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# Negative thoughts in depression: A study in Iran

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The cognitive theory of depression proposes significant relations between negative thoughts and depression. Evidence for the model has been widely observed in Western countries. However, despite the high prevalence of depression in the Middle East (ME), there has been limited research that has evaluated the cognitive profiles of people living in this region, and especially in non-Arab countries like Iran. The current research examined these relationships in Iran. Convenience sampling was used to recruit 80 depressed and 80 non-depressed individuals via advertising in clinics and public areas, respectively. Depression status was checked with a structured interview, the Major Depressive Disorder subscale of the Psychiatric Diagnostic Screening Questionnaire, and the Beck Depression Inventory-II. All participants completed the Automatic Thoughts Questionnaire-Negative to examine the frequency of negative automatic thoughts. Unlike other results from Arab countries, depressed participants indicated significantly more negative thoughts towards self and future compared with the non-depressed group. The results of the present study are consistent with the negativity hypothesis of the cognitive theory of depression. Further research is needed in the in ME, to investigate other hypotheses of this theory in this region. Strengths and limitations of the present study are discussed.

***Keywords:*** Depression; Negative thoughts; Culture.

Depression is a major cause of years lived with disability (YLD) based on global burden of disease (GBD) studies. Within the mood disorders, Major Depressive Disorder (MDD) accounted for 85% of YLD and disability adjusted life years (DALY) in 2010. MDD rates are the highest in Eastern Europe and Middle East (ME) countries such as Iran, compared to other regions worldwide. Moreover, MDD is the third major reason for disability adjusted life years in the ME (Ferrari et al., 2013). Considering these statistics, conducting empirical studies that investigate the vulnerability factors underlying depression in this region is of great importance. So far, different models tried to conceptualise the depressive disorder based on different components related to the onset and maintenance of depression.

One of the major approaches to depression is Beck's cognitive theory. According to this theory (Beck, 1967; Beck, Rush, Shaw, & Emery, 1979), depressed individuals have a general tendency towards negative thoughts and self-schema due to their negative beliefs about not only

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themselves (e.g. "I am worthless"), but also the whole world (e.g. "the world is unfair") and the future (e.g. "the future is hopeless") (e.g. Beck et al., 1979). Negative self-schemata affect even negative interpretation styles through dysfunctional attitudes (Beck, 1987). Nine core hypotheses for the cognitive theory of depression have been identified (Clark, Beck, & Alford, 1999); the first and most important of which is the negativity hypothesis stating that self-referent negative cognitions are predominant in depressed people. The negativity hypothesis plays a deciding role in the cognitive theory of depression in a way that it is like a root for the eight remained hypotheses (Beshai, Dobson, & Adel, 2012). Self-referent negative cognitions alter the content and process of one's thinking, and distort one's cognitions towards negative thoughts. Once activate, these thoughts prevail in the stream of consciousness and play a critical role in developing, maintenance and recurrence of depression (Williams, Watts, MacLeod, & Mathews, 1997). A major focus of cognitive therapy, which lies in Beck's cognitive theory, is, therefore, to challenge and modify negative thoughts (e.g.Beck, 1967 ; Beck et al., 1979).

It has been argued that culture affects cognitive processes (Nisbett, Peng, Choi, & Norenzayan, 2001), and it therefore seems logical that negative thoughts and their expression might also be affected by culture. In line with this hypothesis, Saint Arnault, Sakamoto, and Moriwaki (2005) assessed the relationship between negative core self-descriptors and depressive symptoms amongst 79 Japanese and 50 American women. There was a significant correlation between depressive symptoms and negative core self-descriptors only amongst American women, while there were no significant differences between American and Japanese women in terms of their negative core self-descriptors. Their results suggest that culture helps to determine the impact of negative self-cognitions on psychological functioning related to depressive disorder (Saint Arnault et al., 2005).

