over a six week time interval. Correlations for the belief components ranged from .08 on Belief 9 to .29 on Belief 7. The Pearson Product Moment Correlations for the test-retest reliability estimates for the CBIS may be seen in Table 7.

To assess the internal consistency of the CBIS the Guttman reliability procedures were applied. The Guttman procedures yielded six lambda reliability coefficients ranging from .78 to .87. The internal consistency of each specific belief score was also assessed utilizing these procedures. For Belief 1, the lambda coefficients ranged from .43 to .56; for Belief 2, they ranged from .49 to .63; for Belief 3, .49 to .65; for Belief 4, .43 to .57; for Belief 5, .45 to .57; for Belief 6, .42 to .55; for Belief 7, .47 to .64; for Belief 8, .44 to .59; for Belief 9, .47 to .60; for Belief 10, .40 to .53; and for Belief 11, .32 to .51. These internal consistency estimates may be seen in Table 8.

The standard error of measurement was also calculated for the total test and for each belief in an effort to establish confidence interval around obtained raw scores. For the total test, the standard error of measurement was 7.80, while for the beliefs it ranged from 2.29 on Belief 11

TABLE 7

Test-Retest Reliability Estimates

for the CBIS and Each Belief

Test and Beliefs	r	p
Test	.84	(.001)
Belief 1	.11	(.026)
Belief 2	.13	(.006)
Belief 3	.19	(.001)
Belief 4	.27	(.001)
Belief 5	.15	(.002)
Belief 6	.09	(.037)
Belief 7	.29	(.001)
Belief 8	.14	(.004)
Belief 9	.08	(.064)
Belief 10	.26	(.001)
Belief 11	.20	(.001)

TABLE 8

Guttman Reliability Estimates

for the CBIS and Each Belief

Guttman Estimates	Test	Beliefs 1	2	3	4	5	6	7	8	9	10	11
Lambda I	.84	.44	.49	.49	.43	.45	.42	.47	.44	.47	.40	.32
Lambda II	.86	.56	.64	.64	.55	.57	.54	.63	.56	.60	.52	.41
Lambda III	.86	.55	.62	.62	.54	.56	.53	.60	.56	.59	.50	.40
Lambda IV	.78	.45	.53	.64	.57	.55	.52	.55	.59	.52	.46	.51
Lanbda V	.85	.56	.62	.65	.55	.56	.55	.64	.56	.60	.53	.42
Lambda VI	.87	.49	.56	.58	.49	.50	.47	.56	.50	.53	.45	.36

to 3.18 on Belief 2. The standard errors of measurement may be seen in Table 9.

Discussion

The test-retest estimates gained from the total test indicated that the CBIS is a stable and reliable instrument. This is even more significant in light of the six week time interval between the pretest and the posttest. Test-retest datum for many of the existing rationality scales is not documented, and further, where it is documented, the longest time interval has been three weeks, with an obtained reliability estimate of .76 (Fox and Davies, 1971). From this, then, it seems that the CBIS is more stable over a longer period of time than any of its predecessors. The belief components of the CBIS also were relatively stable over the six week period, indicating that the parts of the instrument remained stable over time. Even Belief 9, the only belief not obtaining a significant test-retest correlation, closely approached significance ($p < .06$).

Support for the reliability of the CBIS also was gathered from the Guttman internal consistency estimates. For the total test, the range of reliability coefficients generated by these procedures was very consistent with previous psychometric attempts in this area. The internal consistency estimates for each belief were also quite encouraging, particularly since each belief contained only four items. It is speculated that with an increase in the number of items for each belief, the reliability of each

TABLE 9

Standard Errors of Measurement by Scale

Scale	Confidence Levels				
	68%	85%	90%	95%	99%
Test	7.80	15.60	23.40	31.20	39.00
Belief 1	3.06	6.12	9.18	12.24	15.30
Belief 2	3.18	6.36	9.54	12.72	15.90
Belief 3	2.92	5.84	8.76	11.68	14.60
Belief 4	2.47	4.94	7.41	9.88	12.35
Belief 5	2.75	5.50	8.25	11.00	13.75
Belief 6	2.84	5.68	8.52	11.36	14.20
Belief 7	2.77	5.54	8.31	11.08	13.85
Belief 8	2.31	4.62	6.93	9.24	11.55
Belief 9	2.73	5.46	8.19	10.92	13.65
Belief 10	2.62	5.24	7.86	10.48	13.10
Belief 11	2.29	4.58	6.87	9.16	11.45

belief also would increase. This speculation is supported by the belief-total correlations discussed in Chapter 6. With each belief significantly contributing to the total test score, and thus contributing to the reliability of the CBIS, it seems that if more items would be adopted for each belief, then the reliabilities for each belief would also increase.

