

## Sociocultural domains of depression among indigenous populations in Latin America

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### Abstract

Not enough research has been carried out on depression up to now in Latin America. The knowledge that has resulted from research activities in the USA or Europe offers limited generalizability to other regions of the world, including Latin America. In the Andean highlands of Ecuador, we found very high rates of moderate and severe depressive symptoms, a finding that must be interpreted within its cultural context. Somatic manifestations of depression predominated over cognitive manifestations, and higher education level was protective against depression. These findings call for an appreciation of culturally specific manifestations of depression and the social factors that influence them. These factors must be further studied in order to give them the deserved priority, allocate resources appropriately, and formulate innovative psychosocial interventions.

### Introduction

While research on depression has been carried out throughout the world (Andrade et al., 2003), the majority of studies on this subject have been limited to western countries, particularly the USA (Kessler et al., 2003). Because one billion of the nearly six billion people in the world are of white European and North American ancestry (Marsella & Kaplan, 2002), the generalizability of these findings remains limited and thus more extensive cross-cultural research is needed. According to the 2007 World Health Organization Report, the disability-adjusted life years (DALYs) resulting from psychiatric and neurological conditions has more than doubled between 1990 (8.8% of DALYs) and 2002 (22.2% of DALYs) (WHO, 2007). Among women, major depression is the leading cause of disease-related disability worldwide (Kessler, 2003). Although the exact gender ratio varies slightly between cultures, most nations across the world have reported that approximately twice as many women have depression as men (Angst et al., 2002; Kuehner, 2003). Given the limited access and availability of health care

services in many poor regions of the world, the treatment gap continues to grow and resources devoted to mental health care are virtually non-existent (Kohn, Saxena, Levav, & Saraceno, 2004).

Obstacles to obtaining mental health care in underserved and understudied regions of the world are numerous: the poorly developed health care programmes, the lack of adequately trained professionals, the stigmatization of mental illness, and the dearth of culturally sensitive instruments for diagnosing mental illness (Patel & Kleinman, 2003). Therefore, the access to mental health care in these regions is severely limited. In addition, there is not enough knowledge based on underserved countries with respect to the psychosocial basis of most psychiatric disorders, the physiological basis of mental illness, and the positive correlation between mental well-being and economic wealth. Social factors such as widespread poverty, homelessness, violence, and alcohol and substance abuse further exacerbate the problem of growing health and mental health care disparities.

Latin America was colonized about 500 years ago primarily by Spain and Portugal. Despite its Iberian

cultural history and heritage, the present-day Latin American clearly embodies a new cultural 'identity'. In this context, mental health disturbances often manifest differently than they would in other regions of the western world. For example, symptoms of depression in Latin America frequently manifest somatically, as through headaches, gastrointestinal disturbances, or complaints of 'nervios' (meaning 'nerves' in Spanish). This is in contrast to psychological symptoms such as sadness or anhedonia, which is how depression frequently manifests in the western world (Escobar & Gureje, 2007). Furthermore, research studies suggest that the prevalence of somatic symptoms of depression are higher in women than in men with similar depression severity (Silverstein, 2002; Uebelacker, Strong, & Weinstock, 2008). This may be due to hormonal differences (Wenzel, Steer, & Beck, 2005) and/or differences cultural gender roles and social norms (Silverstein & Lynch, 1998). Because of its somatic presentation and the dearth of mental health programmes in these regions, depression is frequently diagnosed in primary care settings.

In order to enhance the cross-cultural understanding of depressive symptomology and to promote the creation of a culturally relevant nosology and diagnostic tools, this study seeks to better understand the somatic and cognitive domains of self-reported depressive symptoms, and to identify gender differences in these symptoms, in this underserved region of the Andean highlands of Ecuador.