Another cross-cultural study carried out between dysphoric individuals in Egypt, an Arab country in the ME, and Canada showed that negative thoughts related to self and world were significantly higher amongst Egyptians compared to those of Canadians (Beshai et al., 2012). These differences held, even after controlling for dysphoria. On the other hand, a cross-cultural comparison between Western and Egyptian patients showed that Egyptian depressed people had more somatic symptoms because physical complaints are more acceptable in comparison to psychological complaints in Egypt (Okasha, 2004). Kleinman (2004) has also suggested that Chinese people experience depression physically rather than mentally (Kleinman, 2004). However, a recent study conducted by Beshai, Dobson, Adel, and Hanna (2016) revealed there were no significant differences in negative thoughts between depressed Canadian and Egyptian participants (Beshai et al., 2016). All of these results emphasise that the role of different factors (like negative thoughts) in depression and the way in which depressive symptoms are expressed in Middle Eastern countries are not yet fully understood.

In summary, despite the fact that depression is highly prevalent in the Middle Eastern communities, there is still a lack of research on the relationship between negative thoughts and depressive symptoms in a non-Arab Middle Eastern country, Iran. Although treatment based on the cognitive theory of depression (Beck et al., 1979) is the most applied treatment in Iran, insufficient research has investigated whether the principles of Beck's cognitive therapy fit with Iranian depressed people. The current study assessed the relationship between negative thoughts and depression in an Iranian sample.

## METHOD

### Participants

Flyers that contained research aims, volunteer requirements and benefits, patient rights and researchers' contact information were posted in psychiatry and psychology clinics to recruit the depressed group. For the non-depressed group, a similar flyer was posted in subway stations and shopping and cultural centres of Tehran to recruit healthy individuals. All interested participants were requested to call the research team to receive additional information and to ascertain their willingness to participate. Volunteer sampling was applied to select 80 patients with depressive disorders (20–60 years old, 55 females) and 80 controls (20–54 years old, 41 females) from Iranian people who lived in Tehran. Informed consent was obtained from all participants included in the study.

### Procedure

The study protocol was approved by the local research committee. All participants signed a written consent form and were asked to fill out a demographic questionnaire comprising items on age, gender, the education level and marital status in a quiet room of a health clinic.

All participants were screened using the Major Depressive Disorder and three other subscales of the Psychiatric Diagnostic Screening Questionnaire (PDSQ). Potential participants who met the cut-off point for depression based on PDSQ scores of $\geq$9 and did not meet the exclusion criteria based on three other subscales of PDSQ (Psychosis, Bipolar Disorder and Drug Abuse/Dependence) were assessed by two Clinical Psychology graduate students using the Structured Clinical Interview for DSM-IV Axis I Disorders (SCID-I) to make a diagnosis of depression. Non-depressed individuals were excluded if they had experienced a

history of depression or any of the above exclusionary diagnoses.

All participants completed the Beck Depression Inventory II (BDI-II) and the Automatic Thoughts Questionnaire-Negative (ATQ-N). The researchers were present in the room to answer any questions about the surveys. Finally, all participants were provided with a gift package including refreshments, a pen and a CD in appreciation of their cooperation. The CD contained a variety of electronic brochures, prepared by experts in counselling, about different kinds of psychiatric problems and disorders (especially depression), self-help solutions and potential related professional services. All procedures performed in this study involving human participants were in accordance with the ethical standards of the institutional research committee and with the 1964 Helsinki declaration and its later amendments or comparable ethical standards.

## Measures

### *Psychiatric Diagnostic Screening Questionnaire*

The PDSQ is a self-report questionnaire designed by Zimmerman and Mattia (2001) to screen the most common DSM-IV Axis I disorders encountered in outpatient settings (Zimmerman & Mattia, 2001). The questionnaire consists of 125 questions arranged in 13 subscales (for the diagnosis of 13 Axis I disorders). This research used four subscales of PDSQ, namely major depressive disorder, psychosis, alcohol and drug abuse/dependence (39 items in total). The internal consistency of PDSQ subscales has been confirmed with an average Cronbach's alpha of .80, and average test–retest correlation coefficient is .83 (Zimmerman & Mattia, 2001). In the present study, the Cronbach's alpha coefficient for the depression subscale of PDSQ (Dep-PDSQ) was .88.

