Relationship between Belief System and Depression with Anxiety among Undergraduate Students in Yemen

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ABSTRACT: The first objective of this study was to provide construct validation information on both a single general factor model and two - factor model of irrational beliefs (Ego Anxiety and Discomfort Anxiety). Particular interest was in determining the factor structure of the irrational beliefs as confirming by Rational Emotive Behavior Theory (REBT) concerning the nature of irrational thinking. The second objective of this study was to explore relationship between two- factor model of irrational beliefs and categories of social anxiety with depression.

A sample of 456 undergraduate students drawn from a variety of departments in Taiz University in Yemen completed the General Attitude and Belief Scale (GABS) (e.g., DiGiuseppe, Leaf, Exner & Robin, 1988) as well as Beck's Depression Inventory (BDI-II) (Beck, 1997) and Social Phobia Inventory (SPIN) (Davidson, 2000).

Results of full fledged Confirmatory Factor Analyses (CFA) supported both a single general factor model and two -factor model of irrational beliefs as good construct validity Models for REBT. All of the irrational beliefs were highly ideal loaded in both models with exception to rationality, self -downing and other-downing that obtained statistically significant with moderate to low loadings. Cultural differences on self-downing and the weakness of Rational Emotive Behavior Theory (REBT) on rational belief were outlined.

The hypothesized model of irrational beliefs for social anxiety with depression in full fledged Structural Equation Modeling (SEM) indicated an adequate model fit. 16% from etiology of social anxiety with depression was created by Ego Anxiety (.30) as the first predictor and Discomfort Anxiety (.27) as second one as Ellis hypothesized. Suggestion for further research will be discussed.

KEY WORDS: Irrational Beliefs, Ego Anxiety, Discomfort Anxiety, Social Anxiety, Depression, General Attitude and Belief Scale, Beck's Depression Inventory, Social Phobia Inventory, Confirmatory Factor Analysis (CFA), Structural Equation Modeling (SEM), Construct Reliability, Construct Validity, Discriminant Validity.

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Introduction

One of the most popular forms of psychotherapy in recent decades is Albert Ellis’ Rational Emotive Behavioral Therapy (REBT, Bernard & DiGiuseppe, 1989). REBT is based on the A-B-C-D-E model of psychological disturbance and therapy where ‘A’ is some activating stressful life event (e.g., frustration, failure and rejection). ‘B’ refers to irrational beliefs, and ‘C’ refers to the psychological and behavioral consequences of those irrational beliefs i.e. psychological disturbance and maladaptive behaviors. Within this framework, ‘D’ refers to the therapeutic process of disputing the irrational beliefs while ‘E’ refers to their replacement with adaptive rational beliefs and the consequent reduction in psychological symptoms and maladaptive behaviors.

Consistent with the Greek Stoic and Roman Philosophies and Constructivism, Ellis stressed the idea that people react to activating events through the lens of their belief systems. In essence, people take the activating events in their lives and formulate beliefs that in turn significantly affect their consequences and reactions. Preferences refer to the basic needs, wants, wishes, and desires of an individual. Disturbances occur when the preferential beliefs such as musts, shoulds, and demands are rigid and absolutist. Dysfunction is the result of these beliefs as they are unrealistic, illogical, and often impossible to achieve (Dryden, 1999).

Irrational Beliefs System

Over the last five decades, Ellis (1962) has argued that major irrational belief systems and those cognitions are critical determinants of psychopathology. Ellis’s early and more recent writings, and also his publications on Rational Emotive Behavior Theory always emphasize on irrational beliefs as a basic source of emotional disturbances. The followings are only examples at beliefs that are irrational, superstitious, or ‘senseless’ which are universally inculcated in Western Society and would seem inevitably to lead to widespread neurosis by making oneself right and others wrong, or by projecting, they make oneself wrong and others right (Ellis, 1962).

Irrational Belief No. 1 refers to an absolute necessity for an individual to be loved or approved of virtually every other significant person in his society (Ellis, 1962, 1975, 1994; Ellis & Grieger, 1986). This nation is irrational because it is an unobtainable goal, and if the person strives for it, he becomes less self-directed and more insecure and unhappy. Even those who basically like the individual, they will be turned off by some of his or her behaviors and qualities. The rational person does not sacrifice his or her own interests and desires in order to be admired, but rather strives to express them with flowing creativity and productivity.

Irrational Belief No 2 indicated that one should be thorough, competent, adequate, and achieving in all possible respects in order for one to consider oneself worthwhile. This again is impossibility, and to strive compulsively for it, a person will be in a constant fear of failure and paralysis at attempting anything. Additionally, perfectionistic standards affect social relationships and quickly alienate partners and friends. The rational individual strives to be fully alive, to do well for his own sake rather than to be better than others, to enjoy an activity rather than to engage in it solely for the results, and to learn rather than to try to be perfect.
Irrational Belief No 3: The idea that certain people are bad and wicked and that they should be severely blamed and punished for their villainy and badness. ‘Wrong’ or ‘immoral’ acts are the result of stupidity, ignorance or emotional disturbance. All people are fallible and make mistakes. Blame and punishment do not usually result in a less stupid, better informed and less neurotic personality. If a rational person makes a mistake, he or she accepts and attempts to understand the cause of the behavior, and does not let it become a catastrophe. At the same time, behavior and ethics can and must be judged, if law and order are to prevail.

Irrational Belief No. 4: The idea that it is awful and catastrophic when things are not conducted the way one would like them to be. In other words, frustration reactivity believing it is catastrophic not to have what one desires. This is the logic or syndrome of the spoiled-child. As soon as the tire goes flat the awfulizing self-talk starts: ‘Why has this happened to me? I cannot take this, I cannot stand it’. This result is intense irritation and stress. The rational person avoids exaggerating unpleasant situations and works at improving them, or accepting them if they cannot be improved. When someone is unkind, rejecting, annoying, etc., this is considered the cause of unhappiness. Projecting unhappiness to events is a way of avoiding reality. In practice, unhappiness comes largely from self-statements interpreting the events. Many individuals believe they have no control over their feelings and that they are helpless; the actual truth is that people can control how they interpret and emotionally respond to each life event.

Irrational Belief No 5: The idea that human unhappiness is caused by external factors and people have little or no ability to control their sorrows and disturbances. Feelings responsible for others’ hardships imply that individuals have power to control them and the duty to do so. This is an imposition on the others’ freedom to experience and control their own lives and feelings. If requested to do so, the rational person will attempt to do something that will improve the situation. If nothing useful can be done, he accepts that as the reality of the situation. By being too protective over other peoples’ feelings (because ‘people are fragile and should never be hurt’), relationships become full of dead space, where conflicts developed but nothing is said. Honest communication of current feelings need not be taken as an attack upon the personal worth and security of others.

Traditionally, 11 irrational beliefs were the centre of all studies in Rational Emotive Behavioral Theory until 1980, although Ellis articulated more than 200 irrational doctrines (Ellis, 1972, 1975). Consequently, initial measurements of irrational demands were predicated on a pragmatic classification based on 11 irrational beliefs commonly encountered in nonclinical and clinical practice and research (Ellis, 1995).

Absolutistic Thinking Processes

Recently, Ellis and his colleagues evaluated irrationality with respect to the style or quality of beliefs rather than their specific content as first refinement of Rational Emotive Behavioral Theory (REBT). According to their revised views, the core quality of irrationality is demandingness or absolutistic thinking. According to Ellis (1992), absolutistic thinking consists of irrational beliefs that reflect the tendency of individuals to take their strong preferences for goal achievement (e.g. success, acceptance, and comfort) and turn them into absolute necessities-i.e. dictatorial ‘should’, ‘oughts’, have to’s, and ‘musts’ (Ellis, 1992). In other words, absolutizing, shoulding, and
demandingness are in Rational Emotive Behavior Counseling (REBC) synonymous concepts that refer to the tendency of people to take their preferences for achievement, approval, comfort, and fairness and convert them into musts (Bernard & DisGiuseppe, 2000).

