

## Interdependence and Depression: Does an Interdependent Culture Provide Effective Buffer Against Depression?

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### ABSTRACT

This literature review examines the cultural factor which potentially contributes to the difference between high rates of depression in Western nations and significantly lower rates in the East. Somatisation of depressive symptoms by the Chinese is addressed and attempted to be explained from the perspective of emotion as a relational component of self as opposed to residing discretely within a person. The possibility of an interdependent cultural environment which provides a buffer against the higher risk of depression amongst Asians as observed from their greater frequency of serotonin transporter polymorphism genotype may explain the low prevalence of depression in East-Asian countries. The lower risk-taking tendency of East Asians, promoted by interdependent cultural philosophy and mediated by increased amygdala reactivity, may serve as an additional means to counter greater genetic susceptibility to clinical depression. Upon analysing the trend in the United States shortly after World War II, it is possible to link together the concurrent increase in individualism and rates of depression in the country. Social factors appeared to have affected the surging rates amongst high-risk groups of women and the young population. The rate of depression in more interdependent rural areas was lower than urban regions of the United States, with a similar difference observed between rural and urban Canada. The lower rate in rural settings was related to its residents' stronger sense of community belonging. Overall, research findings give further weight to the relationship between the interdependence of a culture and the depression rates of its people.

**Keywords:** Depression; Culture; Interdependent; Serotonin; Emotion

### INTRODUCTION

The difference in rates of depression between East Asians and North Americans has long attracted research which led to many possible explanations for such finding. According to a summary study by Weissman [1] which analysed the rates of major depressive disorder in different countries based on community surveys, the prevalence rate of Taiwan stood low at 1.5% for every 100 people while that of Korea was a close 2.9%. Another study indicated China's 1-year incidence rate for unipolar depression at 2.3%, which was much lower than that of the United States at 10.3% [2,3]. With their much lower lifetime prevalence, the Chinese also tended to report more somatic than psychological depressive symptoms [4,5]. A study, which compared depressed Malaysian Chinese and Euro-Australians found that a main somatic complaint was more commonly

expressed by the former [6]. Although many interpretations were put forth by researchers to undermine the physical symptoms of depression as a means of masking the psychological symptoms, it is not entirely certain whether this is the case. However, there is cultural variability in reporting of emotional symptoms which is remarkable between the Chinese and those of European descent [5]. In consideration of this, while it is probable that there is less openness in discussion of negative emotion-related issues with a healthcare provider, Leu, Wang, and Koo [7] found that East Asians who reported having many positive emotions are not at less risk for depression than those who reported having very few positive emotions. The relationship between positive feelings and protection against depression for East Asians is therefore questionable, which may extend to weaken the link between negative emotions and the disorder. On the other hand, when

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we do not rule out the possibility that Chinese are less inclined to verbalise their emotions, there are explanations that benefit our understanding of the social implications of being diagnosed with a psychological disorder for the Chinese as well as similar East Asian collectivistic populations.

## LITERATURE REVIEW

### The genetic predisposition of East-Asians towards depression

The lower incidence and prevalence rates of depression in East-Asian countries may imply a lower risk of depression for their populations. However, it is necessary to go deeper than these statistics before arriving at an early conclusion that East-Asians are endowed with the biological advantage over Westerners which actively protects them against depression. Even if such natural protection should exist, what are the source and mechanism which enables it to work? Ironically, a closer look provided by one study of the genetic differences between Western and Asian populations revealed that the latter exhibited higher frequency of homozygosity for the short allele of serotonin transporter gene-linked region of polymorphism [8]. The effect of such genotype is less transmission or activity of the neurotransmitter serotonin which increases one's risk of depression in the event of life stress. Studies also showed that the association between serotonin transporter polymorphism genotype and depressive symptoms was moderated by environmental factors which may include stress and cultural practices [9,10] found that the greater endorsement of holistic view by Koreans than Americans was more pronounced in those who carried the G allele of a serotonin receptor polymorphism and resulted in less neurotransmission of serotonin. Such findings lead to the explanation that in order to counter the increased vulnerability of Asians to stressful events and thus, depression, the culture turned to active seeking and promotion of interdependent harmonious relations and mutual support [11-13]. On one hand, studies have also linked low levels of serotonin with increased risk-taking and aggressive behaviour in monkeys and humans [14]. The tendency of East-Asians to promote social harmony and avoid conflict could be a means by which risky and aggressive pursuits are discouraged. East-Asians are also known to prefer low-arousal leisure activities in contrast with high-arousal sports [15]. A cross-cultural study by Pizam [16] looked into the travel preference of young adults and it was found that a more than half of American participants in comparison with Koreans, scored higher on risk-taking and sensation seeking. Such finding suggests a question of whether a mediating agent is in play between one's compromised level of protective serotonin and reduced aggressive tendency. There was another study which examined the association between levels of serotonin transporter and brain activity of the amygdala region in human subjects when they responded to fearful or angry faces [17]. The amygdala is known for its role in conditioned emotional responses in learning and reactivity to fearful stimuli [18]. The study found that subjects who carried the short allele of serotonin transporter gene, hence a higher risk of depression during the event of stress, showed greater right amygdala reactivity when they viewed those faces. Another magnetic

