

# Psychometric Properties of the Beck Scale for Depression (Beck Depression Inventory BDI-II) - A Study on a Sample of Students in the State of Kuwait Universities

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## Abstract

The study aimed to identify the psychometric properties of the Beck Depression Inventory (BDI-II) the Arabized version of (Gharib, 2000); the study sample consisted of 500 male and female students from the Kuwaiti universities by 250 males and 250 females on whom the BDI II scale was applied twice; the psychometric characteristics such as the predicted and structural validity, internal consistency, and Cronbach's alpha values were extracted. The results showed that the scale has a high degree of consistency and validity in the Kuwaiti environment, alpha values after the items' deletion and the correlation coefficients of males and females became closer, and there are no significant differences in the degree of the overall depression depending on the variable of sex in the Kuwaiti environment. The study recommended the application of the Beck Depression Inventory scale (BDI-II) due to its high psychometric characteristics in addition to the attempt of developing this inventory to fit the older age groups.

**Keywords:** psychometric properties of the Beck Depression Inventory (BDI-II), students of the Kuwaiti universities.

## 1. Introduction

Depression is a common mental disorder represented in a bad mood, loss of interest or pleasure, low energy, feelings of guilt, minimizing the intrinsic value, sleep disorders or appetite disorders and poor concentration. Depression often comes with symptoms of anxiety, and such problems can become chronic or recurrent leading to significant weakness in the individual's ability to take care of his daily responsibilities (Marcus et al., 2012).

The recent period of the second half of the twentieth century has witnessed a dramatic increase in the prevalence of depression in all parts of the world where the latest statistics released by the World Health Organization pointed out that approximately 7% - 10% of the world's population suffer from depression (Sherbini, 2001, 18).

Depression cannot be easily ignored as the major depression disorders can hinder a person's life, and affect his nutrition, sleep and relationships with others; it is a medical illness that can be cured. It has particular symptoms leading to changes in the sense of the individual towards himself, attributes, or his life, and these symptoms last for at least two weeks. Depression affects the body, mind and emotions and it is possible to treat depression by changing the lifestyle, medications, psychotherapy, or all the above mentioned (Breyes, 2010,11).

The (BDI-II) is considered a means to assess depression and determine its type and severity, and it represents an early and successful attempt for measuring the degree of depression in the personality and identifying the quality of this depression among adults and adolescents in an immense popularity and it is designed to examine the individuals aged 13 years and above (Beck, Steer, and Brown,1996).

## 2.1. Study Problem

Depression is an impediment to students, preventing them from adapting to and coping with the academic study, and facing them with difficulty at work and daily lives; therefore, the university needs to make efforts and planning to assess the mental health of students in order to reduce and eliminate the mental disorders among them. Accordingly, it is necessary to look at the depression scales, and their psychometric characteristics appropriate for the environment of Kuwait. Due to the lack of studies on the (BDI-II) scale in the educational field and its psychometric characteristics in the Kuwaiti environment, the study came to discuss the psychometric properties of the (BDI -II), and its relationship with some variables concerning the students of the Kuwaiti universities. This study seeks to answer the following questions:

1. What are the psychometric characteristics of the (BDI-II) scale among the students of the Kuwaiti universities?
2. Are there statistically significant differences at the level of significance ( $\alpha \leq 0.05$ ) between the mean degrees of the students on the (BDI-II) scale that are attributable to the variable of (sex) among the students of the Kuwaiti universities?

## 2.2. Study Objectives

This research aims to identify the psychometric characteristics of the (BDI-II) scale and verify the existence of differences in the mean degrees of respondents on this scale depending on the variable of sex.

### 2.3 . Study Importance

The importance of this study lies in the importance of the subject of mental disorders among students, one of which is depression, which has a direct impact on the scientific and practical life of the university student; therefore, it is necessary to identify the concept of depression and the scales which tried to determine its degree among students, including the (BDI-II), and prove the appropriateness of its psychometric characteristics to the environment of Kuwait since there is a lack in the studies on the psychometric characteristics of the (BDI-II) for the depression in the Kuwaiti environment, according to the knowledge of the researcher; this study can provide psychological researchers with information about the possibility of using the (BDI-II) in the Kuwaiti environment.

### 2.4. Study Limitations

The application of this study was limited to the students of the Kuwaiti universities enrolled in the second semester of the academic year 2016, so the results of this study will be limited to communities similar to those of this study.

## 3. Theoretical Framework:

### 3.1. Depression Disorder:

The symptoms of depression are associated with a range of negative outcomes including low social performance, quality of life, high physical disability, cognitive impairment, and suicide, and therefore, it is extremely important to detect depression and initiate the appropriate treatment (Zarit & Zarit, 2007).

(Lewinsohn, 1986) stated that the level of activity of the depressed is less than that of others; there is a steady relationship between the increase in depression, social disparity and the reduced physical weakness, and the reduced level of action and movement. Furthermore, the depressed interact less than the non-depressed, and that their verbal activity represented with the size of speech, sentence length, and the way of pronunciation is affected by the depressive case.