However, even though the reliability of the test, as well as the reliabilities of the component parts, seemed quite adequate, the CBIS is not without error, and it is necessary to attempt to correct this. The standard error of measurement corrects for the variable error associated with the test from administration to administration. For example, if on one administration of the CBIS an individual obtained a raw score of 75, then by utilizing this index for the total test, it could be predicted that the chances would be 68 out of 100 that the same individual would achieve a raw score of between 67.2 to 82.8. The advantage of this index is in increasing the reliability and accuracy of prediction of a test score from one administration to the next.

Based on the test-retest estimates, the internal consistency estimates, and with the utilization of the standard error of measurement, it appears that the CBIS and its component parts are quite reliable and stable over time and person.

CHAPTER 8

Validity Estimates

Analysis

For each belief component, as well as for the total test, face and content validity were ascertained by the four judges in the item selection process.

The predictive validity for the total test was obtained by using a repeated measures two-way analysis of the variance in comparing the experimental group with the control group. Independent *t*-tests were used to examine for any grade or sex differences on the CBIS.

To investigate the independence of the items, a varimax rotation factor analysis was performed on the total test. From this, the number of different factors measured by the instrument and the amount of variance associated with each of the factors were determined. The varimax rotated factor analysis of the CBIS further assessed the structural validity by examining the inter-belief correlations.

Results

A comparison of the means between the males and the females generated a *t*-value of .67 ($p < .50$). These results may be seen in Table 10. The *t*-values generated by (1) comparing fifth and sixth grade students was .70 ($p < .48$),

TABLE 10

Comparison of Pretest Means Between Males and Females

Sex	Mean	t	p
Males	78.5		
		.67	(.503)
Females	77.4		

(2) comparing fifth and sixth grade students was .69 ($p < .69$), and (3) comparing sixth and seventh grade students was -.46 ($p < .64$). These results may be seen in Tables 11, 12, and 13 respectively.

In not obtaining any significant differences between the sexes or between the grades, the predictive validity of the total test was assessed on the total sample. Here, the repeated measures two-way analysis of the variance produced an F-ratio of 5.32 ($p < .02$) between the change scores from the pretest to the posttest between the groups, in favor of the experimental group. An F-ratio of 2.65 ($p < .109$) was also produced to indicate any differences within the groups prior to the pretest. The two-way analysis of the variance may be seen in Table 14.

In assessing the structural validity of the CBIS, a varimax rotated factor analysis yielded 11 factors with Eigenvalues greater than one. These factors and their factor loadings may be seen in Table 15. To further assess the structural validity of the CBIS, the 11 beliefs were correlated yielding a range of between .12 (Belief 8 with Belief 10) and .47 (Belief 2 with Belief 7). These belief inter-correlations may be seen in Table 16. A varimax rotated factor analysis was also applied to the 11 belief components to determine their independence. The 11 beliefs produced two factors with Eigenvalues greater than one, with Factor I containing Beliefs 1, 2, 3, 4, 5, 6, and 10, and Factor II containing Beliefs 7, 8, 9, and 11. These factors may be seen in Table 17.