Ellis postulates also three other (possibly derivative) styles of irrational thinking including: Awfulizing, Low Frustration Tolerance and Worthlessness.

1- Awfulizing is the belief that a situation is more than 100% bad: or the beliefs that exaggerate or "catastrophize" negative or aversive life experiences such as terrible, awful, horrible or catastrophic events can occur/have occurred/will occur (Ellis, 1995; Bernard & DisGiuseppe, 2000).

2- Low Frustration Tolerance refers to the belief that one cannot tolerate or stand unpleasant situations or feelings, or unrealistic beliefs that aversive situations cannot be tolerated (Ellis, 1995; Bernard & DisGiuseppe, 2000). For example: I can not stand what is happening/has happened/will happen.

3- Worthlessness/Global Self Rating is the tendency to rate a person's worth by his/hers behavior or is belief that reflects the irrational tendency to make global judgments about a person’s total self-worth instead of evaluating specific behaviors or actions (Ellis, 1992; Bernard & DisGiuseppe, 2000). For Example: I/you/they/am or are totally worthless because of some failure in a specific life area.

Briefly, Walen, DiGiuseppe, and Dryden (1992) subsumed Ellis's 11 irrational beliefs into four categories, which they referred to as "core irrational beliefs." The categories are...
"demands, awfulizing, low frustration tolerance, and global evaluations of human worth as shown in Figure (1) (Weinrach, Ellis, MaLaren, DiGiuseppe, Vernon, & Wolfe, 2001).

Irrationality Dimensions

More recently, Ellis and his colleagues (1995) emphasized as refinement that these four core irrational beliefs or processes, as presented in Figure (1), that they were summarized from 11 irrational beliefs, have to change to assess areas of irrationality such as:
1-Need for Achievement,
2- Need for Approval,
3 - Demand for Fairness,
4 -Demand for Comfort,
5 - Self-Downing, and
6- Other-Downing.

Model of Irrational Beliefs for Emotional Disturbances

Ellis (2003) has been distinguishing between two major forms of anxiety—discomfort anxiety (DA) and ego anxiety (EA). Discomfort anxiety he defined as emotional tension that results when people feel (1) that their comfort (or life) is threatened, (2) that they should or must get what they want (and should not or must not get what they don’t want), and (3) that it is awful or catastrophic (rather than merely inconvenient or disadvantageous) when they don’t get what they supposedly must. Ego anxiety I define as emotional tension that results when people feel (1) that their self or personal worth is threatened, (2) that they should or must perform well and/or be approved by others, and (3) that it is awful or catastrophic when they don’t perform well and/or are not approved by others as they supposedly should or must be.

Generally, Ego anxiety stems from the demands for approval and success and results in self-damning and feelings of inadequacy and/or sinfulness. Discomfort anxiety stems from demands for comfort and result in procrastination, anxiety, anger and self-defeating desires for immediate gratification. In general, ego anxiety is hypothesized to relate to the depressive disorders and discomfort anxiety to the anxiety, anger, and impulse control disorders (Figure 2) (Ellis & Dryden, 1987; Ellis & Velten, 1992; Walen et al., 1980).

REBT (Ellis, 1994) hypothesizes that the core absolutisms and the derivatives are likely reciprocally reinforcing. Therefore, it is not likely that any particular emotional disturbance includes only one absolutism or only one derivative. Instead, any given emotional disturbance involves some configuration of core absolutism in combination with one or more of the derivatives (Ellis, 1962; Ellis & Dryden, 1987; Walen et al., 1980).

The model of emotional disturbance depicted in Figure 2 describes the major tenets of REBT theory's conceptualization of irrational belief and emotional disturbance. The separate delineation of absolutism before the specific demands for approval, success and comfort represents Ellis's (1962) conceptualization of absolutism as an innate tendency in response to goal frustrations.
The general classes of emotional disturbances discussed here, namely, categories of the depressive disorders and the social anxiety. Specific relationships between irrational beliefs and emotional disturbances, however, are difficult to configure due to several unresolved problems in REBT. These problems involve the specific relationship between the core, irrational beliefs and the derivatives (Bernard, 1990; Campbell, 1985; DiGiuseppe & Leaf, 1990; DiGuiseppe, Robin, Leaf & Gormon, 1989). Assessment of the relationship of the irrational beliefs using the Irrational Beliefs Test (Jones, 1968) for depression, cognitive set, and interpersonal assertion competencies was conducted with 114 college women by Cash (1984).

Results from the study showed irrationality on the IBT was related to negative cognitive set, unassertiveness and depression. The researcher found that two of these beliefs (anxious overconcern and perfectionism) predicted depression as measured by the Beck Depression Inventory (Beck, 1970); however, high self expectations and problem-avoidance were also involved with depression. It thus might be argued that insofar as specific irrationality is concerned, depression measured by the BDI has more in common with self-esteem than it does with depression measured by the Zung Depression Inventory.

Deffenbacher and his colleagues (Deffenbacher, Zwemer, Whisman, Hill, & Sloan, 1986) explored the relationship between irrational beliefs, using the Irrational Beliefs Test (Jones, 1969) and a large battery of self-reported anxiety measures. In general, they found four specific irrational beliefs to be predictive of anxiety: frustration reactivity, helplessness, perfectionism (all previously associated with depression), and anxious overconcern (previously associated with both low self-esteem and depression).

REBT assumes that the frequency of self-reported negative affect e.g., depression and social anxiety, would be predicted by the endorsement of irrational ideas for those individuals who experience a variety of negative life events. Some evidence in support of this assumption already exists. Kassinove (1986) assessed the relationship between
irrational ideation and positive and negative self-reported emotions in a sample of 70 adult men and women. Using an early version of the Survey of Personal Beliefs (SPB), a measure of irrational ideation, he found that irrational thinking was moderately related ($r = -0.36$) to the frequency of self-reported mild negative emotions such as sadness, concern, regret, and annoyance. A similar relationship was found when predicting the self-reported frequency of stronger negative feelings (i.e. anxiety, anger, guilt, and depression) from irrational thinking ($r = -0.44$). In addition, irrational beliefs as measured by the SPB were related to scores on the neuroticism scale of the Eysenck Personality Questionnaire with correlations ranging from -0.29 to -0.61.

Warren, Gourides and Jones’s (1988) work on irrational cognitive processes, anxiety, and avoidance was carried on 33 anxiety disorder patients, 33 clinic outpatients from Portland, Oregon and 60 community college students (normal) in Pacific University. They have found that irrational beliefs appeared not only to be characteristic of anxiety disorder patients but also with avoidance behavior as well. Further, these irrational beliefs appear to be associated not only with avoidance specific to agoraphobics but also to avoidance behavior in general, i.e. other anxiety disorder patients, general outpatients, and the normal sample.

Shaw (1989) studied psychometric properties of the General Attitude and Belief Scale (GABS) using a population of 800 university students in Australia. Results from administering the 72-item GABS included no gender differences. Using a maximum likelihood method of factor analysis with oblique rotation, a four factor solution was obtained (need for approval, need for achievement, demand for comfort and rationality). The final solution resulted in 10 rational and 22 irrational items with factor loadings of .35 or higher. Moderate correlations were once again found between sub-scales of the GABS self-downing, need for achievement, need for approval, demand for comfort, demand for fairness and other-downing) and trait anxiety and anger. The findings from this study recommended that irrationality was structured around content areas such as the need for approval, achievement and comfort, rather than irrational processes such as demandingness and awfulizing.