### *Structured Clinical Interview for DSM-IV Axis I Disorders*

The SCID is commonly used for the diagnosis of major psychiatric disorders based on the DSM-IV (First, Gibbon, Spitzer, & Williams, 1996). In the present study, it was used to assess current depressive symptoms as well as screening questions to detect psychosis, mania, and substance/alcohol abuse/dependence. Previous research in Iran reported Kappa coefficients of approximately 0.6 for diagnoses of mentioned disorders (Sharifi et al., 2009).

### *Beck Depression Inventory-II*

The BDI-II (Beck, Steer, & Brown, 1996) is a 21-item self-report inventory designed to evaluate the presence and severity of depression symptoms. Items are scored on a four-point Likert scale (from zero to three), so the total score of the BDI-II ranges between zero and 63 and higher scores indicate more severe depression. Three common factors have been suggested over different studies which include cognitive, affective and somatic factors. Previous research has confirmed the internal consistency (Cronbach's alpha = .87–.91) (Ghassemzadeh, Mojtabai, Karamghadiri, & Ebrahimkhani, 2005) and test–retest reliability (Kappa: .74) of the BDI in Iran (Ghassemzadeh et al., 2005). In the present study, the Cronbach's alpha coefficient was excellent ($\alpha = .92$).

### *Automatic Thoughts Questionnaire-Negative*

The ATQ-N (Hollon & Kendall, 1980) includes 30 negative statements through which the frequency of automatic negative thoughts associated with depression is measured. The respondents have to mark the frequency of each negative thought (e.g. I am a failure) during the past day on a five-point Likert scale from one (Never) to five (Always). The total scores of the ATQ-N range between 30 and 150 with higher scores reflecting greater frequency of negative thoughts. Based on exploratory research with clinically depressed individuals conducted by Zettle, Webster, Gird, Wagener, and Burdsal (2013), the ATQ-N is comprised of five subscales: demoralisation, self-criticism, brooding, amotivation and interpersonal disappointment (Zettle et al., 2013). A previous study conducted in Iran has shown excellent internal consistency (Cronbach's alpha = .96) and test–retest reliability ($r = .84$) as well as high correlation with the Beck Depression Inventory ($r = .77$) (Ghassemzadeh, Mojtabai, Karamghadiri, & Ebrahimkhani, 2006). In the present study, the Cronbach's alpha coefficient was excellent ($\alpha = .96$).

## Data analysis

Descriptive statistics were computed for each measure. Comparisons were made across the different scales for cases with MDD as compared to controls without MDD using inferential statistical methods (i.e. *t*-tests, multiple regression, analysis of variance [ANOVA], Pearson's correlation analysis) and to test for the association of automatic negative thoughts with the experience of current depression in adults. All analyses were completed using SPSS 18 for Windows®.

# RESULTS

The mean ages of the depressed and non-depressed groups were 33.2 (9.77) and 32.5 (8.34) years, respectively (see Table 1). The two groups had no significant differences in terms of age, $t\ (158) = .51$, $p > .05$, education

**TABLE 1**
Demographic characteristics of the patients with depressive disorders and healthy individuals

| | | *Depressed group* (n = *80*) n *(%)* | *Non-depressed group* (n = *80*) n *(%)* | p |
|---|---|---|---|---|
| Gender | Female | 55 (69) | 41 (51) | .02 |
| | Male | 25 (31) | 39 (49) | |
| Education level | ≤High school diploma | 34 (42) | 23 (29) | .06 |
| | >High school diploma | 46 (58) | 57 (71) | |
| Marital status | Married | 45 (56) | 52 (65) | .12 |
| | Single | 29 (36) | 27 (34) | |
| | Divorced | 6 (8) | 1 (1) | |