### Methodology

In order to reduce cultural bias, the original Spanish Beck Depression Inventory-II (BDI-II) was created through a series of translations and back-translations by a group of psychologists from the USA, Central and South America (Brislin, Lonner, & Thorndike, 1973). The resulting 21-item self-reported scale of depressive symptoms has been validated in several Latin American populations (Bonilla, Bernal, Santos, & Santos, 2004). In this study, conducted in 2006, the Spanish BDI-II was administered to individuals presenting to primary care clinics run by volunteer physicians and nurses in seven small parishes along the southern Andes of the Zamora-Chinchiipe province of Ecuador. The nearest hospital was several hundred miles away, so the population relied heavily on mobile medical clinics and local healers for their provision of health and mental health care.

All subjects who presented to the mobile medical clinics were offered the opportunity to have a brief mental health screen by means of the BDI-II. If literate, subjects completed the self-report questionnaires on their own. If illiterate, the questions were read to them by a native Spanish speaker staff who

worked at the clinic. Demographic data – gender, age, ethnicity, marital status, educational level and occupation – was collected via a self-report questionnaire during the administration of the BDI-II. Of all subjects invited to take the BDI-II, about 25% chose to participate, which resulted in 167 study subjects: 71 males and 96 females. Individuals who exhibited suicidal ideation on the BDI-II (2.1% of our subjects) were given a comprehensive suicide assessment, appropriate counselling by the medical staff, and an appointment with the parish priest for follow-up. Institutional Review Board approval was obtained by the New York University School of Medicine to complete this study.

BDI-II total scores were calculated for all subjects, and a dichotomous BDI-II depression variable, using the standardized Beck scoring criteria, was created using the BDI-II total score. BDI-II total scores of less than 20 (none and mild depression, in accordance with the Beck designation) were considered non-depressed, while BDI-II total scores greater than or equal to 20 (moderate and severe depression) were considered depressed. Continuous variables (e.g. age and BDI-II totals) were examined across gender using the t-test statistic. Distributions of the categorical demographic measures (e.g. education, marital status, ethnicity, etc.) were also examined across gender, with differences tested bi-variately with chi-square statistics. Education was categorized on an ordinal basis into elementary level, high school level or college level attainment. Occupational grade was dichotomized into blue collar/service positions and small business/administrative/professional positions. As an integrative analysis, logistic regression was performed with the dichotomized BDI-II total as the dependent outcome measure.

In previous factor analyses of the BDI-II, Beck and colleagues found a two-factor solution to adequately fit a primary care sample (Steer, Cavalieri, Leonard, & Beck, 1999), which was later confirmed in a Spanish-speaking medical sample (Penley, Wiebe, & Nwosu, 2003). The first factor was the somatic-affective factor, which included 12 items (sadness/loss of pleasure/agitation/loss of interest/indecisiveness/loss of energy/changes in sleep patterns/irritability/changes in appetite/concentration difficulty/fatigue/loss of interest in sex). The second factor was the cognitive factor, which included eight items (sadness/pessimism/past failure/guilty feelings/punishment feelings/self-dislike/suicidal ideation/worthlessness) (Arnau, Meagher, Norris, & Bramson, 2001). The item of self-criticalness did not load saliently on either factor. In our study, the aforementioned two-factor solution was applied to our sample and the item of self-criticalness was excluded from the final analysis. Since there were more somatic-affective items than cognitive items in the BDI-II, the mean item score for

somatic-affective items was compared to the mean item score for cognitive items to determine which of these two factors predominated in this Latin American population.

## Results

As seen in Table I, of the 167 patients to whom the BDI-II was administered, nine subjects were excluded from the final analysis because they did not answer more than 20% of the BDI-II questions. The ages of the remaining subjects ranged from 15 to 76 years with a mean age of  $33.8 \pm 13.1$  years. The men and women did not significantly differ in age, with the men being  $33.9 \pm 13.1$  years and the women being  $33.7 \pm 13.1$  years. The ethnic backgrounds of the subjects were either Saraguro ( $N=39$ ) or Mestizo ( $N=119$ ). Saraguro Indians are indigenous to the region, while the Mestizo people are of mixed indigenous and European or North African ancestry. The stated occupations of the subjects were recorded, with the top three occupations among men being farmer (25.4%), miner (15.5%) and student (15.5%) and the top three occupations among women being domestic/housewife (60%), student (12%) and school teacher (6%). The women showed a trend for being slightly more educated than the men ( $p=0.097$ ). In terms of marital status, there was a trend for more women to be divorced or widowed (11.6%) than the men (1.6%).