(Hinds, 2008) indicated that depression affects the brain and the central nervous system and it is characterized by a severe depression, feelings of inferiority and isolationism, and inability to concentrate, but this disease has different forms, and often remains unclear and incomprehensible for the individuals who have not faced it previously. Depression could be severer to the degree that the person who does not see any value to life and who suffers from a sense of inability to deal with the responsibilities of life in a successful way; it might also affect the individuals' relationships in his career and family noting that many of those who commit suicide do so at times of depression.

As for the study of depression, the existence of an organic explanation is attributable to what research revealed with regards to the prevalence of this disorder in families without the other, and its prevalence among twins even if they are raised in different social conditions; this means that there is a genetic explanation that if one of the identical twins who grew up apart becomes depressed, the other would not necessarily become depressed either in the present or in the future. This applies on the other mental disorders that there is still a strong belief that the genetic factors play a major role (Ibrahim, 1998; Arieti, 1991).

(Gelder, et, al., 1989) pointed out that the impact of the genetic factor in depression is not clear unequivocally; there is no clear genotype for depression which points to the difficulty of having a simple genetic explanation for all types of depression.

There is a role of biochemical factors, and the imbalance of chemical elements in the body in cases of depression; some aspects of depression may be a result of the imbalance in potassium and sodium of the depressed. This imbalance might directly affect the possibilities of a sense of comfort, which in turn affects his role in fomenting nerves. This is confirmed when the level of sodium in the nervous cells increases and the sodium level drops to become average in the depressed after being subjected to a successful treatment from cases of depression (Wardle, 1980). The natural functions of the brain and the central nervous system rely on a series of neurotransmitters, and such chemicals represent a major part in the delivery of messages from one nerve cell to another through the spaces between the nervous cells; this systematic transition of electrical signals forms the complicated interactions which are represented in our thoughts, feelings, and patterns of individual behaviors (Hinds, 2008). On the other hand, many of the cases of depression do not necessarily arise as a result of social events or social disasters due to separation and loss that there are cases of depression which affect people in cases of exposure to loss, which is called success depression (Akiskal, 1986, 269).

Depression can be a temporary, rational and emotional reaction which is often associated with depression /mood of the losses and disappointment. There are many scales that can be used in the assessment of depression in various symptoms, including questionnaires such as the Beck Depression Inventory (BDI), and Hamilton Depression Rating Scale (HDRS) (Editore, 2015). The BDI was designed to measure the severity of depression symptoms in adults and adolescents, which is made up of 21 items, each item takes values of (0-3), where zero indicates the lowest degree of depression, and 3 indicates the highest degree of depression (Beck,

Steer, and Brown, 1996). The total degrees are calculated through adding the degrees of all items that the degrees ranging between zero and 13 indicate minimal depression, the degrees that fall between 14 and 19 reflect a moderate level of depression, the degrees that fall between 20-28 reflect a moderate degree, and finally the degrees which range between (29-63) reflect a severe level of depression (Dozois, 2010).

There are three versions of the (BDI): the original scale, which was published for the first time in (1961), the revised version which was published later in the year (1978) which is the BDI-1A, and the BDI-II which was published in (1996). The (BDI) is widely used as an assessment tool by those working in the field of health care as well as the psychologist researchers; the (BDI) was used as a model for the development of the depression scale in children (Kovacs, 1992).

The Beck Depression Inventory supports three factors, namely: the negative attitudes towards self (cognitive symptoms), low performance value (behavioral symptoms), and somatic complaints (emotional symptoms) (Shafer, 2006). Although it is designed as a screening tool rather than a diagnostic tool, the BDI is sometimes used by health care providers in order to reach a quick diagnosis (Hersen, Turner, and Beidel, 2007).

One of the basic characteristics that lead to an increased demand for the use of the (BDI-II) is that the majority of people are able to complete the 21 items from the inventory of this scale within a period of 5-10 minutes (Farinde, 2013, 57). The Beck scale faces the same problem as any personal scale that such symptoms can be doubled or underestimated by the patient; furthermore, the manner and circumstances surrounding the patient during the completion of the questionnaire affect the results; the patient who fills out the questionnaire from a medical group would lead to different results than answering the questionnaire by mail (isolated conditions) (Bowling, 2005).