resonance imaging (MRI) study by Kobiella [19] related subjects' short form of serotonin transporter gene with their smaller volumes of the amygdala and increased activation than those with the long genotype, suggesting both structural and functional influences by this brain region in restraining one's potential risk-taking tendency.

Although further research is required to determine whether the association between serotonin transporter genotype and increased amygdala reactivity can be generalised to cross-cultural sampling of Asian subjects, the observations could suggest that the likelihood that negative and fearful expectations of undesirable outcomes of a situation or undertaking may contribute to the purpose and significance of harmonious relations upheld by Eastern philosophy. If such is the case, we can likely infer the preferred stress coping styles of interdependent Easterners as compared with independent Westerners. Difference in optimism and pessimism between these two cultural groups may mediate their choice of either an active or avoidance coping strategy [20]. Optimism has been linked to active coping which directly confronts the problem while pessimism is related with passive avoidance style such as social withdrawal [21-24]. Radford, Mann, Ohta and Nakane [25] found that Japanese college students were more likely to use avoidance coping styles than Australian students. Active coping style, which involves directly confronting a problem or situation, could just not align well with a culture that values non-conflicting relations and discourages explicit expression of disagreement with group norms. East-Asian collectivistic culture could have indirectly fostered an avoidant attitude when one has to cope with the negative situations in life, and this strategy is more adaptive in preventing group conflict. The results of the study by Chang [20], which looked into the cultural differences between Asian American and Caucasian American students, showed that the former scored higher on pessimism and used more problem avoidance and social withdrawal strategies than Caucasian students. On one hand, the tendency of Asians towards negative expectation can be more pervasive at the sociocultural level. A study which analysed the lyric content of American and Chinese love songs found that the latter contained more negative expectations about the outcome of a romantic relationship and its sufferings than the former [26]. Thus, these internal and outward expression of negativism may function as indirect counteractive measures against East-Asians' genetic predisposition towards depression.

The above discussion of the interaction between genes and culture suggests an underlying reason for the low depression rates in East-Asian countries, which, according to one international primary care survey by Ustun and Sartorius [27], in using similar methods and measures to assess the psychological disorders of patients, have the lowest compared with American and European countries. A later study by Simon, Goldberg, Von Korff and Ustun [28] which examined further of such cross-national differences in the rates of depression concluded that, after screening patients in 14 countries according to their severity of the disorder, the difference in the nature of depression experienced could not contribute to the variation in prevalence rates, thus ruling out somatisation as a confounding factor.