BDI-II scores ranged from 0 to 57 with a mean BDI-II score of  $23 \pm 12$ , which correlates with

moderate depression. Overall, 25% of subjects scored in the range of none or minimal depression ( $BDI-II < 14$ ) and 15% scored in the range of mild depression ( $BDI-II 14-19$ ). The remaining 60% of subjects showed moderate depression (28%) or severe depression (32%). The greatest number of respondents reported symptoms of crying (55%) and feelings of past failure (41%). The questions most frequently unanswered by the subjects in this study were suicidal ideation (16 omitted), changes in sleep pattern (10 omitted), loss of interest in sex (9 omitted), changes in appetite (9 omitted), worthlessness (6 omitted), and irritability (6 omitted). Women self-reported higher levels of sleep disturbance ( $t=2.77$ ,  $df=146$ ,  $p=0.006$ ) and fatigue ( $t=2.09$ ,  $df=154$ ,  $p=0.038$ ) than men. There was a non-significant gender difference in BDI-II totals and BDI-II somatic totals in the expected direction, with women exhibiting more depressive symptoms and somatic symptoms than men ( $t=1.67$ ,  $df=156$ ,  $p=0.098$  and  $t=1.98$ ,  $df=154$ ,  $p=0.058$ , respectively). The BDI-II cognitive totals and the distribution of the dichotomized BDI-II totals did not significantly differ across gender. Somatic symptoms predominated in this sample. As predicted, the mean item score on the somatic items was significantly higher than the mean item score on the cognitive items ( $1.25 \pm 0.63$  versus  $0.78 \pm 0.56$ ,  $t=12.42$ ,  $df=148$ ,  $p=0.001$ ).

A logistic regression analysis was performed using the dichotomized BDI-II total as the dependent measure while entering all other variables into the

Table I. Demographic variables and Spanish Beck Depression Inventory-II measures compared across gender.

Variable; mean (SD)	Males ( $N=65$ )	Females ( $N=93$ )	Test statistic
<b>Demographics</b>			
Age in years	33.9 (13.1)	33.7 (13.1)	$t=0.1$ , 155, 0.923
<b>Education</b>			
Elementary	39 (60.0%)	43 (46.2%)	$\chi^2=4.67$ , 2, 0.097
High School	19 (29.2%)	43 (46.2%)	
College	7 (10.8%)	7 (7.5%)	
<b>Marital status</b>			
Single	28 (44.4%)	33 (36.3%)	$\chi^2=5.25$ , 2, 0.073
Married	34 (54.0%)	48 (52.7%)	
Divorced/widowed	1 (1.6%)	10 (11.0%)	
<b>Ethnicity</b>			
Mestizo	45 (69.2%)	74 (79.6%)	$\chi^2=2.2$ , 1, 0.138
Saraguro Indians	20 (30.8%)	19 (20.4%)	
<b>Occupation</b>			
Blue Collar	49 (75.4%)	64 (69.6%)	$\chi^2=0.64$ , 1, 0.424
Business/Administration/ Professional	16 (24.6%)	28 (30.4%)	
<b>BDI-II Depression</b>			
BDI-II total	20.4 (11.4)	23.4 (11.1)	$t=1.67$ , 156, 0.098
BDI-II somatic total	14.5 (8.2)	17.1 (7.7)	$t=1.98$ , 154, 0.058
BDI-II cognitive total	5.6 (4.0)	6.4 (4.5)	$t=1.1$ , 149, 0.273
BDI-II $\geq 20$	34 (52.3%)	59 (63.4%)	$\chi^2=1.96$ , 1, 0.162

model. As seen in Table II, this analysis showed education level to be the only significant predictor of BDI-II depression, whereby a higher education level was associated with decreased symptom severity. Elementary school educated individuals exhibited the highest levels of depressive symptoms, while college educated individuals exhibited the lowest.