Chang and D’Zurilla’ s study (1996 ) investigated the relationship between emotional disturbance such as depression and anxiety, and the five types of irrational beliefs in 284 undergraduate students (99 men and 185 women) at the State University of New York at Stony Brook(U.S.A). The beliefs tested were: (1) Awfulizing; (2) Low Frustration Tolerance; and (3) Self-Worth; (4) Self-Directed Shoulds; and (5) Other-Directed Shoulds. The latter two irrational beliefs focused on absolutistic thinking which is viewed as the core of psychological disturbance in current REBT as Ellis emphasized. The results indicated that Awfulizing, Low Frustration Tolerance, and Self-Worth are significantly correlated in the expected direction with both depression and anxiety. In contrast, Self-Directed Shoulds was not significantly related to any of the depression and anxiety measures. Other-Directed Shoulds is significantly related only to the measure of anxiety, but in a direction which was opposite to predictions based on REBT theory; that is, more ‘irrationality’ was associated with less anxiety. The researchers commented that this is further evidence that absolutistic thinking is different from other irrational beliefs. They asserted that it is important to note that the results of this study may be valid only for an unselected, non-clinical population. The results also indicated that Low Frustration Tolerance as an irrational belief was a unique predictor of both depression and anxiety.
symptoms. In addition, Other-Directed Shoulds and Self-Worth were found to have unique predictive associations with anxiety Symptoms. However, the relationship between Other-Directed Shoulds and anxiety was in the opposite direction to expectations as predicted by Rational Emotive Behavior Theory.

Rationality and dimensions of irrationality including self-downing, need for achievement, demand for fairness, need for comfort, need for approval and other downing have been probed by using the General Attitude and Belief Scale (e.g., DiGiuseppe, Leaf, Exner, & Robin, 1988). Bernard's (1998) study was conducted on 236 male and 490 females selected from a variety of populations. Half of them were Melbourne university Australia students enrolled in their third and fourth years of their undergraduate program. The other half were members of the general public who attended public evening talks conducted at the University of Melbourne.

First objective of this study was to provide the psychometric properties of General Attitude and Belief Scale. A principal factors analysis was conducted. Seven principal factors with eigenvalues greater than one were identified and rotated to an oblique solution. These seven factors accounted for 58 percent of the variance. Fifty-five of the original 96 items loaded .40 or higher on one of the seven factor. Factor 1 accounted for 34% of the variance and contained nine items all characterized by rational cognitive processes which encompassed the different content domains of achievement, approval, fairness and comfort (e.g., "I want to be liked and accepted by people whom I like, but I realize they do not have to like me just because I want them to."). Factor 1 consists of a general range of rationally-expressed items and is called "Rationality." Factor 2, referred to as "Self-Downing," accounted for eight percent of the variance and included nine items all having in common negative and global self-rating in the face of negative events (e.g., "I believe I would be a worthless person if I achieved poorly at tasks that are important to me."). Factor 3, "Need for Achievement," accounted for six percent of the variance and consisted of nine items spanning across the different cognitive processes of demandingness, awfulizing, and low frustration tolerance with each item being focused on the content area of achievement (e.g., "I must do well at important things and I will not accept it if I do not do well."). Factor 4, "Need for Approval," accounted for four percent of the variance and consisted of seven items related to receiving and not getting approval from others (e.g., "I can't stand being disliked by people who are important to me and it is unbearable if they dislike me."). Factor 5, "Need for Comfort," accounted for 3 percent of the variance and contained nine items involving the importance of comfort and discomfort (e.g., "I can't stand being tense or nervous and I can't stand when I am."). Factor 6, "Demands for Fairness," accounted for 3 percent of the variance and included nine items dealing with the evaluation of unfair and inconsiderate treatment (e.g., "I must be treated fairly by people, and I will not accept unfairness."). Factor 7, "Other Downing," accounted for three percent of the variance and consisted of three items dealing with negative, global ratings of another person (e.g., "If people treat me without respect, it goes to show how bad they really are.").

Second objective of this study was to focus on the inter-correlations for males and females among the different dimensions of irrationality, using the General Attitude and Belief Scale (GABS). The results indicated negative correlations between the rationality
and irrationality areas (dimensions) ranging from -.21 to -.43, and both moderate and strong positive correlations were obtained among the different dimensions of irrationality ranging from .39 to .71. Total irrationality correlated -.44 with rationality. This study also focused on the investigation of the overall correlations of the irrationality dimensions measured by GABS with the variety of self-report cross validation measurements. Total irrationality was positively correlated with Depression and Trait Anxiety. Need for comfort and Self-downing were most strongly correlated with depression and Anxiety. These results were supportive of the relationship between irrational and rational thinking, and emotional distresses.

Using the same questionnaire for irrationality as the present study does (General Attitude and Belief Scale, 1988), MacLannes and Douglas’s research (2003) contained 41 participants. Fourteen were clients with mental health problems and 27 were nursing students. The overall result for this study was that some irrational beliefs are more closely associated each other and with specific types of psychological problems (depression and anxiety). This study illustrated highly significant correlations between irrational beliefs (need for achievement, need for approval, need for fairness other-downing, need for comfort and other-downing) and all of the total irrationalities. Need for achievement significantly correlated with all other irrational beliefs subscales, with the correlations ranging from 0.5 to 0.89, suggesting that it is a major factor in all irrational thoughts. However, self downing varied from between 0.17 to 0.60 suggesting that it is only associated with certain irrational belief subscales. This would also support the view that self downing was only present in specific situations. It was observed that the high correlations between the total irrational scores and the various irrational subscales support the notion that one specific dimension is being measured; as detailed within the REBT literature (Dryden, 2001).

The study also indicated no significant correlations between rationality and irrationality. Most of the correlations were negative indicating that the responses on the rationality subscale were directly opposed to those measured by the irrationality subscales. However, some of the scores between rationality and irrationality subscales were positive even although the correlations were low. One plausible explanation for the low positive correlation is that individuals can have concurrent irrational thoughts and rational thoughts. Ellis (1994) notes that specific events or situations will trigger irrational thoughts and that only when someone has irrational beliefs relating to a situation that has personal relevance to them will they become psychologically distressed. In this study, four irrational beliefs including the need for achievement, the need for comfort, self downing, and total irrationality were significantly associated with the high depression and anxiety group (s).

The problem of irrational thinking is not only central to the investigations in Western society, but also exists across Arabic countries. Many previous studies emphasized the existence of irrationally cognitive doctrines. Rawhany’s study (1987) indicated that irrational beliefs are prevalent by a ratio of 5%-40% among undergraduate students at garden university. This result is supported basically by Mohamed’s study (1992) in Iraq who concluded that irrational ideas and neurotic anxiety are common among undergraduate students in Baghdad University. Finally, Abdul Satar (1993) on Egypt indicated that it is wrong to believe that mental health services such as research,
diagnosis and treatment are no longer an urgent requirement for Arabian populations such as that of Yemen.

Statement of the Problem

Many studies have been conducted on irrational belief dimensions among undergraduate students in developed societies. More and more, they have used counseling skills and cognitive-behavior interventions for disputing the types of irrational thinking such as demandingness, awfulizing, depreciation. Few studies are available from Yemen, however, although such irrational belief systems and their negative consequences such as depression and social anxiety had been observed three decades ago among undergraduate students in Yemen.

More recently, Nadeem (1998) observed that three privileges in Arab Middle East Cultures (e.g., love, protection, and social acceptance), are essential not only for a peaceful psychological life of their members, but also for their very survival. Additionally, Nadeem (1998) indicated that the lack of independence among Yemeni individuals, together with excessive fatalism, is likely to generate not only many obstacles to development, particularly from adolescence onwards, but also trigger emotional disturbances such as depression and social anxiety.

The students in Yemen seem to believe that it is a dire necessity for them to be loved or approved by a significant person in the Yemeni community and the social rejection, especially from opposite gender and special individuals, is deemed catastrophic, horrible and terrible. At the same time, they believe that one must be thoroughly competent, sufficiently adequate and achieving to be worthwhile even without the existence of abilities and qualifications. Consequently, the negative consequences such as signs of weakness, sensation of social rejection by others and loss of status are likely to take place in their mentalities.