TABLE 11

Comparison of Pretest Means Between

Fifth and Sixth Graders

Grade	Mean	*t*	*p*
5	75.2		
		.70	(.483)
6	74.0		

TABLE 12

Comparison of Pretest Means Between

Fifth and Seventh Graders

Grade	Mean	t	p
5	75.7		
		.39	(.697)
7	75.0		

TABLE 13

Comparison of Pretest Means Between

Sixth and Seventh Graders

Grade	Mean	t	p
6	74.0		
		-.46	(.644)
7	75.0		

TABLE 14

Two-Way Analysis of the Variance Comparing the Experimental Group to the Control Group

Source	Mean Square	Degrees of Freedom	F-Ratio	p
Total	415.863	1257		
Between	431.678	628		
Groups	2283.000	1	5.325	(.020)
Error (G)	428.725	627		
Within	400.073	629		
Trials	1058.000	1	2.652	(.109)
Error (T)	398.977	627		

TABLE 15

The II Factors of the CBIS

Factors	Eigenvalues	Percent of Variance	Items	Factor Loadings
Factor I	6.519	14.8	Item 9	0.410
			Item 18	0.567
			Item 34	0.573
			Item 40	0.282
			Item 44	0.408
Factor II	2.296	5.2	Item 2	0.492
			Item 3	0.603
			Item 4	0.522
			Item 5	0.524
			Item 6	0.428
			Item 13	0.459
Factor III	1.893	4.3	Item 8	0.329
			Item 14	0.332
			Item 15	0.533
			Item 17	0.300
			Item 27	0.422
			Item 35	0.232
			Item 36	0.496

TABLE 15-continued

Factors	Eigenvalues	Percent of Variance	Items	Factor Loadings
Factor IV	1.610	3.7	Item 38	0.309
			Item 39	0.299
			Item 41	0.634
			Item 42	0.498
			Item 45	0.307
Factor V	1.423	3.2	Item 16	0.338
			Item 19	0.401
			Item 20	0.333
			Item 29	0.400
			Item 30	0.489
Factor VI	1.347	3.1	Item 24	0.251
			Item 31	0.613
			Item 32	0.639
			Item 33	0.458
Factor VII	1.251	2.8	Item 12	0.398
			Item 21	0.327
			Item 23	0.472
			Item 25	0.209
			Item 43	0.531
Factor VIII	1.149	2.6	Item 1	0.328
			Item 7	0.583

TABLE 15-continued

Factors	Eigenvalues	Percent of Variance	Items	Factor Loadings
Factor IX	1.107	2.5	Item 10	0.352
			Item 22	0.310
			Item 37	0.276
Factor X	1.033	2.3	Item 11	0.448
Factor XI	1.011	2.3	Item 26	0.335

TABLE 16

The Belief Intercorrelations for the CBIS

Beliefs	1	2	3	4	5	6	7	8	9	10	11
1	1.00										
2	.46	1.00									
3	.33	.27	1.00								
4	.42	.48	.24	1.00							
5	.42	.40	.26	.46	1.00						
6	.36	.39	.21	.35	.31	1.00					
7	.28	.47	.16	.34	.35	.29	1.00				
8	.17	.19	.16	.26	.22	.17	.29	1.00			
9	.28	.37	.19	.35	.35	.26	.46	.30	1.00		
10	.30	.40	.16	.28	.30	.31	.17	.12	.17	1.00	
11	.35	.32	.27	.39	.39	.24	.34	.28	.37	.15	1.00

TABLE 17

The Two Factors from the Belief Components of the CBIS

Factors	Eigenvalues	Percent of Variance	Beliefs	Factor Loadings
Factor I	4.146	37.7	Belief 1	0.620
			Belief 2	0.627
			Belief 3	0.355
			Belief 4	0.527
			Belief 5	0.510
			Belief 6	0.499
			Belief 10	0.519
Factor II	1.119	10.2	Belief 7	0.592
			Belief 8	0.442
			Belief 9	0.650
			Belief 11	0.501

Discussion

With regards to the predictive validity of the CBIS, no significant differences were evidenced between males and females on the pretest items. This finding appeared to be consistent with the literature; however, it is in direct opposition to the findings of Plutchik (1976), who did find a significant difference between the sexes, with females tending to be more irrational as a group. Further, the CBIS did not significantly differentiate between grades. This finding was in opposition to the findings of Kassinove et al. (1977), which evidenced a decrease in irrational thinking as grade increased. The explanations for these differences may be twofold: (1) Either the CBIS was not sensitive to the subtle changes manifested in rational thinking from grade to grade, or (2) the sample tested was not a wide enough range so as to produce significant changes. In conjunction with the second explanation, it should be noted that on the Idea Inventory (Kassinove et al. (1977), the mean score difference between the fifth and seventh grade students was only 3.8 points, not a significant change over the three grade cross section. The developmental changes demonstrated by Kassinove et al. (1977), as well as the sex differences discussed by Plutchik (1976), could be further examined if the CBIS were administered to students from the fourth grade through the twelfth grade. Presently, however, the CBIS does not support the findings of Kassinove et al. (1977), nor does it support the findings

of Plutchik (1976), and thus, these factors need not be considered in administering this instrument to students in the fifth, sixth, or seventh grades.

