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## Correlation between Happiness and Depression According to Beck Depression and Oxford Happiness Inventory among University Students

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### Abstract

**Background:** Happiness is a subjective emotional state associated with a wide number of personal and socio-economic factors evaluated with Oxford Happiness Inventory (OHI). Depression is a syndrome diagnosed by psychiatric criteria and measured by Beck depression questionnaire. The goal of this study was to evaluate the correlation between happiness and depression, measured by OHI and Beck questionnaire, respectively in a population of university students.

**Materials and Methods:** This cross-sectional study was conducted in 2014 at Fasa University of Medical Sciences, Fars province, Iran. OHI, Beck questionnaire and demographic information sheet were filled by 216 students between 18 to 30 years old. Analyses were done to test the correlation between depression and happiness scores as well as happiness and several demographic factors. **Results:** Two hundred and sixteen students, 142(65.7%) females and 74 (34.3%) males with mean ages of 20.67±1.52 years old participated. There was a significant reverse correlation between happiness and depression scores ( $P<0.001$ ) with correlation coefficient of -0.757. Coefficient for determination was 0.57 for this correlation. Significant negative relationship existed between happiness and addiction in the family ( $P=0.001$ ). Positive correlation was found between happiness and marriage ( $P=0.036$ ). **Conclusion:** This study reports when happiness score increases, the depression score decreases; however, the coefficient for determination of this correlation shows that only a little more than half of happiness changes are described and assessed with depression score. It seems that the two psychometric tools do not completely stand against each other. Hence, happiness cannot be translated to lack of happiness. For further evaluation of this relationship, case-control and cohort studies are needed in different populations. [GMJ.2016;5(2):75-81]

**Keywords:** Happiness; Depression; Beck Questionnaire; Students; Oxford Happiness Inventory

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## Introduction

Happiness is a subjective emotional state defined as a positive value a person attributes to himself. It encompasses a number of cognitive and positive emotional states that causes life satisfaction and lack of negative thinking [1, 2].

Happiness is associated with many factors including socioeconomic status, educational degree, health condition and fitness. Obesity and smoking and many other health problems and abnormal behavioral conditions have reverse relationship with happiness [3, 4]. Among factors affecting happiness, some like genetics are indisputable [5].

However, modulating others might improve happiness.

In positive psychology which is devoted to understanding the process of human happiness and welfare, happiness is evaluated as a principal issue [2, 6]. Various methods have been used to “measure” happiness. A commonly used method to assess happiness is the implementation of Oxford Happiness Inventory (OHI) introduced in 1987 by Argyle and Crossland [7]. Many studies were done for evaluating the validity and reliability of OHI. Hills and Argyle reported the validity of OHI with Cronbach’s alpha coefficient of 0.90 [8]. The validity of Persian version of OHI was evaluated by several studies such as Alipour *et al.* (alpha coefficient 0.91) [9] and Hadinezhad *et al.* (alpha coefficient 0.83) [10].

Depression is one of the major causes of morbidity in all countries. It is a widespread and devastating disease that can affect all the people of both genders [11]. According to the prediction of World Health Organization (WHO), depression will be the second cause of disability in 2020 and till then, the leading cause of disease burden in developing countries [12].

Depression is a syndrome that contains several items including reduced energy and passion, difficulty in concentrating, feelings of guilt, anorexia and suicidal thoughts [12-14]. Beck depression inventory is one of the most commonly used depression scales published in 1961 by Beck *et al.* [15]. The validity of Persian version of beck depression inventory by several studies such as Rajabi *et al.* has

been pinpointed (Cronbach’s alpha coefficient 0.87) [16].

Depression is not merely the absence of happiness. It is a syndrome characterized by several signs and symptoms and diagnosed by psychiatric disease criteria [17]. One of the items of criteria can be interpreted as lack of happiness. Worldwide, no psychometric study has been conducted till now to evaluate the correlation between happiness and depression using the most common tools of measuring each, OHI and Beck questionnaires. These psychometric tools have not been evaluated head to head to elucidate if they measure the mental conditions in a way to propose if depression is not the lack of happiness. So, this study was conducted to evaluate the existence of correlation between happiness and depression according to the scores of these two scales among students of different fields in Fasa University of medical sciences in Fars province, Iran.