The students' behaviors are characterized by avoiding participation in social interactions in order to maintain approval and social acceptance.

These are some examples of the type of irrational doctrines communally prevalent among undergraduate students in a Yemeni community. Such irrationalities and their consequences reflect the style of students' thinking and should be urgently explored by series of scientific studies.

Additionally, there is a dearth of research designed to examine irrationality as a single general factor controlling irrational beliefs and their relationship with emotional disturbances in Yemen population.

Consequently, objectives of this study were to explore structure of irrationality and also examine the relationship between irrational beliefs classification and social anxiety with depression.
Research Hypotheses:

Model 1: full fledged higher Confirmatory Factor Analysis (CFA)

Model 1 (Figure 3) stated that there was one higher order factor labeled, Irrational Beliefs, which was defined by the seven (Rationality, Need for Achievement, Need for Approval, Demand for Comfort, Demand for Fairness, Self-Downing and Other-Downing), correlated lower order factors. Manifest variables were labeled according to Bernard’s labeling of the seven subscales of the General Attitude and Belief Scale (GABS) (Bernard, 1990). Goodness of fit score will be perfect fit for the hypothesized model in Yemeni sample (non-significant Chi-square, CFI 1.00, NFI, 1.00 and RMSEA .000).

![Figure 3: Hypothesized Model of A Single General Factor of Irrational Beliefs](image)

Model 2: full fledged higher Confirmatory Factor Analysis (CFA)

Based on Ellis’s classification for irrational beliefs, measurement model (2) states that there are the two second order factors of irrational beliefs, Ego Anxiety (EA) and Discomfort Anxiety (DA) (Figure 4). Need for Approval, Need for Achievement and Self-Downing are hypothesized to load on Ego Anxiety. Other-downing, demand for Comfort and Demand for Fairness are hypothesized to load on Discomfort Anxiety. Inter-Factor correlation between Ego Anxiety and Discomfort Anxiety will be statistically significant with statistical practical importance. The hypothesized measurement model will have an adequate goodness of fit score for the current sample from undergraduate students in Taiz University in Yemen. The goodness of fit score (non-significant Chi-square, CFI [1.00], NFI [1.00] and RMSEA [.000]) for the two second order factors of irrational beliefs will be statistically significant and perfectly better fit. That means there
is no significance discrepancy between the model hypothesized by REBT and data collected from Yemeni Students.

Model 3: full fledged Structural Equation Modeling (SEM)

Mode 3 assumed the Model 2 was hypothesized to be correlated to categories of social anxiety with depression, namely fear, avoidance, physical symptoms (social anxiety), negative attitude and performance difficulty (depression) (Figure 5). Overall, the hypothesized model of irrational beliefs for social anxiety with depression will be statistically significant. Specifically:

$H_1$: The goodness of fit score for the hypothesized model of irrationality for social anxiety with depression will be statistically significant and adequate better fit (non-significant Chi-square, CFI [.90-1], NFI [.90-1] and RMSEA [.00-08]). Function of this hypothesis will tell us whether the hypothesized model is good model fit, in general, or the hypothesized model need for some modification.

$H_2$: There is a statistically significant and direct relationship between ego anxiety and categories of social anxiety with depression.

$H_3$: There is a statistically significant and direct relationship between discomfort anxiety and categories of social anxiety with depression.
**Method**

**Instruments**

1- **General Attitude and Belief Scale (GABS) (DisGiuseppe, 1988)**

Overall, the General Attitude and Belief Scale (GABS) is a newly developed measurement derived from the current literature of Rational Emotive Behavior Theory. DisGiuseppe, Leaf, Exner and Robin (1988) reported on the development of a new scale of irrationality designed to overcome overlap between irrational beliefs assessments and emotional disorders. Attitude and Belief Scale (GABS) is a second-generation IB scale that has the function of (a) reducing overlap with negative emotion measures, and (b) enhancing content validity by aligning items content with revised theoretical statements about irrationality (Bernard, 1998).

As indicated early, Bernard’s (1990) factor analysis of this scale revealed one rational subscale and seven dimensions of irrationality represented in six subscales (need for achievement, need for approval, demand for comfort, demand for fairness, self-downing and other downing) plus a total irrationality score comprising the sum of the score from the six subscales.

The GABS consists of fifty five items or statements that evaluate how respondents’ level of agreement. The items utilize a five-point Likert Response scale with responses ranging from 1 (Strongly Disagree) to 5 (strongly Agree).

2- **Beck’s Depression Inventory (DI-II) (Beck, 1997)**

The 21-item BDI-II measures the severity of self-reported depression in adolescents and adults (Beck et al., 1996). It is scored by summing the highest ratings for each of the 21 symptoms and takes less than 10 min to complete. Each symptom is rated on a 4-point rating scale ranging from 0 to 3, and total scores can range from 0 to 63. The time frame for the BDI-II ratings is for the “Past Two Weeks, Including Today.” According to Beck et al. (1996), BDI-II total scores ranging from 0 to 13 represent normal to minimal
depression, total scores from 14 to 19 are mild, total scores from 20 to 28 are moderate, and total scores from 29 to 63 are severe.

A number of studies have investigated the psychometric characteristics of the BDI-II with respect to both clinical and nonclinical populations (for a comprehensive review, see Steer & Beck, 2000). These studies have generally found that the BDI-II has high internal consistency (coefficient α > .90) and moderate to strong convergent validities (r > .50) with other self-report and clinical rating scales of depression in adult and adolescent psychiatric patients, college students, and normal adults.

**Three –Factor Model of Depression**

The two previous studies confirmed that Beck’s Depression Inventory contained three-factor model. Byrne (1993) developed model of depression based on Beck’s Depression Inventory that provided a more adequate fit the data (non-significant chi-square, CFI and GFI were closing to 1. RMSEA was .000. Byrne emphasized that there are three domains of depression including Negative Attitude, Performance Difficulty and Somatic Elements. Recently, result of this study was replicated by Osman (1997) by using the same confirmatory analytic strategies. The results were obtained similarly.

Negative Attitude comprised feelings of sadness, pessimism, guilt, punishment, worthlessness, past failure, self-dislike, self criticalness, suicidal thoughts and crying.

Performance Difficulty contained loss of pleasure, loss of interest, indecisiveness, loss of energy, irritability, concentration difficulty and tiredness or fatigue.

Somatic Elements comprised agitation, change in sleep, change in appetite, and loss of interest in sex.

**3-Social Phobia Inventory (SPIN) (Davidson, 2000)**

The Social Phobia Inventory (SPIN) is a self test that was developed by Jonathan Davidson, MD (2000). The SPIN is a well-tested, reliable tool that screens for symptoms of social anxiety disorder and thereby assists patients and psychiatrists in identifying the disorder. In other words, this measurement is valid to use in both research and clinical practice. SPIN self test is intended for those are 18 years of age or older. SPIN measures the three commonly seen types of social anxiety disorder: fear, phobic avoidance and autonomic symptoms such as blushing, sweating, and trembling. The Social Phobia Inventory contains 17 items. Participants are asked to choose one response for item. Each item is rated from 0-4 with a total score ranging from 0-68. Cronbach's coefficients were 0.94 for the full scale, and 0.89, 0.91, and 0.80 for the fear, avoidance, and physiological subscales, respectively.

**Translation Procedures**

All questionnaires used in this study were translated into the Arabic language by the researcher himself. In the second stage, in order to ensure accuracy of the initial translation and validation of the translated inventories, the researcher presented the Arabic and English versions of the instruments to a Yemeni lecturer. This Yemeni lecturer is an Associate Professor with a Master’s and Ph.D. in the field of Psychology from Miami University in the United States. In addition, his Bachelor’s Degree was in the field of English. He has more
than 30 years experience in field of Psychology and has supervised a research in Rational Emotive Behavior Theory.