**TABLE 2**
The mean scores of depression and the Automatic Thoughts (ATQ-N) and its dimensions in depressed and non-depressed groups

| | *Depressed group* (n = *80*) | | *Non-depressed group* (n = *80*) | | |
|---|---|---|---|---|---|
| | M | SD | M | SD | t* |
| PDSQ-MDD | 12.28 | 3.15 | 2.95 | 2.26 | 21.51 |
| BDI-II | 29.20 | 8.15 | 6.02 | 3.73 | 23.11 |
| Cognitive | 11.75 | 3.86 | 1.83 | 1.87 | 20.63 |
| Affective | 10.93 | 3.55 | 2.37 | 1.95 | 18.86 |
| Somatic | 6.51 | 2.71 | 1.81 | 1.53 | 13.48 |
| ATQ-N | 90.89 | 21.63 | 47.22 | 10.16 | 16.34 |
| Demoralisation | 33.49 | 8.41 | 18.07 | 4.25 | 14.63 |
| Self-criticism | 22.70 | 6.68 | 11.58 | 2.87 | 13.66 |
| Brooding | 16.79 | 3.85 | 9.35 | 2.45 | 14.55 |
| Amotivation | 8.75 | 2.83 | 4.89 | 1.92 | 10.06 |
| Interpersonal disappointment | 11.65 | 3.79 | 5.65 | 1.62 | 12.99 |

*Note*: ATQ-N = Automatic Thoughts Questionnaire-Negative; BDI-II = Beck Depression Inventory-II; PDSQ-MDD = Psychiatric Diagnostic Screening Questionnaire-major depressive disorder subscale.
*All *t*-ratios are significant at $p < 0.001$.

level, or marital status ($p > .05$). However, a significant difference in male/female ratio was observed between the two groups ($X^2 = 5.10$, $p = .02$).

As expected, the depressed group scored significantly higher than the non-depressed group on the BDI-II, $t(158) = 23.11$, $p < .001$, the MDD subscale of the PDSQ, $t(158) = 21.51$, $p < .001$, as well as the ATQ-N, $t(158) = 16.34$, $p < .001$) and its dimensions: demoralisation, $t(158) = 14.63$, $p < .001$, self-criticism, $t(158) = 13.66$, $p < .001$, brooding, $t(158) = 14.55$, $p < .001$, amotivation, $t(158) = 10.06$, $p < .001$ and interpersonal disappointment, $t(158) = 12.99$, $p < .001$ (see Table 2 for details). In addition, the strength of depressive symptoms in the cognitive, affective and somatic dimensions was significantly higher in the depressed group than those of the non-depressed group ($p < .001$).

Tables 3 and 4 show the positive correlation scores of Dep-PDSQ, ATQ-N, BDI-II as well as ATQ-N and BDI-II's domains. Table 3 shows significant positive correlation between scores of the BDI-II and ATQ-N amongst MDD group, $r(80) = .60$, $p < .001$, compared with control group, $r(80) = .21$, ns.

Table 4 further shows positive correlation between the ATQ-N score and the cognitive dimension of BDI-II, $r(80) = .59$, $p < .001$, compared with the counterpart group, $r(80) = .05$, $p > .05$. There was no significant correlation between the ATQ-N score and BDI somatic symptoms in the control group.

To compare the depressed group in terms of gender and depression severity, BDI-II scores were categorised as mild (14–19), moderate (20–28), and severe (29–63), and their effects on ATQ-N scores. A $2 \times 3$ ANOVA was conducted with gender (male; female) and the different severities of depression (mild, moderate, severe) as independent variables and ATQ-N scores as the dependent variable. The results showed different levels of depression had a significant effect on the ATQ-N score, $F(2,74) = 13.47$, $p < .001$, $\eta p^2 = .26$. Post-hoc comparisons using Scheffe's test indicated that all three possible pairs were statistically different. That is, individuals with higher levels of depressive symptoms had significantly more negative automatic thoughts compared to individuals with relatively fewer depressive symptoms. However, the effect of gender on the ATQ- N scores as well as the interaction of gender and depression severity was not significant, $F(1,74) < 1$, and, $F(2,74) < 1$, respectively (see Table 5).