## Materials and Methods

This cross-sectional study was conducted in May 2014 at Fasa University of Medical Sciences, Fars province of South Iran. The participants included 300 students from 6 study fields (medicine, emergency medical science, anesthesiology, public health, laboratory science and nursing) with ages between 18 to 30 years old. Fifteen students were selected from each grade in each field via student name list by using a random number table. Two questionnaires, OHI and Beck, were prescribed simultaneously. Beck depression questionnaire included sociodemographic questions at the top of the sheet, ending in 21 items that evaluated the mood of the participants; each question was scored 0 to 3. Total score accounted for a number between 0 and 63. Higher scores represented more severe depressed mood. OHI contained 29 questions measuring happiness. Each question scored from 0 to 3 and total score was noted 0 to 87. All data were kept codified and confidential. Finally, 74 participants were excluded from the study due to incomplete filling of their questionnaire sheets and 216 samples were analyzed for final evaluation. Data were reported as mean

+/- standard deviation (SD). One-way ANOVA and Independent sample t-test were used to make comparisons. P

earson correlation coefficient was used to report correlation between scores of depression and happiness. P-value less than 0.05 was set as significance level. SPSS version 19 (SPSS Inc. Chicago I11) was utilized for statistical analysis.

## Results

In this study 216 students participated including 142(65.7%) female and 74(34.3%) male. Mean age was 20.67±1.52 years (18-29 years old). Cronbach's alpha coefficient of OHI in this study was 0.92.

Mean of happiness score was 41.5±15.24 (9-74) and mean of depression score was 12.59±10.85 (1-50). Other demographic data are presented in Table-1.

There was a significant negative correlation between the scores of happiness and depression measured by OHI and Beck depression questionnaires, respectively ( $P < 0.001$ ). Happiness scores decreased with increasing depression scores ( $r = -0.757$ ) (Figure-1). Determination coefficient between OHI and Beck questionnaires was 0.57 which means 57% change in happiness scores could be expressed by depression score or vice versa.

In this study, there was no significant relationship found between age and happiness ( $P = 0.672$ ), and gender and happiness ( $P = 0.186$ ).

Married students had higher scores of happiness than single ones. There was a significant relationship between happiness and marriage ( $P = 0.036$ ). History of divorce in the family and happiness had significant reverse relationship ( $P = 0.014$ ).

People with positive history of divorce in their family had lower happiness scores. Happiness and cigarette smoking represented significant relationship ( $P = 0.025$ ).

Smokers had lower happiness scores. Between happiness and family history of addiction, there was a significant reverse relationship ( $P = 0.001$ ).

Students who had positive history of addiction in their family had lower scores of happi-

ness. Significant relationship existed between the degree of happiness and mothers' level of education ( $P = 0.045$ ), more details in Table-2.

**Table 1.** Demographic information of participants

Variables		N (%)
<b>Gender</b>	Boy	74 (34.3)
	Girl	142 (65.7)
<b>Field</b>	Non-medical*	192 (88.9)
	Medical	24 (11.1)
<b>Marital status</b>	Single	197 (91.2)
	Married	19 (8.8)
<b>Father's Job</b>	Without steady income	137(63.4)
	With steady income	79 (36.3)
<b>Mother's Job</b>	Homemaker	193 (89.4)
	Employed	23 (10.6)
<b>Family history of divorce</b>	Yes	6 (2.8)
	No	210 (97.2)
<b>Death of parents</b>	Yes	9 (4.2)
	No	207 (95.8)
<b>Dormitory</b>	Yes	177(81.9)
	No	39 (18.1)
<b>Family monthly income†</b>	<200	22 (10.2)
	200-400	93(43.1)
	400-800	64(29.6)
	>800	37(17.1)
<b>Father's level of education</b>	Illiterate	15(6.9)
	High school	122(59.5)
	University education	79 (36.6)
<b>Mother's level of education</b>	Illiterate	19(8.8)
	High school	155(71.8)
	University education	42(19.4)
<b>Cigarette smoking</b>	Yes	14(6.5)
	No	202(93.5)
<b>Family history of addiction</b>	Yes	24(11.1)
	No	192(88.9)
<b>Family count</b>	<5 person	126(58.3)
	>5 person	90(41.7)