The review of Arabic grammar in the translated questionnaires was also validated by a lecturer at Universiti Putra Malaysia who has Bachelor’s, Master’s, and PhD from an Arab country and has much experience in teaching Arabic language in University Putra Malaysia.

Sample

Three instruments were distributed to an overall sample of 800 subjects with 456 of the instruments copies returned due to incomplete or multiple answers. Nevertheless, the n=456 met the optimum and adequate required sample size for using Confirmatory Factor Analysis and Structural Equation Modeling (Loehlin, 2004; Hair 2006; Steven 2002).

The faculties of Education, Art and Academic Development of Taiz University were used as the sample from which size has been determined in the present research.

Based on the statistics analysis in Table (1), the Art Faculty students comprised 21.9% (100) of the sample, of whom males comprised 6.8% (31) and females 15.1% (69). Education Faculty students comprised 52.4% (239), of whom 28.7% (131) were male and 23.7% (108) were females. Finally, students from the Academic Development Centre comprised 25.7% (117) of the samples while, 18.6% (85) were males and 7.0% (32) were females.

<table>
<thead>
<tr>
<th>Faculty</th>
<th>Male</th>
<th>Female</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>1-The Art Faculty</td>
<td>31 (6.8%)</td>
<td>69 (15.1%)</td>
<td>100 (21.9%)</td>
</tr>
<tr>
<td>2-The Education Faculty</td>
<td>131 (28.7%)</td>
<td>108 (23.7%)</td>
<td>239 (52.4%)</td>
</tr>
<tr>
<td>3-Academic Development Centre</td>
<td>85 (18.6%)</td>
<td>32 (7.0%)</td>
<td>117 (25.7%)</td>
</tr>
<tr>
<td>Totality</td>
<td>247 (54.2%)</td>
<td>209 (45.8%)</td>
<td>456 (100.0%)</td>
</tr>
</tbody>
</table>

The multivariate significant differences using MANOVA model (table 2) were found among the variables: in need for approval, demand for comfort, demand for fairness and depression with social anxiety across male and female students.

The randomization process was constructed using the lists of names from these departments. Odd numbers were chosen, starting from 1, 3, 5 and so forth. This was used to avoid personal bias.

The sampling rationale for choosing these faculties is that observations relevant to the core of this study, e.g., irrational beliefs, depression and social anxiety, were likely to be detected from students of three faculties. This observation does not mean, however, that students from other faculties do not experience irrationality and neuroticism.
Table 2: Estimated Marginal Means

<table>
<thead>
<tr>
<th>Dependent Variable</th>
<th>Gender</th>
<th>Mean</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1-Male</td>
<td>31.41</td>
<td>4.52</td>
</tr>
<tr>
<td></td>
<td>2-Female</td>
<td>32.18</td>
<td>4.42</td>
</tr>
<tr>
<td>Rationality</td>
<td>1-Male</td>
<td>23.59</td>
<td>5.75</td>
</tr>
<tr>
<td></td>
<td>2-Female</td>
<td>22.88</td>
<td>5.71</td>
</tr>
<tr>
<td>Self-Downing</td>
<td>1-Male</td>
<td>31.32</td>
<td>4.97</td>
</tr>
<tr>
<td></td>
<td>2-Female</td>
<td>32.52</td>
<td>4.94</td>
</tr>
<tr>
<td>Achievement Need</td>
<td>1-Male</td>
<td>23.59</td>
<td>4.54</td>
</tr>
<tr>
<td></td>
<td>2-Female</td>
<td>25.54</td>
<td>4.35</td>
</tr>
<tr>
<td>Approval Need ***</td>
<td>1-Male</td>
<td>31.45</td>
<td>5.50</td>
</tr>
<tr>
<td></td>
<td>2-Female</td>
<td>33.12</td>
<td>5.10</td>
</tr>
<tr>
<td>Comfort Demand ***</td>
<td>1-Male</td>
<td>33.40</td>
<td>5.38</td>
</tr>
<tr>
<td></td>
<td>2-Female</td>
<td>35.76</td>
<td>4.92</td>
</tr>
<tr>
<td>Fairness Demand ***</td>
<td>1-Male</td>
<td>9.16</td>
<td>2.48</td>
</tr>
<tr>
<td></td>
<td>2-Female</td>
<td>9.65</td>
<td>2.53</td>
</tr>
<tr>
<td>Other-Downing</td>
<td>1-Male</td>
<td>13.99</td>
<td>9.146</td>
</tr>
<tr>
<td></td>
<td>2-Female</td>
<td>16.58</td>
<td>9.106</td>
</tr>
<tr>
<td>Depression ***</td>
<td>1-Male</td>
<td>22.12</td>
<td>10.29</td>
</tr>
<tr>
<td></td>
<td>2-Female</td>
<td>27.74</td>
<td>10.59</td>
</tr>
</tbody>
</table>

*** p <.005

Data Analysis

To arrive at exploring the hypothesized models, a confirmatory Factor Analysis and Full Structural Equation Modeling were conducted on the hypothesized single-factor of irrational beliefs model, Two-Factor of Irrational Beliefs and the hypothesized model of irrational beliefs for emotional disturbances using the Amos 16. The program adopted the maximum likelihood estimation to generate estimates in the full-fledged measurement model and full-fledged structural equation modeling. To assess the fit of the three hypothesized models, the analysis relied on a number of descriptive fit indices, which includes the (1) the Chi-square goodness of fit indicator. The Chi-square yields the statistical significance of how well the hypothesized model reproduces the sample covariance matrix. Non-significance implies that the model provides a good fit to the data. However, the Chi-square test is sensitive to large sample sizes, correlation among variables and model size which often results in statistical significance and rejection of a potentially true model. Therefore, several alternative indices are employed. Three other fit indices were employed in the current study. These include the Comparative Fit Index (CFI; Bentler, 1990), the Normative Fit Index (NFI) and Root Mean Square of Approximation / Application (RMSEA; Steiger, 1990). The possible values of CFI and NFI range from zero to 1, with values close to one demonstrating a
good perfect fit. Finally, a value of RMSAE of.08 or less shows a reasonable error of estimation (Hair, 2006; Kline 2005; Steven, 2002).

Normative Data

Prior to conducting both Confirmatory Factor Analysis (CFA) and Structural Equation Modeling (SEM) and considering the sensitivity of this analysis to the distributional characteristics of the data set (N= 456), data were subjected to tests of multivariate normality (Hair et al., 2006). Outliers were not observed in all cases in the three models. Both P1 and P2 were above .001. Both the symmetry (skewnesss) and the “flatness” (kurtosis) of the distribution were within acceptable assumption. Skewness and kurtosis of six irrational beliefs, rationality and five categories of social anxiety and depression equal to .0. Briefly, the data were drawn from a normally distributed population.

Results

Hypothesized Model 1: A Single General Factor (Irrational Beliefs)
Irrational Beliefs was hypothesized to be a second order latent construct for the seven underlying dimensions, namely rationality, achievement, approval, fairness, comfort, self-downing and other downing.

Goodness -Of –Fit- Indices

The results as illustrated in Figure 6, chi-square (5.936) = 6, p = .430, suggested that there was no significant discrepancy between the hypothesized model of irrational beliefs and the observed model. All fit indices exceeded perfectly the recommended threshold values. CFI and NFI approached 1.00 indicated the null model is rejected. RMSEA.000 indicated that the model of irrational beliefs can be generalized perfectly among only undergraduate students in Yemen. Collectively, the goodness of fit indices indicated the hypothesized model fit perfectly the data. Moreover, there were no offending estimates, suggesting that the hypothesized model of Irrational Beliefs was admissible.
Model 1

They indicate the hypothesized model fit perfectly data and the Model is statistically Significant.