To test if the subscales of ATQ-N (demoralisation, self-criticism, brooding, amotivation, and interpersonal disappointment) were significantly associated with depressive symptoms, measured by BDI-II, a multiple regression analysis was used. These results indicated that only two subscales, demoralisation, $b = .47$, $t(78) = 4.65$, $p < .001$ and amotivation, $b = .23$, $t(78) = 2.33$, $p = .02$, could significantly predict BDI-II scores. Demoralisation and the lack of motivation accounted for 34%, $F(1,78) = 41.30$, $p < .001$ and 4%, $F(1,77) = 5.44$, $p = .02$, of the variance in levels of depression, respectively.

## DISCUSSION

This study examined the relationship between negative thoughts and depressive symptoms in a non-Arab Middle Eastern country, Iran. The results showed that patients with depressive disorders scored higher than the non-depressed group on a measure of negative automatic thoughts (i.e. the ATQ-N) and its subscales (i.e. demoralisation, self-criticism, brooding, amotivation and interpersonal disappointment). Moreover, there was a significant positive linear relationship between the intensity of depression and negative automatic thoughts

**TABLE 3**
Pearson's correlation coefficients for self-report measures amongst Depressed versus non-depressed individuals and all participants

| | *Depressed* (n = *80*) | | *Non-depressed* (n = *80*) | *All participants* (n = *160*) | | |
|---|---|---|---|---|---|---|
| | *BDI-II* | *ATQ-N* | *PDSQ-MDD* | *BDI-II* | *ATQ-N* | *PDSQ-MDD* |
| BDI-II | — | .60** | .62** | — | | |
| ATQ-N | .21 | — | .63** | .85** | — | |
| PDSQ-MDD | .57** | .18 | — | .90** | .84** | — |

*Note*: Coefficients for non-depressed participants are presented in the left below the diagonal, depressed participants are presented above the diagonal; all participants are presented in the right below the diagonal. ATQ-N = Automatic Thoughts Questionnaire-Negative; BDI-II = Beck Depression Inventory-II; PDSQ-MDD = Psychiatric Diagnostic Screening Questionnaire-major depressive disorder subscale.
**$p < .001$.

**TABLE 4**
Pearson's correlation coefficients for scores on BDI subscales and ATQ-N measures

| | *Depressed* (n = *80*), *non-depressed* (n = *80*) | | | | *All participants* (n = *160*) | | | |
|---|---|---|---|---|---|---|---|---|
| | *BDI Cognitive* | *BDI Affective* | *BDI Somatic* | *ATQ-N* | *BDI Cognitive* | *BDI Affective* | *BDI Somatic* | *ATQ-N* |
| BDI cognitive | — | .64** | .26* | .59** | — | | | |
| BDI affective | .34** | — | .42** | .51** | .87** | — | | |
| BDI somatic | .09 | .21 | — | .30** | .70** | .75** | — | |
| ATQ-N | .05 | .38** | −.02 | — | .83** | .82** | .67** | — |

*Note*: Coefficients for non-depressed participants are presented in the left below the diagonal, depressed participants are presented above the diagonal; all participants are presented in right below the diagonal. ATQ-N = Automatic Thoughts Questionnaire-Negative Scale; BDI = Beck Depression Inventory-II.
*$p < .05$; **$p < .01$.

**TABLE 5**
The mean scores and standard deviations of different depression levels and gender in the negative form of automatic thoughts questionnaire (ATQ-N)

| | *Depression level* | | *Gender* | |
|---|---|---|---|---|
| | *Female* (n = *55*) | | *Male* (n = *25*) | |
| | M | SD | M | SD |
| Mild (14–19) | 80.50 | 14.84 | 75.65 | 7.59 |
| Moderate (20–28) | 79.03 | 18.50 | 79.53 | 13.49 |
| Severe (>28) | 105.92 | 21.98 | 97.89 | 14.71 |

amongst the individuals with depressive disorders. In fact, highly depressed patients reported a significantly greater frequency of negative automatic thoughts compared to those with lower levels of depression. In addition, there were higher positive linear relationships between depressive symptom scores of BDI-II and its cognitive dimension scores with ATQ-N scores amongst depressed compared with non-depressed individuals. Finally, two subscales of the ATQ-N, demoralisation and amotivation, significantly predicted scores of BDI-II.