\*Including: Emergency medical science, Anesthesiology, hygienic, Laboratory science, Nursing

† Us Dollar:\$

Table 2: Relationship Between Happiness and Demographic Variables

Variables	Happiness(0-87)			
	Number	Mean	Standard deviation	P-Value
<b>Marital status</b>	single	197	40.82	<b>0.036</b>
	married	19	48.47	
<b>Family history of divorce<sup>a</sup></b>	Yes	6	26.50	<b>0.014</b>
	No	210	41.92	
<b>Cigarette smoking</b>	Yes	14	32.71	<b>0.025</b>
	No	202	40.10	
<b>Family history of addiction</b>	Yes	24	28.75	<b>0.001</b>
	No	192	43.09	
<b>Mother's level of education</b>	Illiterate	19	33.84	<b>0.045</b>
	High school	155	42.77	
	University education	42	40.23	

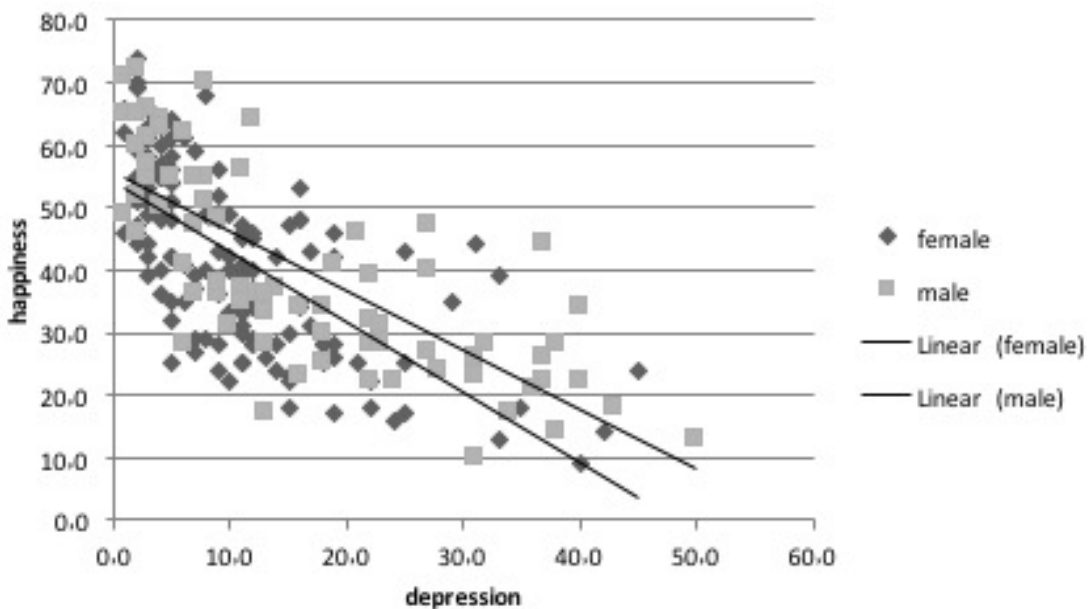


Figure 1. Correlation Between Happiness and Depression

## Discussion

Utilization of psychometric tools has got important advancements toward better evaluation of psychological states and psychiatric disorders. OHI and Beck depression questionnaires are among the mostly used psychometric tools. This study was conducted to evaluate the existence of correlation between happiness measured by OHI and depression measured by Beck depression questionnaire. OHI and Beck are two internationally accredited and reliable questionnaires used to evaluate the degree of happiness and the severity of depression, respectively. The two terms, happiness and depression are used as antonyms in the folklore literature, but in the science, the former is defined merely as a state of well-being and value, while the latter indicates a syndrome of psychiatric abnormality.

We found that there was an inverse correlation between the degree of happiness measured by OHI and the severity of depressive mood reported by Beck inventory; however, the determination coefficient calculated from the coefficient of this correlation is only a little more than 50%. It could be interpreted that only 50% of the changes of depression measured by Beck can be expressed or predicted by the degree of happiness scored by OHI number. So, the two questionnaires cannot be always administered interchangeably. Other investigators have suggested that happiness decreases with depression; however, they have not gone further from their common sense. Najafi [18], Poursharifi [19], Bahrami [20] have not formulated any subjective study method to provide a solid proof for this hypothesis. Neither of these researchers have used any inventory to quantitatively investigate this correlation. To our knowledge, our work is the first report of its kind using OHI and Beck inventories to clarify the issue subjectively and quantitatively.