## Emotion and the drawback of social costs

While it has been the interest and challenge of researchers to explain the differences in rates of depression and categories of reported symptoms between Asian Chinese and the Americans or Western Europeans, it is foremost important to understand the greater degree of social awareness experienced and practised on a daily basis by members of interdependent (collectivistic) societies. In a set of studies conducted by Uchida, Townsend, Markus and Bergsleker [29], the authors analysed television interviews of Japanese and American Olympic athletes and study participants' descriptions of pictures of these athletes' and their reactions to winning. The results showed that both the athletes and participants of the study of Japanese descent, as compared with the Americans, associated more emotions with relationships, such as including others when they described the athletes' emotional reaction to their victory and their pictures with teammates. The authors concluded that the Japanese perceived emotions as relational in nature and jointly shared with others while the Americans see emotions as originated from within them and distinctly separated from others. Thus, under the relevant context, the Japanese may not be less emotional in their expressions than their American counterparts. From this finding, emotions can carry a more holistic meaning and significance for Asians than previously assumed. Such relational component of emotions offers us a possible explanation of the different nature of symptoms reported by East-Asians as compared with Westerners. Since one's emotion is more externally interconnected instead of residing within a unique self that is distinct and separated from others, the inward focus of personal symptomatic experience and the process of bringing them to attention may cause the Chinese to be less aware of the psychological aspect of depression. This tendency could also be non-deliberate or implicit. When we view emotion as a component of self that is shared with others, this may increase the degree of implicitness and presumption in communication since the boundary between one's internal feelings and those of ingroup members is less solid and more permeable to influence by one another. An American who has just encountered the Japanese language would be surprised to find the extent to which it allows for omissions of noun or pronouns in conversations and its greater dependence on implicit communication, e.g. emotional vocal tone [30,31]. As emotions can be positive or negative in nature, the degree of implicitly can impact the communication process. In regard to the Chinese' somatisation of depressive symptoms, the connection between emotions, implicit communication and relationships with ingroup and outgroup members may have hindered their explicit description of emotional symptoms. A more immediate factor which implicit communication has on symptom reporting is the lower degree of self-disclosure by Chinese than Americans, as explained by the high-context East Asian culture and the discouragement of excessive speech over beneficial actions, according to Confucian and Taoist philosophies [32]. The stigma of depression or mental illness, termed psychiatric stigma, is felt to a greater degree by the Chinese, and one reason could be that the disorder carries heavy social significance for them [5]. Psychiatric care, as compared with conventional medicine, which takes precedence,

could be perceived to be a deviation from the norm and the generally accepted form of treatment for illness. Whereas having been diagnosed with an illness is more of a personal matter for individualistic societies, this is not the case for the collectivistic culture. To people with interdependent self-construal's, the illness may be perceived as a shared burden among members of their immediate families and even extended social networks. An illustration is the Japanese culture-specific variation of the social anxiety disorder, *taijin kyofushou* (TKS) [33]. The diagnostic criteria for this disorder are that individuals, who are already suffering from social anxiety symptoms, are certain that their symptoms will negatively affect others. Such experience can be contradicting the ideals of the interdependent society to promote harmonious relationships with minimal group conflicts, which may generate additional distressing feelings of guilt and fear for the patient.

From the perspective of one's stature in the society, there is also the tendency of Asian people to avoid "losing face" or failure to meet up to the implied "social standard" and roles expected of a competent member in general [30]. When the esteemed norm of mental soundness is not attainable by an individual, the weight of personal inadequacy and apprehension of being ostracised can be a predictive factor in seeking medical and/or psychiatric care. The social costs of being labeled with a mental illness diagnosis may outweigh the benefits of available mutual support and thus, making it reasonable not to risk disrupting one's positive standing in the society. However, when the reverse situation is true, social support may serve as a buffer against depression both prior to and after diagnosis.

## Concurrent historical increase in individualism and depression in the West

Having addressed both the benefits and drawbacks of East-Asian interdependent culture relative to depression rates, we turn our focus on how such factor is also relevant to the distinctive opposite independent Western culture, thus providing a fair comparison and overview of the subject. When statistics tell us that the rates of depression are notably higher in individualistic nations such as the United States and those of Western European than Asia, it is worth considering whether the one of the contributing factors to this significant difference lies in the varying degree of interdependence practised in the lifestyles of their population. One question to ask is whether individualism has always been an unchanging and deeply rooted facet of the countries which uphold and practise independence in the lives of its people? Has the rate of depression always been this high throughout the nations' history? In a study by Klerman and Weissman [34] which investigated the trends of depression in the United States as observed in the 1960s and 1970s, the authors described a temporal change which began shortly after World War II and highlighted findings of epidemiologic and family studies which pointed at the increase in hospital admissions for affective disorders during post-war from 1950 to 1980 in comparison with 1920 to 1950. The study also mentioned depression, which used to be considered as a disease for the aged, saw younger age of onset compared with previous generations before the war. There were also decreasing rates noted among the elderly with lower lifetime prevalence rates

reported by this age group than young people born after the war, dismissing the increasing risk of depression with age. Interestingly, such trends were also evident in Sweden, Germany, Canada and New Zealand, where similar methods and diagnostic criteria were employed. On the one hand, the collectivistic countries of Korea and Puerto Rico as well as the Mexican Americans who resided in the United States did not exhibit such trends.