The (BDI-II) is selected to evaluate the clear symptoms and attitudes of the phenomena of depression rather than a commitment with a certain theory; furthermore, the (BDI-II) aims to determine the severity of the symptoms not to classify the depression diseases, and so on. Accordingly, the (BDI-II) should be supplemented with other information to conduct a comprehensive assessment and diagnosis of depression. (Dozois and Covin, 2004)

### 3.2. Previous Studies

The researcher has referred to a number of studies on the subject of the study and he found a limited number of Arab Studies addressing the psychometric characteristics of the (BDI-II), in addition to foreign studies. The following is a presentation for each:

(Beck, Steer and Garbin, 1988) conducted research studies focusing on the Beck Depression Inventory (BDI) and confirmed its psychometric safety; it was applied on psychological samples and other samples. The scale was reviewed for the years from 1961 until June 1986. The meta-analysis of the estimates of the internal consistency of the BDI scale resulted in the fact that the reliability coefficient values was (0.86) for the psychiatric samples, and (0.81) for the other samples, and that the correlations between the different versions of the BDI are very high, while the correlation between the BDI and the other symptoms of the non-clinical samples is high; therefore, caution should be available in interpreting the results as being indicative of depression in these samples. The results showed that the BDI distinguishes between the subsections of depression, and differentiates between depression and anxiety.

(Dozois, Dobson, and Ahnberg, 1998) conducted a study on the assessment of psychometric characteristics of the (BDI-II) and the (BDI-I), and the differences between the sexes. The study resulted that both scales have enjoyed a high degree of internal reliability and the results of the operational analysis that in spite of the importance of each factor, they varied by gender, and that the (BDI-II) scale is stronger than the (BDI-I) scale.

(Gharib, 2000 a) conducted a study that aimed to identify the psychometric characteristics of the second image of the Beck Depression Inventory BDI-II in the Egyptian environment that it was applied on a sample of (145) Egyptian university students and (36) psychiatric patients; the results showed that the scale enjoys a high level of reliability, which reached (83) as well as the validity of the concept and the operational validity in the Egyptian environment, and that it can be applied on the Egyptian environment.

(Gharib, 2000 b) also conducted a study that aimed to identify the operational /factorial structure of the (BDI-II) of the students of university in Egypt; the study sample consisted of (114) college students in Egypt and the BDI II scale was used as a tool for the study. The results showed the presence of similarity between the operational components of depression among the college students in Egypt with other university students in Western societies; the depression measured through the (BDI-II) consisted of the cognitive-emotional factor and the physical factor.

(Al-Musawi, 2001) conducted a study on the psychometric properties of the (BDI-II) scale for the students of the Bahrain University; the techniques of exploring the factorial analysis were used and the study was applied on (200) students enrolled in the University of Bahrain. The study reached to valid and reliable data for

the (BDI-II), and presented three significant factors to the students' responses; the study resulted that there is a strong support for the safety of the psychometric tests of the BDI-II scale as a scale for the depression of the students of university in Bahrain and even in the Arab culture, which is significantly different from the Western culture in all values and taboos.

(Randolph et al., 2001) conducted a study on the psychological assessment of the (BDI-II) and the primary health care to patients; this study aimed to evaluate the psychometric characteristics of the (BDI-II) scale; the study results showed that the (BDI-II) gives reliable results that are internally consistent, and valid in the medical environment for the primary health care, which indicates that the use of the (BDI-II) may improve the detection and treatment of depression in patients.

(Ghassemzadeh et al., 2005) conducted a study on the psychometric characteristics of the (BDI-II) in the Persian language; the study aimed to identify the psychometric characteristics of the (BDI-II) in Persian for a sample of Iranian university students, which consisted of (125) volunteers from two Iranian universities; the results showed the support and validity of these data for the Persian (BDI-II) and its validity as a scale of depression symptoms in the non-clinical samples.

(Al-Saqqaf, 2007) conducted a study that aimed to identify the prevalence of depression and its levels among the female students in the university housing in Sanaa, and the relationship between the age and academic level and the degree of depression; the researcher built a treatment program based on the cognitive behavioral theory, and the study sample consisted of (276) female students from the university housing and the therapeutic program was applied on (14) students of high degrees on the Beck depression Inventory scale; the results indicated that there is a linear relationship between age and the degree of depression, an inverse relation between the academic level and the degree of depression, and a significant difference between the average degrees of the students before and after applying the therapeutic program and in favor of the post-scale.

(Campbell et al., 2009) conducted a study on the operational analysis of the symptoms of depression for the English speakers of the university students in the Caribbean: the psychometric characteristics of the (BDI-II); the study aimed to develop the psychometric characteristics of the (BDI-II) with the Caribbean university students, some of them are women whose average age is 25. The results showed that the BDI-II is suitable to the category of the university students in the Caribbean.

(Mumarriah, 2010) conducted a study that aimed to codify the Aaron T. Beck Depression Inventory II to measure the depression on the Algerian environment. The sample consisted of (998) members of Al-Hadj Lakhdar University of Batna whose ages ranged between 18- 49. The results indicated that the inventory is characterized by a great ability to distinguish between those who had high levels of depression and those with low levels which characterizes it with a high degree of validity. The results also showed that the inventory is characterized by high psychometric conditions on the samples of the Algerian environment making it usable in the fields of psychological research, or clinical diagnosis.