With these findings, the repeated measures two-way analysis of the variance indicated that the CBIS did successfully differentiate between the experimental group and the control group, thus lending support to the predictive validity of the CBIS. This finding is strengthened in view of the fact that there existed no significant differences between the groups prior to the RBT instruction. From this, it appears that the CBIS is sensitive to the RBT construct, and thus, further substantiated the construct validity of the instrument. From a primary prevention point of view, it seems that the CBIS could be utilized to measure the effectiveness of various educational programs functioning within the RBT model.

In examining the structural validity of the CBIS, the 11 factors generated from the test items did not coordinate with the structure originally built into the CBIS; that is, the four items for each belief did not form a factor.

In further investigating the independence of the parts of the CBIS, the belief intercorrelations appeared to yield some structure, and a factor analysis was performed on them. The beliefs produced two factors; however, as with the structure generated from the items, there existed no meaningful relationship between them. Thus, although there appears to be some structure inherent within the CBIS the

interrelationships generated no common denominators.

From this, then, it is suggested that the 11 belief components be interpreted at a general level; moreover, although the structure of these beliefs was based on theory, it does not seem to be supported at an empirical level.

Due to scheduling and time limitations, no concurrent validity estimates could be obtained. However, it is felt that these estimates would be very important in further establishing the validity of the CBIS.

CHAPTER 9

Implications and Future Concerns

The Common Belief Inventory for Students was designed to assess rational thinking in children. As a multi-dimensional measure of rationality in children, it appears that much evidence has been generated in this study in support of the CBIS.

All of the items appeared to be contributing to the total score, as well as to the total scores within their respective beliefs. Furthermore, each belief component also appeared to be significantly contributing to the total test score. Generally, the reliability of the CBIS has been established at an adequate level.

Validity estimates for the CBIS were adequate at the face, content, predictive, and construct level, indicating that the instrument is sensitive to the RBT construct; however, the empirical structure of the instrument does not support the theoretical structure upon which it was based. This conflict seriously questions the multidimensionality of the CBIS. With this finding, and in conjunction with the few number of items for each belief, it is suggested that caution be exercised in the interpretation of any movement within the belief scores.

Future Concerns

Future research involving this instrument needs to be concentrated in three basic areas. Firstly, the concurrent validity of the CBIS needs to be assessed. This could be accomplished simply by correlating scores on the CBIS with scores on measures of maladjustment or neuroticism (e.g., Eysenck Neuroticism Scale, Taylor Manifest Anxiety Scale). It is speculated that in light of the established validity estimates from this study, the CBIS would significantly correlate with these indices.

Secondly, the CBIS needs to be administered over a wider range of individuals, particularly the grade range of fourth to twelfth grades. From this wider scope of individuals the sensitivity of the instrument to (1) developmental changes in thinking, (2) sex differences, and (3) normative group comparisons could be better examined. The range of students sampled in this study was not of a wide enough scope to warrant any conclusive statements. It is speculated, though, that developmental, normative, and sex differences would be manifested as a result of sampling over a wider range of individuals. The usefulness of this instrument in various preventive RBT educational programs could also be assessed to a greater degree.

Finally, future research regarding the CBIS needs to further investigate the empirical and theoretical conflict underlying this instrument, particularly if the multi-dimensionality of the CBIS is to be supported and maintained.

In adjoining the empirical and theoretical realms, it is necessary to create a greater independence between the parts of this instrument. In attempting to do this, several suggestions are offered: (1) Some of the items may need to be reworded so as to more specifically align with their respective irrational beliefs, and (2) it is felt that by adding more statements to each belief component, the reliability and validity of the beliefs, as well as for the total test, would be significantly increased.