Robert Putnam in his book, *Bowling Alone* [35], argued that United States has become a more individualistic nation since the 1960s. Without a unifying event such as the World War II, the present young generation are less socially engaged and spend less time participating in formal groups. Other factors which he provided that also account for such pronounced shift towards independence are increasing suburbanization and a greater number of women who are involved in the workforce, which leads to changes in the family structure. These reasons also overlap with the risk factors for depression in young people proposed by Klerman and Weissman in the previous study [34]. In addition, social anomie which is the weakened social standard of behaviour or absence of norms expected from an individual in a society which has become unrestrained and disintegrated, was also mentioned and this implies a more interdependent community may play a role in moderating one's susceptibility to depression [36]. In comparison, the positive economic prosperity of the country post-war has no effect on people's state of health with the rates of alcoholism and substance abuse that increased along with depression. For the Swedish finding, Hagnell and associates [37] calculated the risk of depression for young adults aged 20 to 39 years from different 5 year-periods. The result was a ten times greater risk for those in the period from 1957 through 1972 than in the prior decade. Based on analyses by Klerman and Weissman [34], what appeared to them was a "temporal change" in consideration of a number of confounding factors. One of them was the under-representation of sample of depressed elderly subjects by death but this was dismissed because the trends were still relevant when subjects aged 52 and above were excluded in one study by Lavori and associates [38]. On the one hand, Murphy and associates [39] found slight increase in depression-related mortality as a result of suicide and accidents for persons less than 50 years. Similarly, factors that were also considered included the changing attitudes of health professionals, the generally more psychological mindedness of the society after the war, associated trends of social problems of suicide and the suspected reliability of the self-reports of the elderly. They were concluded to have no effect on the increased rates of depression among the post-war young generations. However, the possibility of gene-environment interaction was discussed, and reference was made to interpretation of such trends from the genetic standpoint by Crow [40], who argued that the increase in depression was more associated with certain groups of more genetically predisposed female population. However, it is also worth considering their increased risk compared to men by the contributing factor of their increased participation in the workforce that poses greater stress along with the job expectation demands compared with older generations of females. With the benefit of hindsight, we know that such

temporal change in trends extended to the early 1990s when a later National Comorbidity Survey (NCS), a national survey representative of the population of the United States, in using a similar method with the Epidemiologic Catchment Area (ECA) study of the early 1980s, yielded results of lifetime prevalence rates of major depressive disorder that were higher than the ECA [41]. To obtain a more nationally representative data, another National Comorbidity Survey - Replication (NCS-R) was conducted from 2001 to 2002 of household residents and this produced an estimated increased lifetime rate of 16.2% from 14.9% of the NCS in the 1990s.

### Protective effect of interdependent rural living against higher risk of depression

In the Piedmont Health Survey conducted by Crowell, George, Blazer and Landerman [42] in North Carolina, the results showed that major depression was about three times more common in the urban than rural areas. The decreased risk of the disease was more pronounced in younger residents and women, who were known to have a higher risk. The authors concluded that rural living appeared to provide a buffer against depression. On the one hand, it could be that the psychological health of this group of population was more easily affected by their immediate living environment than the general community, which increased their receptivity to its therapeutic effects. In another study which examined the rates of depression in urban and rural Canada, the results showed that there was a lower risk of depression among rural residents and that this was related to their stronger sense of community belonging [43]. Overall, participants who received higher social support from others, particularly in the social domain as assessed by the medical outcomes study (MOS), social support survey, which was developed for patients with chronic illness, also reported lower rates of depression. Such a relation was not identified for other non-psychotic anxiety disorders. The stronger social engagement and its greater opportunities for face-to-face interaction offered by rural residence could decrease one's susceptibility to depression as evidenced by the above studies. However, further research should look into external environmental factors such as the natural aesthetic elements of the rural regions and reduced ambient noise which may also contribute to the lower rates of depression and/or supply the ideal setting for positive social interactions and maintenance of lasting communal relationships. In comparison with results of the above studies, an epidemiological study by Lee [44] reported lower lifetime prevalence rates and a narrow range of difference between 3.3% and 3.5% for a representative sample of adults aged 18 to 64 in the urban and rural areas of South Korea respectively. Although it is difficult to draw definite conclusions in regards to the greater prevalence of depression among the Korean elderly due to the different methods employed between studies [45], relational factors such as the greater number of younger population who moved to urban centres for work, as demonstrated by the bigger sample of urban dwellers in the study by Lee [44], may contribute to depression for older people who lack the company of younger family members. If such is the case, the buffering effect of a network of interdependent members against depression may lose its effectiveness.