## Discussion

We examined the variation in manifestations of depressive symptoms in an Ecuadorian population using the Spanish Beck Depression Inventory (BDI-II). In accordance with our hypothesis, we found that somatic manifestations of depression predominated over cognitive manifestations in this Latin American population. Women showed a non-significant trend towards higher rates of depressive symptoms than men. A higher educational level was associated with decreased symptom severity, an effect that was independent of occupational grade and, therefore, socioeconomic status.

To ensure a culturally appropriate interpretation of our study results, the Ecuadorian perspective of depression and mental illness must be taken into account. A culturally relevant psychiatric illness called 'nervios' has been identified as a powerful idiom of distress by the Saraguro Indians of Ecuador as well as Hispanics/Latinos from a variety of Caribbean, Central and South American countries. 'Nervios', which produces symptoms similar to those seen in depression in the western world (Parsons & Wakeley, 1991), is a culturally accepted means of expressing concerns about physical distress, emotional states, and life changes (Guarnaccia & Farias, 1988). Unlike the western conception of depression as a pathological and treatable neurochemical disturbance, 'nervios' is not necessarily pathological but is seen as a natural consequence of the human condition.

When using western cut-points for depression, the data indicate that 60% of the subjects in the study had BDI-II total scores that correlate with moderate or severe depressive symptomology. If a constellation of symptoms affects 60% of a population, can they truly be pathological? In the western model, severe, clear-cut depression, especially if combined with manic phases, is an unequivocal psychiatric disorder that conforms satisfactorily to the medical model. However, milder episodes of depressive affect cannot always be accurately distinguished from ordinary human unhappiness or 'the blues'; that is, states of mind that do not justify a diagnostic label (Chodoff, 2002).

Similar to depression in the western world, 'nervios' also exists on a spectrum of severity. In its most extreme form, 'nervios' can be pathological or even fatal (Finerman, 1989). In such cases, the sufferer will exhibit extreme lack of concern for personal hygiene, significant disturbances of appetite or sleep, and/or severe anhedonia. The most serious cases of 'nervios' involve suicidal thinking and/or non-epileptic seizure activity. In its less extreme form, 'nervios' is considered a normal, non-pathological response to the trials and tribulations of daily life. The Saraguro's acceptance of 'nervios' as a part of the normal human experience, free from the stigma often associated with mental illness in the western world, may explain the high prevalence of self-reported depressive symptoms in our sample (Parsons, 1979).

The difference between the western and Saraguro perspectives on symptoms of distress begs the question as to what is truly pathological, and what exists on the fringes of normal human experience? It is important to consider the dangers of applying diagnostic labels to unpleasant or undesirable feelings or behaviors, thereby pathologizing and medicalizing normal human suffering (Kleinman, 2008). Furthermore, there is very little incentive to medicalize the symptoms of 'nervios' in a region of the world

Table II. Logistic regression analysis of Spanish Beck Depression Inventory-II Score by demographic variables using dichotomized BDI-II total (<20 versus >20).

Demographic Variables	B	SE	Wald	Df	P value	Exp(B)	95% C.I. for Exp(B)	
							Lower	Upper
Gender	0.501	0.369	1.838	1	0.175	1.65	0.8	3.404
Age	-0.003	0.017	0.028	1	0.868	0.997	0.965	1.03
Education*			9.818	2	0.007			
High school	-0.808	0.424	3.631	1	0.057	0.446	0.194	1.023
College	-2.541	0.832	9.333	1	0.002	0.079	0.015	0.402
Ethnicity	0.518	0.428	1.467	1	0.226	1.678	0.726	3.88
Marital status	0.033	0.343	0.009	1	0.923	1.034	0.528	2.025
Occupation	0.61	0.504	1.468	1	0.226	1.841	0.686	4.943

\*High school and college are compared to elementary as the index.

with limited psychiatric care and potential forms of treatment. In the region where this study was conducted, antidepressants are available only at a hospital hundreds of miles away and occasionally at mobile medical clinics. Moreover, the primary mental health provider is a priest responsible for the care of several hundreds of patients in the nearby provinces.