A Single General Factor Factor Loadings Observed Variables Measurement Errors Covariance

Chi-square=5.936
df=6
P=.430
N=456
CFI=1.000
NFI=.993
RMSEA=.000

Construct Reliability = .60 --> Moderate
Discriminant Validity = .50 --> Good

A Single General Factor

Irrational Beliefs

Rationality
Achievement
Approval
Fairness
Comfort
Self-Downing
Other-Downing

All Parameters are statistically significant (p < .000) with exception to self-downing (p < .05).

Figure 6: Second-Order Confirmatory Factor Analysis (CFA) For Irrational Beliefs

Covariance and Modification Index

The result above was achieved after taking into consideration the Modification Index (MI). We allowed the residual of rationality to correlate negatively with other-downing and comfort and positively with self-downing as suggested by MI. Moreover, the residuals in measuring were correlated positively between achievement and fairness and self-downing, approval and self-downing, comfort and self-downing, and finally between self-downing and other downing. The details are outlined in Table 3.
Table 3: Results of the CFA Covariance of Irrational Beliefs

<table>
<thead>
<tr>
<th>Other-Downing</th>
<th>Rationality</th>
<th>R</th>
<th>S.E.</th>
<th>C.R.</th>
<th>P</th>
</tr>
</thead>
<tbody>
<tr>
<td>R</td>
<td>R</td>
<td>-.3191</td>
<td>.2577</td>
<td>-3.7367</td>
<td>***</td>
</tr>
<tr>
<td>Rationality</td>
<td>Self-Downing</td>
<td>-.1850</td>
<td>.6081</td>
<td>4.3049</td>
<td>***</td>
</tr>
<tr>
<td>Self-Downing</td>
<td>Approval Need</td>
<td>.1354</td>
<td>1.04</td>
<td>4.7021</td>
<td>***</td>
</tr>
<tr>
<td>Rationality</td>
<td>Comfort Need</td>
<td>.1109</td>
<td>.4662</td>
<td>-3.6612</td>
<td>***</td>
</tr>
<tr>
<td>Self-Downing</td>
<td>Achievement</td>
<td>-.1735</td>
<td>1.07</td>
<td>4.0269</td>
<td>***</td>
</tr>
<tr>
<td>Achievement</td>
<td>Fairness Dem</td>
<td>.1294</td>
<td>.9145</td>
<td>2.8205</td>
<td>.004</td>
</tr>
<tr>
<td>Other-Downing</td>
<td>Self-Downing</td>
<td>-.1584</td>
<td>.6261</td>
<td>4.2194</td>
<td>***</td>
</tr>
<tr>
<td>Self-Downing</td>
<td>Comfort Need</td>
<td>-.3191</td>
<td>1.21</td>
<td>2.3445</td>
<td>.019</td>
</tr>
</tbody>
</table>

R =Correlation, S.E = Standard Error, C.R = Critical Ratio, and P = Probability

Standardized Factor Loadings

All of the factor loadings between irrational belief and its indicator (rationality, achievement, approval, fairness, comfort, self-downing and other-downing) were statically significant p < .000. Self-downing was statistically significant with p < .05. Irrational beliefs in four areas: namely fairness (.79), comfort (.75), approval (.72), achievement (.62) were ideally loaded on irrational belief. Factor Loadings of other-downing rationality and self-downing range from .41, .36 to .12, respectively. Five areas were considered irrationally with exception to self-downing. Its loading is less than rationality. The details are outlined in Table 4.

Table 4: Results of the CFA of Irrational Beliefs

<table>
<thead>
<tr>
<th>Path</th>
<th>Loadings</th>
<th>S.E.</th>
<th>C.R.</th>
<th>P</th>
<th>R²</th>
</tr>
</thead>
<tbody>
<tr>
<td>Irrational Beliefs</td>
<td>Rationality</td>
<td>.3634</td>
<td></td>
<td></td>
<td>.363</td>
</tr>
<tr>
<td>Irrational Beliefs</td>
<td>Achievement</td>
<td>.6216</td>
<td>.5589</td>
<td>6.3231</td>
<td>*** .621</td>
</tr>
<tr>
<td>Irrational Beliefs</td>
<td>Approval</td>
<td>.7232</td>
<td>.560</td>
<td>6.6931</td>
<td>*** .723</td>
</tr>
<tr>
<td>Irrational Beliefs</td>
<td>Fairness</td>
<td>.7934</td>
<td>.7127</td>
<td>6.7246</td>
<td>*** .793</td>
</tr>
<tr>
<td>Irrational Beliefs</td>
<td>Comfort</td>
<td>.7489</td>
<td>.7108</td>
<td>6.4537</td>
<td>*** .748</td>
</tr>
<tr>
<td>Irrational Beliefs</td>
<td>Self-Downing</td>
<td>.1156</td>
<td>.3743</td>
<td>2.0127</td>
<td>.04 .115</td>
</tr>
<tr>
<td>Irrational Beliefs</td>
<td>Other-Downing</td>
<td>.4132</td>
<td>.2299</td>
<td>5.1383</td>
<td>*** .413</td>
</tr>
</tbody>
</table>

Construct and Discriminant Validities

Given the standardized Factor Loadings for each factor, construct reliability, therefore, can be calculated manually. The standardized Factor Loadings with construct reliability are the two basic elements for construct validity (Hair, 2006). The construct reliability for the whole model was .61. Although this ratio is moderately acceptable, it is not statistically significant. Discriminant validity for the model was .50. It is considered statistically significant (Hair, 2006).
Hypothesized Model 2: Two -Factor Model of Irrational Beliefs

Figure 7 shows the results of the two-factor measurement model of irrational beliefs. Non-significant chi-square indicated there is no any significant discrepancy between the hypothesized model and data collected from undergraduates students in Yemen. All fit indices exceeded the recommended threshold values, NFI, CFI >.90, RMSEA<.08, indicating that the model fit perfectly the data and the null model is rejected. Moreover, there were no offending estimates, suggesting that the hypothesized model of irrational beliefs was admissible. The result above was achieved after taking into consideration the Modification Index (MI). We allowed the residuals for self-downing to correlate with other-downing, comfort and fairness as suggested by MI. The inter-factor correlation was r = .99 , indicating that the true construct validity and discriminant validity have been established within two constructs and with one factor .

![Figure 7: Higher Order Confirmatory Factor Analysis (CFA) for Irrational Beliefs as Two - Factor Model](image)

The loadings range was .33 to .70. Both self-downing and other-downing were less loaded with their dimensions than others. The detail is outlined in Table 5.

Construct reliability ranges .65 and .61 for ego anxiety and discomfort anxiety, respectively. Hence, construct validity for irrational beliefs model is supported. Moreover, Discriminant Validity was .50 for each factor. Value of .50 and above is considered significant and good for Discriminant Validity (Hair, 2006).
Table 5: Results of the Loadings

<table>
<thead>
<tr>
<th>path</th>
<th>Estimate</th>
<th>S.E.</th>
<th>C.R.</th>
<th>P</th>
<th>$R^2$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Approval</td>
<td>Ego Anxiety</td>
<td>.639</td>
<td>.307</td>
<td>4.614</td>
<td>***</td>
</tr>
<tr>
<td>Achievement</td>
<td>----</td>
<td>.532</td>
<td>.293</td>
<td>4.541</td>
<td>***</td>
</tr>
<tr>
<td>Self-Downing</td>
<td>----</td>
<td>.330</td>
<td></td>
<td></td>
<td>1.109</td>
</tr>
<tr>
<td>Fairness</td>
<td>----</td>
<td>.702</td>
<td>.311</td>
<td>6.769</td>
<td>***</td>
</tr>
<tr>
<td>Comfort</td>
<td>----</td>
<td>.667</td>
<td>.280</td>
<td>6.704</td>
<td>***</td>
</tr>
<tr>
<td>Other-Downing</td>
<td>----</td>
<td>.383</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Hypothesized Model 3: Irrational Beliefs for Social Anxiety with Depression

Ellis’s classification for irrational beliefs (model 2) was hypothesized to be correlated to indicators of social anxiety with depression, namely fear, avoidance, physical symptoms (social anxiety), negative attitude and performance difficulty (depression). The results as illustrated in Figure 8, chi-square (62.940) = 34, p < .05 suggested that there was no significant difference between the hypothesized model and the observed model. Chi-square was significant due to the big sample size (Hair, 2006; Kline, 2005; Lochlin, 2004; Steven, 2002), correlation and model size. CFI and NFI were above .90, indicating the null model (there is no relationship among variables in the hypothesized model) is rejected. Conversely, CFI and NFI indicated that there is a statistically significant relationship among variables in the hypothesized model.