High levels of negative thoughts in depressed individuals were consistent with those observed in previous empirical studies in Western countries (Shestyuk & Deldin, 2010) and Eastern countries, specifically in the ME and North Africa (Beshai et al., 2012; Beshai et al., 2016). Moreover, the associations between depression symptoms and negative thoughts in depressed people were in line with the severity hypothesis in the cognitive theory of depression, and were consistent with results from Western countries (Steer, Beck, Clark, & Beck, 1994) and those of an Arab Middle Eastern country (Beshai et al., 2012; Beshai et al., 2016). Although some research has suggested there are fewer negative self-descriptions in depressed individuals in Eastern countries compared to those of Western countries (Stompe et al., 2001), the present research was compatible with a few recent studies in Egypt indicating that depressed individuals had high levels of negative thoughts about themselves (Beshai et al., 2012; Beshai et al., 2016).

Recent attention has focused on which aspects of negative thinking are most associated with depression symptoms. Our results were in line with those of Zettle et al. (2013), as the demoralisation domain of ATQ-N accounted for the highest proportion of variance in levels of depression. Another factor in the present study was amotivation, whereas depression in Western society has been associated with self-criticism (Zettle et al., 2013). Although self-criticism and guilt can be experienced by depressed patients in any community, some researchers have classified these two feelings as atypical symptoms of depression in Islamic and Arabic countries (Okasha, 2004; Stompe et al., 2001). These researchers

maintained that self-blame accompanying emotional disorders in Western countries is usually absent amongst Muslim patients with depression; however, even in Arab countries negative thoughts increased when assessment had done by pencil self-reports instead of doing interviews (Matthey, Barnett, & Elliott, 1997). Moreover, a study contradicted the claim by reporting same levels of self-blame and guilt in depressed individuals in Egypt and Canada (Beshai et al., 2016) and even higher levels of self-blame and guilt in Egyptians with dysphoria (Beshai et al., 2012). According to our results, there are different levels of self-criticism between depressed and non-depressed individuals in Iran, but no linear relationship between self-criticism and depression symptoms. Generally, the present research, as well as a few recent experiments in Egypt (Beshai et al., 2012; Beshai et al., 2016), confirms the negativity hypothesis in a non-Arab and an Arab Middle Eastern countries, respectively. As a whole, these results highlight the critical role of negative thoughts in depression regardless of culture.

Some research has revealed that depressive symptoms are associated with varied psychological and physiological outcomes in different cultures (Miyamoto et al., 2013). For this reason, depressed individuals in some cultures are more likely to present their depression by somatic complaints (Bhugra & Mastrogianni, 2004). This display of depression symptoms is more common amongst Eastern countries relative to Western countries (Kawanishi, 1992). However, our results demonstrated that other aspects of depression symptoms (affective and cognitive dimensions) were also common amongst the patients. It is possible that depressed individuals in Iran, which is a non-Arab Middle Eastern country, behave differently to their counterparts in Arab Middle Eastern countries. For example, it has been suggested that Muslims are willing to hold God responsible for their difficulties; however, they do not blame themselves for their mental illness (Stompe et al., 2001). This pattern may not be observed in Iran.

No significant differences were found in the education and marital status of the depressed and non-depressed individuals, but females were over-represented in the depressed group compared to the control group. Since participation in the present study was voluntary, the observed gender differences in the depressed group likely reflects the general gender difference in depression (Kessler, 2003). For example a review of Middle Eastern and North African countries found heightened rates of depression amongst women compared to men (Eloul, Ambusaidi, & Samir, 2009).

The current results underscore the importance of the negativity hypothesis and the related severity hypothesis, and show that these two hypotheses from cognitive theory of depression apply to Iranian depressed patients. However, another recent study from Iran failed to confirm the selective attention hypothesis, which is another hypothesis from the cognitive theory (Mohammadkhani, Eskandari, Mehrabi, & Bagheri, 2015). These studies highlight the critical need to examine the other hypotheses of cognitive theory of depression to clarify the relationship between depression symptoms and Beck's cognitive theory of depression in Iranian culture.