(Wang & Gorenstein, 2013) conducted a study on the psychometric characteristics of the Beck depression scale; it aimed to re-examine the psychometric characteristics of the (BDI-II) as a self-scale of depression in a varied group of community (psychological samples and non-psychological and medical samples). The results indicated that the internal consistency was (0.90), the scale reliability ranged between (0.73-0.96), and the correlation between the (BDI-II) and the (BDI-I) is high and large in addition to a large overlap with depression and anxiety scales. Also, the methods used in detecting depression vary according to the type of the sample, and the ability to distinguish between depression and non-depression among individuals.

(Al-Nafisa, 2015) presented a study that aimed to identify the differences between the mean degrees of anxiety and depression among smokers and non-smokers; the study sample consisted of (107) smokers and (113) non-smoker. The study used Tyler scale of anxiety and Beck depression scale as tools for the study. The results showed that there were statistically significant differences in the level of anxiety among smokers and non-smokers in favor of the smokers, and that there were statistically significant differences between smokers and non-smokers in the level of depression in favor of smokers.

#### **What distinguishes the current study from the previous ones?**

The previous studies have used the (BDI-II) and applied it on different samples in different environments, and they have examined the psychometric characteristics of this scale; some studies examined the relation of this scale with some variables, such as the kind of the study sample; however, this study is characterized with examining the psychometric characteristics of the (BDI-II) and its relationship with some variables, which has been applied in the Kuwaiti environment.

#### **4. Method and Procedures**

The researcher adopted the descriptive approach in this study through referring to the theoretical literature and the previous studies on the subject of the Beck Depression Inventory (BDI-II) scale.

#### 4.1. Study Population and Sample

The study population consisted of all the students of the Kuwaiti universities, who are registered during the year (2016) where (500) students by (250) males and (250) females were selected from the study population randomly.

#### 4.2. Study Scale

In order to achieve the objective of the study, the Beck Depression Inventory (BDI-II), Arabized and translated by Gharib (2000), who has reviewed the translation several times at spaced intervals and presented the translation along with the original English text to a group of professors of psychology in Egypt and the United States for review and any possible amendments; the proposed amendments have been discussed to reach to a validity of translation as much as possible. Finally, he prepared the proposed copy which expresses what is meant by the original text. The (BDI-II) consisted of (21) items, each of which contains a symptom of depression and the scale gradation includes four points (0-3), so the degree of zero means a lack of supply, and the degree of (3) means the existence of the offer by a high degree, so the range of the total degree on the scale was (0 to 63).

He applied it in the Egyptian environment on (145) male and female students of the Egyptian universities. The reliability coefficient was confirmed through the re-application method by a time span of two weeks that it was (0.74) for females, (0.75) for males, and (0.74) for the total group, and the validity of such scale was confirmed through the discriminatory validity. The current study applied this scale on the students of the Kuwaiti universities.

#### 4.3. Procedures of the Study Application:

In order to reach to the objectives of the study and answer its questions, the researcher did the following:

- The researcher extracted (BDI-II) which is Arabized by Gharib (2000).
- The researcher applied the inventory on the students of the Kuwaiti universities as well as the Jaber scale (2015) of the anxiety scale, the edited version of Al-Badri scale (2003) on the same sample, taking into account the variable of sex where 250 males and 250 females were chosen.
- After data collection and computerization, the appropriate statistical treatments were used to extract validity and reliability (internal consistency).
- The researcher organized and extracted the results according to the study questions.
- The researcher discussed the results and wrote a set of recommendations.

#### 4.4. Statistical treatment:

In order to reach the objectives of the study and answer its questions, the following statistical methods were applied:

- The arithmetic means and standard deviations of the (BDI-II).
- The correlation coefficients were extracted between the (BDI-II) scale and Al-Jaber scale (2015) of anxiety, the edited version of Al-Badri Scale (2003), and between each item of the inventory and the total degree, and between the two applications to ensure the reliability of (Test- Retest ).
- The Cronbach Alpha equation was used to extract the indicators of the internal homogeneity – discrimination transactions (corrected correlation), and the value of Alpha of reliability.

#### 5.1. Study Results:

Below are the results of the study which aimed at detecting the psychometric properties of the Beck Depression Inventory (BDI-II) on a sample of the students of the universities of Kuwait, and the results will be displayed according to the study questions:

The first question: What are the psychometric characteristics of the Beck Depression Inventory (BDI-II) for the students of the Kuwaiti universities?

To answer the first question, the indicators of the correlational validity, structural validity, and internal consistency were extracted in addition to the indicators of the corrected correlation (discrimination) on all the items of the scale and their totals. The following are the results:

##### The scale's Psychometric Characteristics

**First: validity.** The validity of the (BDI-II) was confirmed through two methods: structural validity and the correlational validity.