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APPENDIX A

The Initial Version of the

Common Belief Inventory for Children

The Common Belief Inventory for Students

Name _____
Last First Middle

Date _____ Age _____ Sex _____ Grade _____

The following are sentences which most people your age believe. Below each of the sentences is a number that will show how much you believe in the sentence. Please circle the number that seems right for you. Remember, this is about how you usually think Please take your time and answer every question.

Common Belief	(0%) Never	(25%) Sometimes	(50%) Half the Time	(75%) Almost Always	(100%) Always
1. If a person doesn't have any friends, that means that nobody likes him/her.	0	1	2	3	4
2. I believe I should be different from what I am.	0	1	2	3	4
3. I should be a better person.	0	1	2	3	4
4. I believe I need to change some things about myself.	0	1	2	3	4
5. I believe I should be smarter than I am.	0	1	2	3	4

Common Beliefs	Never	Sometimes	Half the Time	Almost Always	Always
6. I believe that I should be better looking.	0	1	2	3	4
7. A person who doesn't have any friends has got to be unhappy.	0	1	2	3	4
8. I worry about many things.	0	1	2	3	4
9. It's only human to be upset when things don't go my way.	0	1	2	3	4
10. I believe that it helps to worry about some things.	0	1	2	3	4
11. I am unlucky.	0	1	2	3	4
12. I believe I need to always think of other peoples' feelings first, instead of my own.	0	1	2	3	4
13. I believe I need more confidence in myself.	0	1	2	3	4
14. I feel bad about many things that I have done wrong.	0	1	2	3	4
15. I feel bad when I fail at something.	0	1	2	3	4
16. I believe I would like myself better if I had more friends.	0	1	2	3	4

Common Beliefs	Never	Sometimes	Half the Time	Almost Always	Always
17. I worry about what other people are thinking about me.	0	1	2	3	4
18. I always get upset if something important doesn't go the way I want.	0	1	2	3	4
19. I believe some people don't treat me the way they ought to.	0	1	2	3	4
20. Most of the time when I get upset it's because someone else made me mad or hurt my feelings.	0	1	2	3	4
21. I believe that how other people treat me makes a difference in how much I like myself.	0	1	2	3	4
22. I believe that I am selfish because I usually please myself first, and other people second.	0	1	2	3	4
23. If a close friend has his/her feelings hurt, and if I feel badly too, then that tells me how much I really like that person.	0	1	2	3	4
24. I believe that everyone should always know what they want to do in life.	0	1	2	3	4

Common Beliefs	Never	Sometimes	Half the Time	Almost Always	Always
25. I believe that what a person does tells me everything about that person.	0	1	2	3	4
26. Sometimes things happen to me that just shouldn't happen.	0	1	2	3	4
27. When I make a mistake I feel awful.	0	1	2	3	4
28. People should always do their best.	0	1	2	3	4
29. People have no right to make me feel bad.	0	1	2	3	4
30. It's terrible when people make fun of me.	0	1	2	3	4
31. People who do bad things should always be punished.	0	1	2	3	4
32. Children who don't do their school work should always be punished.	0	1	2	3	4
33. Kids who do bad things are bad people.	0	1	2	3	4
34. I feel awful if I don't get what I want.	0	1	2	3	4
35. School is terrible if I don't do well.	0	1	2	3	4

Common Beliefs	Never	Sometimes	Half the Time	Almost Always	Always
36. I always worry about how well I am doing in school.	0	1	2	3	4
37. I am always afraid that dogs will bite me.	0	1	2	3	4
38. I can't work alone.	0	1	2	3	4
39. It's easier to quit a game I am losing than to finish it.	0	1	2	3	4
40. I believe that it is better for my parents to do the things that are hard for me to do.	0	1	2	3	4
41. I always have trouble doing things by myself.	0	1	2	3	4
42. I always need other people to tell me how to do things.	0	1	2	3	4
43. I feel terrible when my friends get yelled at in school.	0	1	2	3	4
44. Things should always turn out the way I plan them.	0	1	2	3	4
45. Life isn't as good as it should be because of things that happened when I was little.	0	1	2	3	4

APPENDIX B

The Final Version of the

Common Belief Inventory for Children

The Common Belief Inventory for Students

Name _____
Last First Middle

Date _____ Age ____ Sex _____ Grade_____

The following are common beliefs which most people your age think. Below each of these beliefs is a number that will show how often you think that belief. Please circle the number that seems right for you. Remember, this is about how you usually think. Please take your time and answer every question.