RMSEA was less than .08 indicating that the model fit the data (hypothesis 1) and the obtained results can be generalized among only Yemeni students population. Moreover, there were no offending estimates, suggesting that the hypothesized model of irrational
beliefs for social anxiety with depression was admissible. The result above was achieved after taking into consideration the Modification Index (MI). We allowed the residuals for observed variables to be correlated as suggested by MI. It is suggested that there are positively and statistically significant correlations among set of irrational beliefs as well as between residuals of depression (negative attitude and performance difficulty). The details are outlined in Table 6.

<table>
<thead>
<tr>
<th>Variable Residuals</th>
<th>R</th>
<th>Variable Residuals</th>
<th>Estimate</th>
<th>S.E.</th>
<th>C.R.</th>
<th>P</th>
</tr>
</thead>
<tbody>
<tr>
<td>Negative Attitude</td>
<td>↔</td>
<td>Performance</td>
<td>.806</td>
<td>.068</td>
<td>10.062</td>
<td>***</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Difficulty</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fairness Demand</td>
<td>-----</td>
<td>Approval Need</td>
<td>.349</td>
<td>.349</td>
<td>9.006</td>
<td>***</td>
</tr>
<tr>
<td>Comfort Demand</td>
<td>-----</td>
<td>Approval Need</td>
<td>.321</td>
<td>.321</td>
<td>8.098</td>
<td>***</td>
</tr>
<tr>
<td>Other-Downing</td>
<td>-----</td>
<td>Approval Need</td>
<td>.289</td>
<td>.289</td>
<td>5.615</td>
<td>***</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Achievement Need</td>
<td>.382</td>
<td>.382</td>
<td>7.520</td>
<td>***</td>
</tr>
<tr>
<td>Fairness Demand</td>
<td>-----</td>
<td>Achievement Need</td>
<td>.323</td>
<td>.323</td>
<td>4.592</td>
<td>***</td>
</tr>
<tr>
<td>Other-Downing</td>
<td>-----</td>
<td>Achievement Need</td>
<td>.354</td>
<td>.354</td>
<td>6.788</td>
<td>***</td>
</tr>
<tr>
<td>Comfort Demand</td>
<td>-----</td>
<td>Self-Downing Need</td>
<td>.376</td>
<td>.376</td>
<td>3.856</td>
<td>***</td>
</tr>
</tbody>
</table>

Overall, the two expected hypotheses were statistically significant. Standardized estimate of path coefficient between Ego anxiety and social anxiety with depression was statistically significant (standardized regression weight = .30, p < .000). That means the participants characterized by irrational thoughts in approval, achievement and self-downing areas have tendency to encounter social anxiety and depression in terms of fear, avoidance, physical symptoms, negative attitude and performance difficulty (hypothesis 2).

As expected in hypothesis 3, standardized estimate of path coefficient between discomfort anxiety and depression with social anxiety was statistically significant (standardized regression weight = -.27, p < .000). This indicates the more irrational beliefs in fairness, comfort and other downing areas are strong tendency to face social anxiety and depression in terms of fear, avoidance, physical symptoms, negative attitude and performance difficulty.

Comparison between Ego anxiety and discomfort anxiety influences on social anxiety with depression was remarked, indicating the former was the strongest predictor for social anxiety with depression (.30) and the latter was the second one (.27).

Total variance for ego anxiety and discomfort anxiety on social anxiety with depression was statistically significant C. R =9. 0475, p < .000. Its value was 16. It is considered large effect size (Cohen, 1989, 2002). This means 16% from etiology of social anxiety and depression was created by irrational beliefs in six areas, namely achievement need, approval need, fairness demand, comfort demand, self-downing and other-downing. Moreover, 84% from etiology of social anxiety and depression was created by other sources. Factor loadings for each latent construct (Ego anxiety, discomfort anxiety and social anxiety and depression) and its indicator (achievement, approval and self-downing, fairness, comfort and other downing, and fear, avoidance, physical symptoms, negative attitude and performance difficulty) were statistically significant (p < .000) ranging from moderate (.33) to strong (.90). The details are outlined in Table 7.

22
Table 7: Standardized Factor Loadings among Variables

<table>
<thead>
<tr>
<th>Path</th>
<th>Estimate</th>
<th>S.E.</th>
<th>C.R.</th>
<th>P</th>
<th>R²</th>
</tr>
</thead>
<tbody>
<tr>
<td>Disorders Discomfort</td>
<td>.272</td>
<td>.118</td>
<td>4.328</td>
<td>***</td>
<td>.163</td>
</tr>
<tr>
<td>Disorders Ego Anxiety</td>
<td>.298</td>
<td>.189</td>
<td>3.745</td>
<td>***</td>
<td>.180</td>
</tr>
<tr>
<td>Fairness Discomfort</td>
<td>.651</td>
<td></td>
<td>.424</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Achievement Discomfort</td>
<td>.541</td>
<td>.219</td>
<td>4.515</td>
<td>***</td>
<td>.382</td>
</tr>
<tr>
<td>Approval Ego Anxiety</td>
<td>.617</td>
<td></td>
<td>.380</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Comfort Discomfort</td>
<td>.737</td>
<td>.175</td>
<td>6.084</td>
<td>***</td>
<td>.543</td>
</tr>
<tr>
<td>Other Downing Discomfort</td>
<td>.348</td>
<td>.083</td>
<td>5.604</td>
<td>***</td>
<td>.121</td>
</tr>
<tr>
<td>Self Downing Ego Anxiety</td>
<td>.345</td>
<td>.170</td>
<td>4.516</td>
<td>***</td>
<td>.119</td>
</tr>
<tr>
<td>Fear Disorders</td>
<td>.897</td>
<td></td>
<td>.805</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Avoidance Disorders</td>
<td>.825</td>
<td>.069</td>
<td>17.555</td>
<td>***</td>
<td>.680</td>
</tr>
<tr>
<td>Physical symptoms</td>
<td>.618</td>
<td>.044</td>
<td>13.434</td>
<td>***</td>
<td>.382</td>
</tr>
<tr>
<td>Negative attitude</td>
<td>.328</td>
<td>.064</td>
<td>6.696</td>
<td>***</td>
<td>.107</td>
</tr>
<tr>
<td>Performance Difficulty</td>
<td>.424</td>
<td>.051</td>
<td>8.816</td>
<td>***</td>
<td>.180</td>
</tr>
</tbody>
</table>

Discussion

In general, the hypothesized models contributed to show evidence for the construct validation of Rational Emotive Behavior Theory. The result of the confirmatory analysis supported the assertion that the irrationality is a dimensional construct including achievement need, approval need, fairness demand, comfort demand, self-downing, other-downing, and rationality. This finding is in keeping with previous studies of irrationality in REBT (Bernard, 1998; Ellis, 1994; Shaw, 1989).

The manifest variables which comprised the seven factors of the GABS (Bernard, 1990) were one of the best models represented by the one general factor of Irrational Belief. A general factor does tend to support Ellis's (1979, 1991) concept of the interdependency among irrational beliefs.