## DISCUSSION

Although our genetics inevitably play a role in determining our relative risk to depression, it sets the stage for a comparable powerful influence of culture over the vulnerability of our mental health. For East Asians, there is a link between serotonin transporter polymorphism genotypes and their interdependent culture [11-13]. Despite the lower risk of depression of the European-descent population according to studies of genetics, this conferred advantage does not effectively offset the higher rates of depression in individualistic countries [27]. Hence, both nature and nurture contribute to one's susceptibility to depression. We also saw how emotions and their expressions are strongly built into one's interdependent self-construal, which either promotes beneficial mutual support or erects invisible barriers in explicit communication. They also have implications for the problem of psychiatric stigma which is prevalent in the Chinese society. This may also hinder the Chinese to seek psychiatric help in the first place and resulted in an under-represented number of diagnosed cases of depression. However, there still appears to be an association between the increased rates of depression in the United States with the rise of individualism shortly after World War II [34]. Studies which examined the lower rates of depression in rural as compared with urban regions suggested the former's buffer against depression for high-risk groups [42]. While Western and Eastern concepts and practice of interdependence and social connectedness may differ, with the latter more deep-rooted in self views, this discussion has provided evidence from several past and recent studies that supported the buffering effect of the social component of culture on depression. The relational emotional component of the interdependent self may moderate the degree of effectiveness of this buffering agent and its accompanying practice of implicit communication in Eastern societies may have an indirect impact on depressive symptom reporting. For the independent culture, external factors such as the environment of one's residence and changing societal norms appear to moderate the risk of depression significantly. Nevertheless, based on the broad range of difference between the rates of depression in Western and Eastern countries, the positive impact of the interdependent culture on one's mental health cannot be overlooked [27]. Future research should look into the varying degrees of individualism and collectivism within Western and Eastern nations in particular between urban and rural areas, and their associations with individuals who are at above-average risk of depression. In the case of Chinese or Asian patients who are seeking medical help for somatic complaints which are suspected to be symptoms of depression, it may be beneficial to refer them to a psychiatric care provider who are of the same sex and follow on the probable ignored emotional aspect of their symptoms. We also anticipate further advances in the fields of population genetics and cultural neuroscience to better understand the effect of perceived implicit social support [46] and explicit promotion of social harmony on reduced levels of serotonin transporter and neurotransmission in the brain, not only during critical periods but also non-stressful times of life.

## CONCLUSION

From the above discussion, we can conclude that this knowledge would further detail the interactional relationship between heredity and culture and its biosocial role in shaping our diversity in mental health experiences. The assumption in Western psychiatry and society that psychological symptoms take precedence over somatic symptoms, which are regarded more as a secondary manifestation of initial emotional distress, might also be challenged in the face of increasing cross-cultural research. In the broader sense, a question also arises as to how international immigration and an increasingly globalised world community would affect the stability and persistence of local cultures. Needless to say, the future statistics of relevant population groups would be resourceful in revealing to us the outcome impact of such trends.