##### 1. Structural Validity

To ascertain the validity of the Beck Depression Inventory (BDI-II), it was applied on the first sample consisting of (500) male and female students from the universities in Kuwait by (250) males and (250) females. The correlation coefficients of each item were calculated with the total degree of the scale; table (1) shows that.



**Table (1) correlation coefficients between each item and the total degree of the scale**

no	item	correlation coefficient	no	item	correlation coefficient
1	grief	0.68**	12	loss of interest	0.63**
2	pessimism	0.58**	13	hesitation in decision-making	0.60**
3	previous failure	0.59**	14	lack of value	0.64**
4	loss of enjoying life	0.63**	15	lack of energy at work	0.69**
5	remorse	0.70**	16	changes in sleep system	0.66**
6	feeling of being subject to punishment	0.69**	17	susceptibility to anger	0.63**
7	lack of self-love	0.71**	18	changes in appetite	0.59**
8	self-criticism and blaming	0.61**	19	difficulty in concentrating	0.62**
9	suicidal thoughts	0.47**	20	fatigue or stress	0.55**
10	crying	0.57**	21	loss of interest in sex	0.55**
11	excitement	0.68**			

\*\* Significant correlation coefficients at the level of ( $\alpha \leq 0.01$ )

Table (1) shows that the correlation coefficients between the scale items and the scale as a whole ranged between (0.68-0.47); this indicates the presence of high correlation coefficients between the scale items and the total degree at the significant level of ( $\leq 0.01\alpha$ ), which are strong indications for the structural validity of the scale.

## 2. The Correlational Validity

Jaber Scale of validity (2015), the edited version of Al-Badri Scale (2003), was used after confirming its validity and reliability; the scale consisted of (28) items, each of which had three alternatives whose weights ranged (1-3); its validity and reliability were confirmed where the reliability coefficient through the test and re-test method amounted to (0.84).

The researcher calculated the correlational validity to show the relationship between the (BDI-II) and the (anxiety scale) as the depression and anxiety clinically overlapped. Jaber scale (2015), the edited version of Al-Badri scale, was applied on the study sample. The results of the study showed that the correlation coefficients between the results of the study sample through the (BDI-II) and the anxiety scale for the study sample as a whole was (0.851), which is significant at the level of ( $\alpha \leq 0.01$ ); the correlation coefficient between the two scales was (0.861) at the significance level of ( $\alpha \leq 0.01$ ) for the males' sample, and (0.882) at the significance level ( $\alpha \leq 0.01$ ) for the females' sample; these values indicate the presence of a statistically significant correlation between the two scales, an indicator of the structural validity.

### Second: Homogeneity (Internal Consistency) and Reliability

In order to ensure the internal consistency and the reliability of the (BDI-II) scale, Cronbach's Alpha was used for the extraction of the corrected Item - Total Correlation and the reliability indicators (Alpha if Item Deleted) on the initial application of the inventory; the second application was applied on the same sample after two weeks to extract reliability through the method of testing and re-testing.

#### 1. Internal consistency- Cronbach's alpha Method

Reliability has been applied through Cronbach's Alpha for all the terms of the (BDI-II), and the scale as a whole on the sample consisting of (500) male and female students. Table (2) illustrates this.

**Table 2: Cronbach's Alpha coefficients and the discrimination of the scale items on the sample as a whole (n = 500)**

Item	Mean if Item Deleted	Variance if Item Deleted	Scale Item- Total Correlation	Scale	Corrected
				Alpha if Item Deleted	Alpha if Item Deleted
Grief	A1	25.2400	102.3271	.3729	.7995
Pessimism	A2	25.3080	101.2717	.4471	.7954
previous failure	A3	25.3340	102.0626	.4335	.7964
loss of enjoying life	A4	25.3380	102.6130	.4000	.7981
Remorse	A5	25.2900	102.8837	.3541	.8006
feeling of being subject to punishment	A6	25.2600	102.0766	.3908	.7985
lack of self-love	A7	25.2480	102.7480	.3442	.8012
self-criticism and blaming	A8	25.2320	103.6775	.3033	.8036
suicidal thoughts	A9	25.2840	103.4262	.3442	.8011
Crying	A10	25.2720	103.4209	.3573	.8003
Excitement	A11	25.3220	103.2448	.3651	.7999
loss of interest	A12	25.2140	102.9581	.3524	.8007
hesitation in decision-making	A13	25.2760	103.6271	.3589	.8003
lack of value	A14	25.3120	101.9546	.4263	.7967
lack of energy at work	A15	25.3820	102.9420	.4169	.7974
changes in sleep system	A16	25.2000	102.2285	.4178	.7971
susceptibility to anger	A17	25.4760	106.4062	.3167	.8024
changes in appetite	A18	25.5440	105.8277	.2970	.8032
difficulty in concentrating	A19	25.3040	104.3363	.3058	.8031
fatigue or stress	A20	25.3420	104.0932	.3701	.7998
loss of interest in sex	A21	25.3420	104.0692	.3168	.8026
			N of Cases = 500.0	N of Items = 21	
			Alpha = .8076		

The results showed that the Cronbach's Alpha coefficient of the scale as a whole amounted to (0.807), which is an acceptable reliability coefficient since it exceeds (0.70) as stated by (Malkawi and Odeh, 2014). Table (2) shows that the Corrected Item - Total Correlation for all the scale items ranging from (0.29) changes in appetite, and (0.44) pessimism. All of them are significant and larger than (0.20); they are acceptable reliability transactions and their deletion do not affect the alpha value.