The relationship between happiness and some demographic factors has been also reported in this study. Mean of happiness score among students was 41.50 which is similar to some other studies among Iranian university students such as Zohur [21] and Farzianpour in students of Tehran University [1] and Abedi

in students of Isfahan University [22]. Considering the fact that the mean of this score is approximately 50% in all studies nationwide, it is suggested that regarding the score of happiness, the condition for students in Iranian universities are the same. This score is low and better condition provided for the students to make them happier and subsequently, more efficient studies could be recommended. This study showed the positive relationship between happiness and the level of mothers' education. Fararouei *et al.* reported a relationship between parents' education and happiness [23]. However, according to our findings, mothers' education was more related to students' happiness. Probably as mothers are more associated with their children, their education levels are more effective in providing happiness for their children. There were negative relationships between happiness and smoking; also, Fararouei *et al.* reported the same relationship [23]. Family history of addiction inversely associated with happiness. To our knowledge, this finding has not been reported previously. Smokers were found to be less happy. Smoking is more common in people with negative thinking, and it is believed that the degree of happiness decreases with increasing negative thought. On the other hand, it could be proposed that smoking, by itself, might cause negativism. To clarify more details regarding this issue, independent studies are warranted.

This study suggested that a relationship exists between happiness and marital status. Married persons had better scores of happiness compared to singles. Sohail [24] and Strobel [25] reported the same results. There was a significant relationship between happiness and positive history of divorce in family. Students with positive history of divorce in their family represented lower scores of happiness. Farzianpour reported this issue and suggested that history of divorce in the family could be a predictor for decreasing happiness [1].

No relationship existed between happiness and gender. The same result was reported by Najafi [18], Safari [26], Liaghatdar [27], Francis [28]. Probably the modern living offers similar social and familial conditions for both genders.

There were some limitations in our study regarding the correlation between depression and happiness scores. The age of participants was between 18 to 30 years old and future studies had better include a wider range of ages. Furthermore, we evaluated university students only. Further studies could include other groups of society to alleviate any possible selection bias. Longitudinal and prospective studies could be implemented in future correlation studies to see the trace of changes of happiness in comparison with the trends of mood alterations. Moreover, we suggested more interventional studies because when happiness increases, depression decreases.

### Conclusion

The correlations found in this study can be practically used by the university managers to

plan for better mental health programs for the students, locally or nationwide. International generalization of these findings, however, needs independent studies in many countries and interpretation of the mass data.

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### Conflict of Interest

The authors certify that there is no conflict of interest for this work.

## References

1. Farzianpour F, Eshraghian M, Emami A, Hosseini S, Hosseini S, Farhud D .An Estimate of Happiness among Students of Tehran University of Medical Sciences: A Means for Policy Making In Management of Health System. *Iran Red Crescent Med J* 2011; 13 (11):841.
2. Hills P, Argyle M .Emotional stability as a major dimension of happiness. *PERS INDIV DIFFERS* 2001; 31 (8):1357-64.
3. Abdel-Khalek AM .Measuring happiness with a single-item scale. *SOC BEHAV PERSONAL* 2006; 34 (2):139-50.
4. Argyle M .Is happiness a cause of health? *PSYCHOL HEALTH* 1997;12 (6):769-81.
5. Blades M .Food and happiness. *J Nutr Food Sci* 2009;39 (4):449-54.
6. Wei M, Liao KYH, Ku TY, Shaffer PA .Attachment, self-compassion, empathy, and subjective well-being among college students and community adults. *J Pers* 2011;79 (1):191-21.
7. Argyle M, Crossland J .The dimensions of positive emotions. *Br J Soc Psychol* 1987;26 (2):127-37.
8. Hills P, Argyle M .The Oxford Happiness Questionnaire: A compact scale for the measurement of psychological well-being. *PERS INDIV DIFFER* 2002;33 (7):1073-82.
9. Alipour A, Noorbala A .Introductory survey on validity and reliability of Oxford Happiness Inventory in Tehran universities. *J Thou and Behav* 1999;5:55-63.
10. Hadinezhad H, Zaree F .Reliability, validity, and normalization of the Oxford Happiness Questionnaire. *Psychol Res* 2009;12:62-77.
11. March J, Silva S, Petrycki S, Curry J, Wells K, Fairbank J, et al .Fluoxetine, cognitive-behavioral therapy, and their combination for adolescents with depression: Treatment for Adolescents With Depression Study (TADS) randomized controlled trial. *JAMA* 2004; 292 (7):807-20.
12. Darabadi I , Firoozkohy M , Mazloom SR, Navidian A .The Survey of rate and prevalence of depression among student of Zabol University of Medical Sciences. *Shahr- e- Kord Med Sch J* 2004; 6:15-21. [ in Persian]
13. Hawthorne G, Goldney R, Taylor AW .Depression prevalence: is it really increasing? *Australian and New Zealand J of*