The present study had some limitations. Different recruitment methods were used for the depressed and non-depressed individuals. While the non-depressed control group was selected using public flyers, the depressed individuals were selected via specific flyers presented to outpatients visiting mental health clinics. Second, data were collected from one Middle Eastern country and compared to results of the Western literature in this field. To fully understand cross-cultural psychopathology, it will be necessary to conduct research in different cultures.

In conclusion, the present study supported the cognitive model of depression in a group of Iranian individuals, as depressed individuals had higher frequencies of negative automatic thoughts in relation to non-depressed individuals. As in other Arab Middle Eastern countries, somatic symptoms were also higher. However, unlike most studies in Arab countries, the BDI-II's cognitive subscale accompanied by negative thoughts were significantly higher amongst depressed people. These findings reveal that although Iran shares the same religion with Arab countries, differences between Iran and Arab countries may result from other cultural factors. Further study of the basic concepts of cognitive theories involved in depression in different cultures can help to pave the way for improved efficacy of widely used therapies such as cognitive behavioural therapy (Beck et al., 1979) in each culture.

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## REFERENCES

Beck, A. T. (1967). *Depression: Clinical, experimental, and theoretical aspects*. Philadelphia, PA: University of Pennsylvania Press.

Beck, A. T. (1987). Cognitive models of depression. *Journal of Cognitive Psychotherapy: An International Quarterly*, *1*(1), 5–37.

Beck, A. T., Rush, A. J., Shaw, B. F., & Emery, G. (1979). *Cognitive therapy of depression*. New York, NY: Guilford Press.

Beck, A. T., Steer, R. A., & Brown, G. K. (1996). Beck depression inventory-II. *San Antonio*, *78*(2), 490–498.

Beshai, S., Dobson, K. S., & Adel, A. (2012). Cognition and dysphoria in Egypt and Canada: An examination of the cognitive triad. *Canadian Journal of Behavioural Science*, *44*(1), 29–39.

Beshai, S., Dobson, K. S., Adel, A., & Hanna, N. (2016). A cross-cultural study of the cognitive model of depression:

Cognitive experiences converge between Egypt and Canada. *PLoS ONE*, *11*(3), e0150699.

Bhugra, D., & Mastrogianni, A. (2004). Globalisation and mental disorders: Overview with relation to depression. *The British Journal of Psychiatry*, *184*(1), 10–20.

Clark, D. A., Beck, A. T., & Alford, B. A. (1999). *Scientific foundations of cognitive theory and therapy of depression*. New York, NY: Wiley.

Eloul, L., Ambusaidi, A., & Samir, A.-A. (2009). Silent epidemic of depression in women in the Middle East and North Africa region: Emerging tribulation or fallacy? *Sultan Qaboos University Medical Journal*, *9*(1), 5–15.

Ferrari, A. J., Charlson, F. J., Norman, R. E., Patten, S. B., Freedman, G., Murray, C. J., … Whiteford, H. A. (2013). Burden of depressive disorders by country, sex, age, and year: Findings from the global burden of disease study 2010. *PLoS Medicine*, *10*(11), e1001547. https://doi.org/10.1371/journal.pmed.1001547

First, M. B., Gibbon, M., Spitzer, R. L., & Williams, J. B. W. (1996). *User's guide for the structured clinical interview for DSM-IV axis I disorders—Research version*. New York, NY: Biometrics Research Department, New York State Psychiatric Institute.

Ghassemzadeh, H., Mojtabai, R., Karamghadiri, N., & Ebrahimkhani, N. (2005). Psychometric properties of a Persian-language version of the Beck depression inventory--second edition: BDI-II-PERSIAN. *Depression and Anxiety*, *21*, 185–192. https://doi.org/10.1002/da.20070

Ghassemzadeh, H., Mojtabai, R., Karamghadiri, N., & Ebrahimkhani, N. (2006). Psychometric properties of a Persian-language version of the automatic thoughts questionnaire: ATQ-Persian. *Internatioanl Journal of Social Psychiatry*, *52*(2), 127–137. https://doi.org/10.1177/0020764006062095

Hollon, S. D., & Kendall, P. C. (1980). Cognitive self-statements in depression: Development of an automatic thoughts questionnaire. *Cognitive Therapy and Research*, *4*(4), 383–395.