## REFERENCES

1. Weissman MM, Bland RC, Canino GJ, Faravelli C, Greenwald S, Hwu HG, et al. Cross-national epidemiology of major depression and bipolar disorder. *Jama*. 1996;276(4):293-299.
2. Kessler RC, McGonagle KA, Zhao S, Nelson CB, Hughes M, Eshleman S, et al. Lifetime and 12-month prevalence of DSM-III-R psychiatric disorders in the United States: results from the National Comorbidity Survey. *Arch Gen Psychiatry*. 1994;51(1): 8-19.
3. Murray CJ, Lopez AD, World Health Organization. The global burden of disease: a comprehensive assessment of mortality and disability from diseases, injuries, and risk factors in 1990 and projected to 2020: summary.
4. Parker G, Gladstone G, Chee KT. Depression in the planet's largest ethnic group: The Chinese. *Am J Psychiatry*. 2001;158(6): 857-864.
5. Ryder AG, Chentsova-Dutton YE. Depression in cultural context: "Chinese somatization," revisited. *Psychiat Clin N Am*. 2012.
6. Parker G, Cheah YC, Roy K. Do the Chinese somatize depression? A cross-cultural study. *Social Psychiatry and Psychiatric Epidemiology*. 2001;36(6):287-293.
7. Leu J, Wang J, Koo K. Are positive emotions just as "positive" across cultures?. *Emotion*. 2011;11(4):994.
8. Caspi A, Sugden K, Moffitt TE, Taylor A, Craig IW, Harrington H, et al. Influence of life stress on depression: Moderation by a polymorphism in the 5-HTT gene. *Science*. 2003;301(5631): 386-389.
9. Ishii K. Culture and the mode of thought: A review. *Asian J Soc Psychol*. 2013;16(2):123-132.
10. Kim HS, Sherman DK, Taylor SE, Sasaki JY, Chu TQ, Ryu C, et al. Culture, serotonin receptor polymorphism and locus of attention. *Soc Cogn Affect Neurosci*. 2009;5(2-3):212-218.
11. Berntson GG, Cacioppo JT. *Handbook of neuroscience for the behavioural sciences*. John Wiley & Sons, NY, USA, 2009.
12. Laland KN. The mathematical modelling of human culture and its implications for psychology and the human sciences. *Br J Health Psychol*. 1993;84(2):145-169.
13. Taylor SE, Way BM, Welch WT, Hilmert CJ, Lehman BJ, Eisenberger NI. Early family environment, current adversity, the serotonin transporter promoter polymorphism, and depressive symptomatology. *Biol Psychiatry*. 2006;60(7):671-676.
14. Coccaro EF, Kavoussi RJ. Fluoxetine and impulsive aggressive behavior in personality-disordered subjects. *Arch Gen Psychiatry*. 1997;54(12):1081-1088.