As has been suggested by past reports (Escobar & Gureje, 2007), our results indicate that somatic manifestations of depression in this region of Ecuador predominate over cognitive manifestations. The most common BDI-II items endorsed by the subjects included crying, loss of energy, changes in appetite, and loss of interest in sex. In past studies, Saraguro Indians reported similar symptoms in 'nervios', that is, profound sadness, loss of appetite, sleep and interest, fatigue, headaches, poor concentration and chest pain (Tousignant, 1984). As the Saraguro Indians recognize somatic ailments to be a more socially acceptable and a less stigmatizing form for the expression of distress, it is hardly surprising that somatic manifestations of depression predominate over cognitive manifestations. In our study sample, women self-reported higher levels of sleep disturbance and fatigue than men. The gender differences observed in this study may reflect the different means through which men and women cope with stress in the Ecuadorian culture. While women are more likely to somaticize symptoms of distress, men are more likely to resort to alcoholism as a means of warding off or avoiding such symptoms. The concept of somatization and the respective gender differences observed in this study are not unique to Ecuadorian or even Latino cultures. For example, in a Canadian sample it has been shown that up to 80% of depressed primary care patients initially present with somatic symptoms (Kirmayer, Robbins, Dworkind, & Yaffe, 1993). In the western world, somatic manifestations of distress are typically associated with women and ethnic/racial minorities, or, in other words, groups that have been historically disadvantaged in society. Since cultural norms are socially constructed, we wonder if rather than asking why certain populations are more likely to somaticize, we can instead ask why westerners 'psychologize', or express distress in cognitive or affective terms (Kirmayer, 2001).

Our study found the highest level of depressive symptoms among patients with only an elementary school education, the lowest level of depressive symptoms in college educated patients, and an intermediate level of depressive symptoms in those patients with a high school education. Numerous studies support the idea that higher educational attainment may be protective against depression (Fryers, Melzer, & Jenkins, 2003).

Education empowers individuals with knowledge, skills and values compatible with improved work, salary benefits and social status. Moreover, it fosters healthy habits and attitudes such as dependability, judgement, motivation, effort, perseverance, and confidence (Terzi, 2007). In essence, higher educational level tends to lead to a greater sense of personal control over one's life (Mirowsky & Ross, 2003). One cannot discount the possibility that people with mild or no depression may be able to more effectively pursue higher levels of education than those with moderate or severe depression. People with a more internal locus of control show better concentration, better working memory, more effort and persistence, and lower levels of psychological distress than their peers with a more external locus of control (Darity, 2003). In contrast, poorly educated individuals may lack the resources necessary to achieve their goals and produce feelings of powerlessness and helplessness (Wheaton, 1980). While education increases learned effectiveness, its absence fosters learned helplessness.

In contrast to education, occupational grade was not protective against depressive symptoms in our study. These results may seem surprising, since both education and occupational grade are commonly seen as proxies for socioeconomic status (SES) (Ross & Mirowsky, 2006). However, in the region where this study was undertaken, education and occupation have a different relationship than they do in industrialized nations. In close-knit rural communal societies, high socioeconomic status brings with it greater responsibility to the community and society as a whole (Finerman, 1989). In the Ecuadorian highlands, for instance, individuals in more profitable professions are susceptible to greater effects of 'nervios' due to the greater burden of responsibility placed on them by their community-orientated family and society. For such individuals, consciously or unconsciously exhibiting the symptoms of 'nervios' may temporarily absolve them of their duties, which may explain why a higher occupational grade is not protective against depressive symptomatology. Another explanation for these findings is that unlike one's education, which produces personal empowerment through the development of knowledge, attitudes and values compatible with an internal locus of control, one's occupation produces external benefits like monetary profits and tangible achievements (Sen, 1997). Unlike occupation, the benefits of education are internal and thus become a part of the person who obtains it.