Kawanishi, Y. (1992). Somatization of Asians: An artifact of Western medicalization? *Transcultural Psychiatric Research Review*, *29*(1), 5–36.

Kessler, R. C. (2003). Epidemiology of women and depression. *Journal of Affective Disorders*, *74*(1), 5–13.

Kleinman, A. (2004). Culture and depression. *New England Journal of Medicine*, *351*(10), 951–953.

Matthey, S., Barnett, B. E. W., & Elliott, A. (1997). Vietnamese and Arabic women's responses to the diagnostic interview schedule (depression) and self-report questionnaires: Cause for concern. *Australian and New Zealand Journal of Psychiatry*, *31*(3), 360–369.

Miyamoto, Y., Boylan, J. M., Coe, C. L., Curhan, K. B., Levine, C. S., Markus, H. R., … Karasawa, M. (2013). Negative emotions predict elevated interleukin-6 in the United States but not in Japan. *Brain, Behavior, and Immunity*, *34*, 79–85.

Mohammadkhani, P., Eskandari, E., Mehrabi, A., & Bagheri, M. (2015). Selective attention hypothesis in Iranian patients with depressive disorder. *Practice in Clinical Psychology*, *3*(3), 177–184.

Nisbett, R. E., Peng, K., Choi, I., & Norenzayan, A. (2001). Culture and systems of thought: Holistic versus analytic cognition. *Psycholological Review*, *108*(2), 291–310.

Okasha, A. (2004). Focus on psychiatry in Egypt. *British Journal of Psychiatry*, *185*(3), 266–272. https://doi.org/10.1192/bjp.185.3.266

Saint Arnault, D., Sakamoto, S., & Moriwaki, A. (2005). The association between negative self-descriptions and depressive symptomology: Does culture make a difference? *Archives of Psychiatric Nursing*, *19*(2), 93–100.

Sharifi, V., Assadi, S. M., Mohammadi, M. R., Amini, H., Kaviani, H., Semnani, Y., … Jalali, M. (2009). A Persian translation of the structured clinical interview for diagnostic and statistical manual of mental disorders, fourth edition: Psychometric properties. *Comprehensive Psychiatry*, *50*(1), 86–91. https://doi.org/10.1016/j.comppsych.2008.04.004

Shestyuk, A. Y., & Deldin, P. J. (2010). Automatic and strategic representation of the self in major depression: Trait and state abnormalities. *American Journal of Psychiatry*, *167*(5), 536–544.

Steer, R. A., Beck, A. T., Clark, D. A., & Beck, J. S. (1994). Psychometric properties of the cognition checklist with psychiatric outpatients and university students. *Psychological Assessment*, *6*(1), 67–70.

Stompe, T., Ortwein-Swoboda, G., Chaudhry, H. R., Friedmann, A., Wenzel, T., & Schanda, H. (2001). Guilt and depression: A cross-cultural comparative study. *Psychopathology*, *34*(6), 289–298.

Williams, J. M. G., Watts, F. N., MacLeod, C., & Mathews, A. (1997). *Cognitive psychology and emotional disorders* (2nd ed.). Chichester: Wiley.

Zettle, R. D., Webster, B. K., Gird, S. R., Wagener, A. L., & Burdsal, C. A. (2013). Factor structure of the automatic thoughts questionnaire in a clinical sample. *International Journal of Cognitive Therapy*, *6*(3), 280–291.

Zimmerman, M., & Mattia, J. I. (2001). The psychiatric diagnostic screening questionnaire: Development, reliability and validity. *Comprehensive Psychiatry*, *42*(3), 175–189. https://doi.org/10.1053/comp.2001.23126