15. Gobster PH, Delgado A. Ethnicity and recreation use in Chicago's Lincoln Park: In-park user survey findings. *Managing urban and high-use recreation settings*. 1993;163:75-81.
16. Pizam A, Jeong GH, Reichel A, Van Boemmel H, Lusson JM, Steynberg L, et al. The relationship between risk-taking, sensation-seeking, and the tourist behavior of young adults: A cross-cultural study. *J Travel Res*. 2004;42(3):251-260.
17. Hariri AR, Mattay VS, Tessitore A, Kolachana B, Fera F, Goldman D, et al. Serotonin transporter genetic variation and the response of the human amygdala. *Science*. 2002;297(5580):400-403.
18. Carlson NR. *Foundations of Behavioral Neuroscience*. Boston, MA: Allyn & Bacon, USA. 2011.
19. Kobiella A, Reimold M, Ulshöfer DE, Ikonomidou VN, Vollmert C, Vollstädt-Klein S, et al. How the serotonin transporter 5-HTTLPR polymorphism influences amygdala function: the roles of in vivo serotonin transporter expression and amygdala structure. *Transl Psychiatry*. 2011;1(8):e37.
20. Chang EC. Cultural differences in optimism, pessimism, and coping: Predictors of subsequent adjustment in Asian American and Caucasian American college students. *J Couns Psychol*. 1996;43(1):113.
21. Chang EC. Distinguishing between optimism and pessimism: A second look at the optimism-neuroticism hypothesis. In *International Congress of Psychology*, 26th, Aug, 1996, Montreal, Canada; Portions of this study were presented at the aforementioned congress. 1998. APA.
22. Long BC, Sangster JL. Dispositional optimism/pessimism and coping strategies: Predictors of psychosocial adjustment of rheumatoid and osteoarthritis patients I. *J Appl Soc Psych*. 1993;23(13):1069-1091.
23. Scheier MF, Carver CS. Optimism, coping, and health: assessment and implications of generalized outcome expectancies. *Health psychology*. 1985;4(3):219.
24. Scheier MF, Carver CS. Effects of optimism on psychological and physical well-being: Theoretical overview and empirical update. *Cognitive Ther Res*, 1992;16, 201-228.
25. Radford MH, Mann L, Ohta Y, Nakane Y. Differences between Australian and Japanese students in decisional self-esteem, decisional stress, and coping styles. *J Cross Cult Psychol*. 1993;24(3):284-297.
26. Rothbaum F, Tsang BY. Love-songs in the United States and China: On the nature of romantic love. *J Cross Cult Psychol*. 1998;29(2):306-319.
27. Üstün TB, Sartorius N. *Mental illness in general health care: an international study*. John Wiley & Sons, NY, USA, 1995.
28. Simon GE, Goldberg DP, Von Korff M, Üstün TB. Understanding cross-national differences in depression prevalence. *Psychol Med*. 2002;32(4):585-594.
29. Uchida Y, Townsend SS, Rose Markus H, Bergsieker HB. Emotions as within or between people? Cultural variation in lay theories of emotion expression and inference. *Pers Soc Psychol Bull*. 2009;35(11):1427-1439.
30. Heine SJ. *Living in multicultural worlds*. Cultural psychology (2nd edn). New York, NY: WW Norton & Company, Inc, USA, 2012.
31. Ishii K, Kitayama S. Processing of emotional utterances: Is vocal tone really more significant than verbal content in Japanese?. *Cogn Stud*. 2002;9(1):67-76.
32. Chen GM. Differences in self-disclosure patterns among Americans versus Chinese: A comparative study. *J Cross Cult Psychol*. 1995;26(1):84-91.
33. Morita S. The true nature of shinkeishitsu and its treatment. In *Anthology of theses commemorating the 25th anniversary of Professor Kure's appointment to his chair*. Tokyo: Jikei University. 1917.
34. Klerman GL, Weissman MM. Increasing rates of depression. *JAMA-J Am Med Assoc*. 1989; 261, 2229-2235.
35. Putnam RD. *Bowling alone: The collapse and revival of American community*. Simon and Schuster, UK, 2000.
36. Sullivan LE, editor. *The SAGE glossary of the social and behavioral sciences*. Sage; 2009.
37. Hagnell O, Lanke J, Rorsman B, Öjesjö L. Are we entering an age of melancholy? Depressive illnesses in a prospective epidemiological study over 25 years: the Lundby Study, Sweden. *Psych Med*. 1982;12(2):279-289.
38. Lavori PW, Klerman GL, Keller MB, Reich T, Rice J, Endicott J. Age-period-cohort analysis of secular trends in onset of major depression: findings in siblings of patients with major affective disorder. *J Psych Res*. 1987;21(1):23-35.
39. Murphy JM, Monson RR, Olivier DC, Sobol AM, Leighton AH. Affective disorders and mortality. *Arch Gen Psychiatry*. 1987; 44: 473-480.
40. Crow TJ. Secular changes in affective disorder and variations in the psychosis gene. *Arch Gen Psychiatry*. 1986;43(10):1013-1014.
41. Kessler RC, Berglund P, Demler O, Jin R, Koretz D, Merikangas KR, et al. The epidemiology of major depressive disorder: results from the National Comorbidity Survey Replication (NCS-R). *Jama*. 2003;289(23):3095-3105.
42. Crowell BA, George LK, Blazer D, Landerman R. Psychosocial risk factors and urban/rural differences in the prevalence of major depression. *Br J Psychiatry*. 1986;149(3):307-314.
43. Romans S, Cohen M, Forte T. Rates of depression and anxiety in urban and rural Canada. *Soc Psych Psych Epid*. 2011;46(7): 567-575.
44. Lee CK, Kwak YS, Rhee H, Kim YS, Han JH, Choi JO, et al. The epidemiological study of mental disorders in Korea: lifetime prevalence of urban and rural area. *J Korean Med Assoc*. 1985;28:1223-1244.
45. Park JH, Kim KW. A review of the epidemiology of depression in Korea *J Korean Med Assoc./Taehan Uisa Hyophoe Chi*. 2011;54(4):1-2.
46. Taylor SE, Welch WT, Kim HS, Sherman DK. Cultural differences in the impact of social support on psychological and biological stress responses. *Psych Sci*. 2007;18(9):831-837.