- psychiatry 2008;42 (7):606-16.
14. Mokhtariipoor M, Godarzi Z, Siadat A, Keywan Ara M .The relationship between demographical variables with anxiety and depression among Isfahan Medical Science Students. *Behav Sci Res* 2008; 2,107-10. [ in Persian]
  15. Beck AT, Ward CH, Mendelson M, Mock J, Erbaugh J .An inventory for measuring depression. *Arch Gen Psychiatry* 1961; 4 (6):561-71.
  16. Rajabi GhR, Attari YA, Haghghi J. Factor analysis of beck questionnaire on male students of shahid chamran university. *J edu psychol* 2001;3(4): 49-66.[Article in Persian].
  17. Uher R, Payne JL, Pavlova B, Perlis RH .MAJOR DEPRESSIVE DISORDER IN DSM-5: IMPLICATIONS FOR CLINICAL PRACTICE AND RESEARCH OF CHANGES FROM DSM-IV. *Depress Anxiety* 2014; 31 (6):459-71.
  18. Najafi M, Dehshiri GH, Dabiri S, Sheikhi M, Jafari N .Psychometric properties of Farsi version of the Oxford Happiness Inventory among students. *J Edu Measur* 2013; 10:55-73. [ in Persian]
  19. Poursharifi H, Habibi M, Zarani F, Ashouri A, Hafezi M, Hajebi, A, et al .The role of depression, stress, happiness and social support in identifying thoughts in students. *IJPCP* 2012;18:99-107. [ in Persian]
  20. Bahrami S , Rajaeepour S , Rizi HA , Zahmatkesh M , Nematolahi Z .The relationship between students' study habits, happiness and depression. *Iran J Nurs Midwifery Res* 2011;16, 217. [ in Persian]
  21. Zohur A, Fekri A .Students freshness at the School of Management and Medical Information, Iran University of Medical Sciences. *Asrar J Sabzevar Med Uni* 2005; 1:47. [ in Persian]
  22. Abedi MR, Jafari SE, Liaghatdar MJ .Normalization of oxford happiness inventory among students of Isfahan universities. *IJCP* 2007; 45:95-100.
  23. Fararouei M, Brown I, Akbartabar Toori M, Estakhrian Haghghi R, Jafari J .Happiness and health behaviour in Iranian adolescent girls. *J Adolesc* 2013;36 (6):1187-92.
  24. Sohail N .Stress and academic performance among medical students. *J Coll Physicians Surg Pak* 2013;23 (1):67-71.
  25. Strobel M, Tumasjan A, Spörrle M .Be yourself, believe in yourself, and be happy: Self-efficacy as a mediator between personality factors and subjective well-being. *Scand J Psychol* 2011;52 (1):43-8.
  26. Safari M, Sanaei Nasab H, Rashidi H, Poortaghi GH, Pakpoor A .Happiness, self-efficacy and achievement in students. *J Med Edu* 2014; 13:22-9. [ in Persian]
  27. Liaghatdar MJ, Jafari E, Abedi MR, Samiee F .Reliability and validity of the Oxford Happiness Inventory among university students in Iran. *Span J Psychol* 2008;11 (01):310-13.
  28. Francis LJ, Brown LB, Lester D, Philipchalk R .Happiness as stable extraversion: A cross-cultural examination of the reliability and validity of the Oxford Happiness Inventory among students in the UK, USA, Australia, and Canada. *PERS INDIV DIFFER* 1998; 24 (2):167-71.