**Table 3: Cronbach's Alpha coefficients and the discrimination of the scale items on the male sample (n = 250)**

RELIABILITY ANALYSIS - SCALE (ALPHA)					
Item		Mean if Item Deleted	Scale Variance if Item Deleted	Scale Item- Total Correlation	Corrected Alpha if Item Deleted
grief	A1	26.3320	104.8331	.3833	.8054
pessimism	A2	26.3640	104.8107	.4068	.8041
previous failure	A3	26.4640	104.0328	.4870	.8003
loss of enjoying life	A4	26.4080	104.8289	.4222	.8034
remorse	A5	26.4360	104.4879	.4055	.8042
feeling of being subject to punishment	A6	26.4320	105.2022	.3770	.8057
lack of self-love	A7	26.4480	105.7182	.3398	.8078
self-criticism and blaming	A8	26.3720	106.1301	.3138	.8093
suicidal thoughts	A9	26.4560	106.3133	.3428	.8075
crying	A10	26.2840	105.5696	.3777	.8056
excitement	A11	26.4600	105.7353	.3782	.8056
loss of interest	A12	26.2120	104.7059	.3988	.8045
hesitation in decision- making	A13	26.3360	105.9830	.3796	.8056
lack of value	A14	26.3960	103.7743	.4666	.8010
lack of energy at work	A15	26.4400	105.8297	.4010	.8046
changes in sleep system	A16	26.2840	105.2162	.4211	.8035
susceptibility to anger	A17	26.5920	108.5477	.3442	.8075
changes in appetite	A18	26.6360	107.7264	.3164	.8086
difficulty in concentrating	A19	26.4080	106.9815	.3036	.8096
fatigue or stress	A20	26.4400	107.9422	.3030	.8093
loss of interest in sex	A21	26.4400	107.6610	.2797	.8108
<b>Total Males</b>		N of Cases = 250.0		N of Items = 21	
		<b>Alpha = .8134</b>			

The results showed that the Cronbach's Alpha coefficient of the scale as a whole for the male group was (0.7334), which is a high reliability coefficient. Table (3) shows that the corrected correlation coefficients between the scale items and the total degree of the male group ranged between (0.313) self-criticism and blaming, and (0.487) the previous failure, all of which are significant and larger than (0.20); also, they are acceptable reliability transactions and their deletion do not affect the total value of Alfa.



**Table 4: Cronbach's Alpha coefficients and the discrimination of the scale items on the female sample (n = 250)**

RELIABILITY ANALYSIS - SCALE (ALPHA)					
		Mean if Item Deleted	Scale Variance if Item Deleted	Scale Item- Total Correlation	Corrected Alpha if Item Deleted
grief	A1	24.1480	97.8374	.3561	.7895
pessimism	A2	24.2520	95.9001	.4794	.7823
previous failure	A3	24.2040	97.9381	.3830	.7879
loss of enjoying life	A4	24.2680	98.5102	.3671	.7888
remorse	A5	24.1440	99.0555	.3048	.7926
feeling of being subject to punishment	A6	24.0880	96.6027	.4140	.7859
lack of self-love	A7	24.0480	97.2989	.3632	.7891
self-criticism and blaming	A8	24.0920	99.0317	.2936	.7934
suicidal thoughts	A9	24.1120	98.1962	.3539	.7896
crying	A10	24.2600	99.6309	.3185	.7915
excitement	A11	24.1840	98.5684	.3529	.7896
loss of interest	A12	24.2160	99.6238	.2878	.7935
hesitation in decision- making	A13	24.2160	99.4311	.3258	.7911
lack of value	A14	24.2280	98.1848	.3773	.7882
lack of energy at work	A15	24.3240	98.2199	.4220	.7861
changes in sleep system	A16	24.1160	97.2917	.4081	.7864
susceptibility to anger	A17	24.3600	102.1912	.2814	.7933
changes in appetite	A18	24.4520	101.9595	.2650	.7940
difficulty in concentrating	A19	24.2000	99.6627	.3022	.7925
fatigue or stress	A20	24.2440	98.2414	.4375	.7855
loss of interest in sex	A21	24.2440	98.4744	.3491	.7898
Total females		N of Cases = 250.0		N of Items = 21	
		<b>Alpha = .7976</b>			

As for the females, the results show that the Cronbach's Alpha coefficient for the scale as a whole stood at (0.7976), which is a high reliability coefficient indicating an acceptable reliability degree; furthermore, the corrected correlation coefficients between the scale items and the total degree ranged between (0.281) susceptibility to anger, and (0.479) pessimism, all of which are significant and larger than (0.20), which are acceptable reliability transactions; their deletion do not affect the overall value of Alpha.