Results of correlation among irrational beliefs were positive and in keeping with previous studies (Bernard, 1998; Shaw, 1989). These results are consistent with correlations reported by Bernard (1990), which showed the self-downing factor more strongly linked to the need for approval and need for achievement than remaining factors. Negative correlation between rationality and self-downing with comfort was supported by REBT. Examination of standardized factor loadings for model indicated that the latent variable of Irrational Belief had the strongest impact on need for fairness and comfort followed by the need for Approval and need for achievement. This result is supported by REBT.

The latent factor of Irrational Belief had statistically significant influence on self-downing, but it was the weakest influence among manifest variables. Yemeni people can
not express openly and frankly about self-downing (If important people dislike me, it goes to show what a worthless person I am). Arab culture dictated its members to repress the thoughts and emotions expressed about self-downing. The Item used to assess comfort demand in General Attitude and Belief Scale (GABS) (if important people dislike me, it is awful and catastrophic) can be expressed openly in Yemeni population. However, the Item used to assess self-downing in GABS (If important people dislike me, it goes to show what a worthless person I am) must not be expressed. It is cultural and social sigma, especially between opposite gender.

The latent factor of Irrational Belief had the weak influence on Rationality. Irrational Belief contributed inversely to change in the Rationality. Generally, REBT argues that rational belief is the logical opposite of irrational belief. Therefore, correlations should be negative and strong with irrational beliefs. "Results, however, did not support this argument.

Moreover, conceptualization of rational beliefs in REBT is still weaker than irrational beliefs. REBT theorists have paid little attention to the development of a comprehensive understanding of rational belief systems. It is likely that rational belief systems are more complicated in nature than is assumed by REBT. One plausible explanation for the positive correlation between the latent factor of irrational beliefs and rationality is that individuals can have concurrent irrational thoughts and rational thoughts.

The general factor of Irrational Belief also had a significant but weak influence on Other-Downing. It is possible that this resulted from the fact that the Other-Downing scale of the GABS (Bernard, 1990) contains only three items. The limited range of the self-downing, rationality and other-downing may have contributed lowly to the moderate construct reliability.

Model 2 indicated that the structure of irrationality in Rational Emotive Behavioral Theory embraces the two second higher factors: Ego Anxiety (EA) and Discomfort Anxiety (DA). Self-downing, achievement need and approval need are loaded on Ego Anxiety, while comfort demand, fairness demand and other-downing are loaded on Discomfort Anxiety. This result is in line with Ellis’s assumption (Ellis, 2003). Similarly, there are no much differences cross model 1 (one second higher factor) and two – factor model. There is fit among goodness of fit indices of model 1 and model 2 and their standardized factor loadings.

Although the general factor of Irrational Belief (Model 1) and latent variables of Ego Anxiety and Discomfort Anxiety (model 2) were showed evidence to construct validity, especially strong correlation in model 2 between Ego Anxiety and Discomfort Anxiety, the model of Two –Factor (Ego Anxiety and Discomfort Anxiety) is more useful than general factor of Irrational Belief at examination their influences on emotional disturbances. Model of Tow-Factor can provide more details on categories of social anxiety and depression.

Results of Model of irrational beliefs classification (Ego Anxiety and Discomfort Anxiety) suggested that categories of emotional disturbance may be more appropriately tied to configurations of irrational beliefs. However, Ego anxiety including achievement need, approval need and self-downing was the best predictor for categories of social anxiety and depression. The second predictor was discomfort anxiety comprising comfort demand, fairness demand and other-downing. Although ego anxiety is a dramatic, powerful feeling that usually seems overwhelming, is often accompanied by feelings of severe depression, shame, guilt, and inadequacy, and frequently drives people to therapy
(or to suicide!), discomfort anxiety is often less dramatic, but perhaps more common (Ellis, 2003). Moreover, both ego anxiety and discomfort anxiety created only 16% from etiology of social anxiety and depression. For further research, what other factors lead to social anxiety and depression in Yemen is more appropriate than focusing only on irrational beliefs. Moderate path analysis for two factors (Ego anxiety and discomfort anxiety) on categories of social anxiety with depression was consistent with REBT assumption relevant to second-generation of Irrational Belief Scale (e.g., GABS). The basic target for designing GABS was to reduce overlap between irrational beliefs and emotional disturbances created by the first – generation of IBs (e.g., IBT) (Bernard, 1998). Positive correlations among irrational beliefs (self-downing with other-downing, achievement with comfort, fairness and other-downing, approval with comfort and other-downing) were in agreement with previous studies (Bernard, 1998; Shaw, 1989).

Further research focusing only on irrational beliefs for emotional disturbances may determine that the irrational beliefs classification, Ego Anxiety and Discomfort Anxiety, in this study is best conceptualized as two schemas of irrational beliefs. However, roles of self-rating and other-rating in the structure of ego anxiety and discomfort anxiety for emotional disturbances need for extra work. Finally, irrational beliefs reflected by General Attitude and Belief Scale (GABS) were based on simple, few and repeated words. Three sentences (I must…it is essential, I cannot stand…it is unbearable… it is awful or catastrophic...) were employed in six irrational belief areas on GABS. Content of GABSItems was aligned as if it was technically ordered. Such this procedure was causes of boring for participants and underestimated value of research in eyes of participants. Moreover, these words and sentences were not enough to systematically reflect a comprehensive system of irrational thoughts. Irrational beliefs as the basic target for theory shouldn’t be narrowed by limited words.

**Suggestions for Future Research**

Several important suggestions for further study stemming from the results of this study:
What is (are) (an) other area(s) Yemeni people feel irrationally about?
What are the rational beliefs related to culture? What is determination of the role of rational beliefs in the construct of each irrational belief?
Moreover, is there a statistically significant relationship between rational beliefs and mental health e.g., self-esteem?

Although the irrational beliefs system had obtained stability and remarked by several studies in several cultures, it should be taken in consideration role of culture in determination nature of both irrational beliefs and rational beliefs. Rationality and Irrationality in REBT are relative to the individual’s particular goals, purposes, motivations, priorities, and options. However, what is considered sound judgment or good sense as rational belief system for an individual in a certain culture may be foolish or irrational in another culture. Rational beliefs (those that are helpful to the individual in a particular context or the logical statement opposite to irrational beliefs) are not always logical or factually supported, but many, probably most, are. Some religious rituals are accepted rational behavior in Islamic culture, while they might be evaluated as irrational behaviors among Indian, European and American cultures.
Rational Emotive Behavior Theory (REBT) was focusing much on distinction between rational preferences as the basic needs through some words (wants, wishes, hopes and desires) and irrational preferential beliefs such as musts, shoulds, and demands). This high distinction was lacking of awareness in Arabic culture (musts refer to illogical belief and wishes refer to logical preference). The suggested way to estimate irrational beliefs system by assessments is using ratio after each item (20%, 40%, 60%, 80%, 100%) with five-point Likert Response scale. Finally, the proposed method to assess irrational beliefs is using multiple assessments created from the same culture conducted in several times on the same samples and replicating the results in another sample from the same culture.

Limitations of the Study

This study focused on two-factor model of Irrational Beliefs based on Ellis’s classification for emotional disturbances (ego-anxiety and discomfort anxiety). Another classification as competing and equivalent models for irrational beliefs for emotional disturbances (three-factor model based on Campbell’s conception for Irrational Beliefs for emotional disturbances) was beyond this research. Irrational beliefs system is various patterns. This study only concentrates on the newest structure of dimensions of irrationality and rationality constructed directly based on Rational Emotive Behavioral Theory.
Somatic elements (agitation, change in sleep, change in appetite and loss of interest in sex) were dropped from model of irrational beliefs for emotional disturbances. It was very low loaded without statistical significance. The study only focused about negative attitude and performance difficulty for depression that both contained 16 items from Beck’s Depression Inventory.
The study focused on undergraduate students at Taiz University, embracing only three faculties within this high caliber academic school.

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