Common Belief	(0%) Never	(25%) Sometimes	(50%) Half the Time	(75%) Almost Always	(100%) Always
1. If a person doesn't have any friends, that means that nobody likes him.	0	1	2	3	4
2. I believe I should be different from what I am.	0	1	2	3	4
3. I should be a better person.	0	1	2	3	4
4. I believe I need to change some things about myself.	0	1	2	3	4
5. I believe I should be smarter than I am.	0	1	2	3	4

Common Beliefs	(0%) Never	(25%) Sometimes	(50%) Half the Time	(75%) Almost Always	(100%) Always
6. I believe that I should be better looking.	0	1	2	3	4
7. A person who doesn't have any friends has got to be unhappy.	0	1	2	3	4
8. I worry about many things.	0	1	2	3	4
9. It's only human to be upset when things don't go my way.	0	1	2	3	4
10. I believe that it helps to worry about some things.	0	1	2	3	4
11. I am unlucky.	0	1	2	3	4
12. I believe I need to always think of other peoples' feelings first, instead of my own.	0	1	2	3	4
13. I believe I need more confidence in myself.	0	1	2	3	4
14. I feel bad about many things that I have done.	0	1	2	3	4
15. I feel bad when I fail at something.	0	1	2	3	4
16. I believe I would like myself better if I had more friends	0	1	2	3	4

Common Beliefs	(0%) Never	(25%) Sometimes	(50%) Half the Time	(75%) Almost Always	(100%) Always
17. I worry about what other people are thinking about me.	0	1	2	3	4
18. I always get upset if something important doesn't go the way I want.	0	1	2	3	4
19. I believe some people don't treat me the way they ought to.	0	1	2	3	4
20. Most of the time when I get upset it's because someone else made me mad or hurt my feelings.	0	1	2	3	4
21. I believe that how other people treat me makes a difference in how much I like myself.	0	1	2	3	4
22. I believe that I am selfish because I usually please myself first, and other people second.	0	1	2	3	4
23. If a close friend has his feelings hurt, and if I feel badly too, then that tells me how much I really like that person.	0	1	2	3	4

Common Beliefs	(0%) Never	(25%) Sometimes	(50%) Half the Time	(75%) Almost Always	(100%) Always
24. I believe that everyone should always know what they want to do in life.	0	1	2	3	4
25. I believe that what a person does, tells me everything about that person.	0	1	2	3	4
26. Sometimes things happen to me that just shouldn't happen.	0	1	2	3	4
27. When I make a mistake I feel awful.	0	1	2	3	4
28. People have no right to make me feel bad.	0	1	2	3	4
29. It's terribe when people make fun of me.	0	1	2	3	4
30. People who do bad things should always be punished.	0	1	2	3	4
31. Children who don't do their school work should always be punished.	0	1	2	3	4
32. Kids who do bad things are bad people.	0	1	2	3	4
33. I feel awful if I don't get what I want.	0	1	2	3	4

Common Beliefs	(0%) Never	(25%) Sometimes	(50%) Half the Time	(75%) Almost Always	(100%) Always
34. School is terrible if I don't do well.	0	1	2	3	4
35. I always worry about how well I am doing in school.	0	1	2	3	4
36. I am always afraid that dogs will bite me.	0	1	2	3	4
37. I can't work alone.	0	1	2	3	4
38. It's easier to quit a game I am losing than to finish it.	0	1	2	3	4
39. I believe that it is better for my parents to do the things that are hard for me to do.	0	1	2	3	4
40. I always have trouble doing things by myself.	0	1	2	3	4
41. I always need other people to tell me how to do things.	0	1	2	3	4
42. I feel terrible when my friends get yelled at in school.	0	1	2	3	4
43. Things should always turn out the way I plan them.	0	1	2	3	4

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Common Beliefs	(0%) Never	(25%) Sometimes	(50%) Half the Time	(75%) Almost Always	(100%) Always
44. Life isn't as good as it should be because of things that happened when I was little.	0	1	2	3	4