**Second, test method and the (Test- Retest)**

The (BDI-II) was applied twice with a two-week interval time on the study sample, which amounted to (500) male and female students by (250) males and (250) females; the reliability coefficient through the (Test-Retest) method for males was (0.882) at the significance level of ( $\alpha \leq 0.01$ ), the average degree in the first application was (27.73) by a standard deviation of (10.75), while the average degree in the second application was (28.74) by a standard deviation of (10.67). As for the female group, the reliability coefficient through the (Test-Retest) was (0.866) at the significance level ( $\alpha \leq 0.01$ ), the average degree in the first application was (25.42) by a standard deviation of (10.38), while the average degree in the second application was (27.17) by a standard deviation of (10.78).

The total reliability coefficient through the test-retest for the scale as a whole was (0.877) at the significance level of ( $\alpha \leq 0.01$ ), and the average degree in the first application was (26.58) by a standard deviation of (10.62), while the average degree in the second application was (27.96) by a standard deviation of (10.72).

**Second question:** are there statistically significant differences at the level of significance ( $\alpha \leq 0.05$ ) between the means of the students' degrees on the (BDI-II) due to the variable of (sex) for the students of the Kuwaiti

universities?

To answer the second question, (T) test of the independent samples was applied to detect the differences between the males and females on the total degree of the scale; Table (5) shows that.

**Table (5): T-Test results to detect the differences between males and females**

Item	sex	N	Mean	Std. Deviation	Std. Error Mean	t. value	p.
Grief	males	250	1.44	1.18	0.07	1.412	0.159
	females	250	1.30	1.16	0.07		
Pessimism	males	250	1.40	1.17	0.07	1.225	0.221
	females	250	1.27	1.17	0.07		
previous failure	males	250	1.22	1.16	0.07	-0.568	0.570
	females	250	1.28	1.20	0.08		
loss of enjoying life	males	250	1.57	1.20	0.08	2.598	<b>*0.010</b>
	females	250	1.29	1.21	0.08		
Remorse	males	250	1.45	1.20	0.08	0.639	0.523
	females	250	1.38	1.18	0.07		
feeling of being subject to punishment	males	250	1.29	1.12	0.07	0.709	0.479
	females	250	1.22	1.16	0.07		
lack of self-love	males	250	1.46	1.13	0.07	0.154	0.878
	females	250	1.44	1.20	0.08		
self-criticism and blaming	males	250	1.58	1.23	0.08	1.537	0.125
	females	250	1.42	1.22	0.08		
suicidal thoughts	males	250	1.31	1.13	0.07	-0.077	0.939
	females	250	1.32	1.19	0.08		
Crying	males	250	1.36	1.22	0.08	0.562	0.575
	females	250	1.30	1.17	0.07		
Excitement	males	250	1.37	1.10	0.07	1.153	0.249
	females	250	1.26	1.15	0.07		
loss of interest	males	250	1.48	1.15	0.07	0.576	0.565
	females	250	1.42	1.18	0.07		
hesitation in decision-making	males	250	1.41	1.07	0.07	1.506	0.133
	females	250	1.26	1.12	0.07		
lack of value	males	250	1.07	0.98	0.06	0.408	0.684
	females	250	1.03	1.00	0.06		
lack of energy at work	males	250	1.10	1.18	0.07	-0.149	0.882
	females	250	1.11	1.22	0.08		
changes in sleep system	males	250	1.48	1.23	0.08	0.880	0.380
	females	250	1.38	1.21	0.08		
susceptibility to anger	males	250	1.32	1.10	0.07	-0.391	0.696
	females	250	1.36	1.18	0.07		
changes in appetite	males	250	1.34	1.19	0.08	0.564	0.573
	females	250	1.28	1.19	0.07		
difficulty in concentrating	males	250	1.40	1.13	0.07	0.546	0.585
	females	250	1.34	1.17	0.07		
fatigue or stress	males	250	1.31	1.14	0.07	0.424	0.672
	females	250	1.26	1.18	0.07		
loss of interest in sex	males	250	1.39	1.16	0.07	1.345	0.179
	females	250	1.25	1.17	0.07		
Total degree	males	250	28.74	10.63	0.67	1.642	0.101
	females	250	27.17	10.78	0.68		

Table (5) shows that the arithmetic means and standard deviations for all the scale items were weak suggesting that the level of depression of the Kuwaiti youth is low; the total degree was (28.74) for males and (27.17) for females noting that the total degree of the scale was (66).

The results showed no differences in all the scale items between males and females at the statistical

significance level of ( $\alpha \leq 0.05$ ) except for the feature of (loss of enjoying life), where the differences were in favor of males by an arithmetic mean of (1.57) by an average level, while the average of females was (1.29) by a low level.

## 5.2. Results Discussion

The results of the answers to the first question: What are the psychometric characteristics of the Beck Depression Inventory (BDI-II) for the students of the Kuwaiti universities? The (BDI-II) scale enjoys a high degree of reliability; the results indicated to the safety of the items in terms of the validity of discrimination and that the scale enjoys a good validity and has a statistical significance with the anxiety scale, which is consistent with the previous studies that showed that the scale has a good degree of validity and reliability. There is a discrepancy between the results of this study compared with the previous studies, where (Beck, Steer and Garbin, 1988) indicated that the values of the reliability coefficients of the (BDI-II) was (0.86) for the psychological samples and (0.81) for the other samples. Gharib (2000 a) also found that the reliability coefficient of the scale was (0.83); (Wang, Gorenstein, 2013) also showed that the reliability coefficient of the scale ranged between (0.73-0.96) as well as a large overlap with the scales of depression and anxiety. Furthermore, Gharib (2000 a) showed varied coefficients of the corrected correlation between the Beck second scale and the anxiety scale; the disparity in the reliability and validity coefficients are attributed to the Kuwaiti environment which is different from other environments where previous studies have been conducted, such as the Egyptian environment as well as the nature of the study sample consisting of the university students compared with the samples of some previous studies that included other categories such as psychiatric patients.

The scale enjoys a degree of reliability for the male and female groups and the reliability coefficient values for the two groups varied a little where the degree was (0.813) for males and (0.797) for females; the reliability coefficient through the (Test-Retest) for the male group was (0.88) and (0.86) for the female group. The results also showed a degree of validity for the two groups where the correlation coefficient between the second scale of Beck and the anxiety scale for the male group was (0.86) and (0.88) for the female sample. This result was higher than the results of Gharib (2000 a) where the scale was applied on the university students in the Egyptian environment; the reliability coefficient in the test-retest method was (0.74) for the female group, and (0.75) for the male group. This is attributed to the fact that both males and females are subjected to comparable levels of stress and emotions, and the fact that the sample is taken from the same environment which is the university; therefore, all of them are subject to the same pressure of study and community; furthermore, both males and females approach one another in treatment and social interactions making them vulnerable to frequent levels of factors that lead to depression.

These results are consistent with the results of (Al-Musawi, 2001), which confirmed the strong support of the safety of the psychometric for the (BDI-II) scale as the anxiety scale of the university student of Bahrain and in the Arab culture; the results are also consistent with the results of (Randolph et. al., 2001), which showed that the Beck Depression Inventory (BDI-II) gives reliable results that are internally consistent and valid in the medical environment of the primary health care, which indicates that the use of (BDI-II) scale may improve the detection and treatment of depression in patients in addition to (Ghassemzadeh et, al., 2005), which showed the support of the Persian (BDI-II) scale by data and its credibility as well as its validity as a scale of depression symptoms in non-clinical samples.

It should be noted that (Wang, Gorenstein, 2013) showed a considerable overlap with the scales of depression and anxiety, and that the ways of detecting depression differ according to the type of the sample and the ability to distinguish between depression and non-depression for individuals.

The results of answering the second question showed that there is no statistically significant differences at the level of significance ( $\alpha \leq 0.05$ ) between the means of the total degree on the Beck scale for depression (BDI-II) due to the variable of (sex) for the students of the Kuwaiti universities, except for (the loss of enjoying life); the results showed differences in favor of males, in the sense that females enjoy life more than males. The reason for the lack of differences in the total degree is attributed to the convergence of the conditions of the university environment for both males and females, and the convergence of services available for both sexes in the Kuwaiti environment; it should be noted that the degree of enjoying life was greater in females due to the customs and traditions of respect for females and providing them with all the necessary services to facilitate the conduct of their lives, especially that the Kuwaiti environment predispose them with distinctive conditions in terms of mobility in a private car, and the presence of escorts most of the time while being on the move. It should also be noted that the studies conducted on different samples of non-Kuwaiti environments showed that females have higher degrees of depression than males in most items of depression and anxiety.

## 6. Recommendations

In light of the results that have been reached, the researcher recommends the following:

1. The researchers' use of the (BDI-II) scale in the Kuwaiti environment, given the good psychometric properties

- in measuring the degree of depression in the Kuwaiti environment, as it is reached by this study.
2. Applying Beck II scale (BDI-II) on the other communities and confirming its psychometric properties, such as the school students and the psychiatric patients.
  3. Conducting further studies and research related to depression and its relationship with the personal variables, and on different samples, especially the elderly.
  4. Conducting further studies on the different degrees of depression depending on the variable of age and codifying or developing (BDI) so that it can be applied on the elderly groups.

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