Our study did not find a significant relationship between age and depressive symptom severity. According to the Saraguro culture, all adults irrespective of age are susceptible to experiencing 'nervios'. In contrast, children are generally shielded

from many of life's stressors, such as social obligations and occupational responsibilities, and therefore do not experience 'nervios'. Since the youngest person in our study was 15 years old, we were unable to verify this phenomenon. In the USA, the prevalence of depression has been shown to increase linearly with age. The most depressed age group is adults over the age of 80, presumably due to losses in the spheres of family, employment, health, economic well-being and, ultimately, personal control over one's life (Barefoot et al., 2000). The positive correlation between age and depressive symptoms was not seen in our study, likely because in the Ecuadorian community increased age is associated with perceived greater wisdom and life experience. In contrast to many western cultures, the elders in this Ecuadorian community are treated with the greatest respect and esteem of all community members. Subsequently, their personal losses are compensated for by their increase in status and esteem within the community.

It is interesting to consider whether there are certain questions that may not have a cultural equivalence among the rural Ecuadorians and were therefore omitted on the BDI-II by the study subjects. The questions most frequently not answered by the study subjects were suicidal ideation (16 omitted), changes in sleep pattern (10 omitted), loss of interest in sex (9 omitted), changes in appetite (9 omitted), worthlessness (6 omitted), and irritability (6 omitted). Although we cannot know retrospectively why our subjects chose to omit certain questions, nor can we assume that all subjects who omitted a certain question did so for the same reason, we can hypothesize that different questions may have been omitted for different reasons. The two questions – changes in sleep and changes in appetite – had a different question structure than the remaining questions. Whereas all other questions asked subjects to choose one number between 0–3 to describe an aspect of their cognitive or somatic-affective state in the past two weeks, the aforementioned two questions had two choices for each of 0–3 of which subjects were asked to choose just one (i.e. a score of 1 on the changes in sleep question corresponded to either 'sleeping a little more than usual' or 'sleeping a little less than usual'), thereby making these questions potentially confusing to our study subjects. We may hypothesize that disclosure of suicidal ideation and loss of interest in sex were particularly personal and sensitive topics that our study subjects were reluctant to disclose even on a confidential questionnaire. Furthermore, some of our study subjects were young and/or unmarried, thereby potentially making the interest in sex question not relevant or even taboo within the context of their culture or current life. It is also possible that

some of the questions on the BDI-II were not answered because they did not have cultural equivalents in this particular Latin population.

Our study has several limitations. First, the BDI-II provides a measure of symptom severity, rather than a diagnosis of depression. As with all self-reported inventories, scores may be exaggerated or minimized by the subjects. When completed in the presence of other people in a clinical setting, social expectations may influence one's responses. Since the BDI-II was not previously validated in our study sample, we assumed similar factor loading (somatic-affective versus cognitive) to other Spanish speaking medical samples as previously formulated by Beck and colleagues (Steer et al., 1999). Since factor structure may change as a function of the characteristics of the study sample in question and extraction method used by the researcher, this assumption must also be acknowledged as a potential limitation.

Next, our study has a meaningful selection bias since this was a non-representative sample. In medically ill patients, the BDI-II's reliance on somatic symptoms may artificially inflate the score (Clark, Cavanaugh, & Gibbons, 1983). Numerous studies have noted higher levels of self-reported depression in medical samples (Barefoot et al., 2000). A study positively correlating the BDI-II somatic factor with illness severity and age provides support for the exclusion of somatic items when administering the BDI-II to a medical sample (Karanci, 1998). However, empirical studies have consistently demonstrated that for medical patients somatic symptoms are, indeed, good indicators of depression (Norris & Woehr, 1998). One study showed that somatic items correlated with depression as well as did total BDI-II score (Parsons & Wakely, 1991). In the same study, the BDI-II total score, which included somatic items, was 92% accurate in detecting major depressive disorder, thus indicating that the inclusion of the somatic items did not detract for the BDI-II's predictive utility. Furthermore, in cultures where somatic manifestations of depression predominate over cognitive symptoms, the BDI-II may serve to enhance the overall accuracy of depression detection.

Given that our study had a limited participation rate of 25%, it may not be used to make confident inferences about the culturally specific manifestations of depression in this particular population. Despite its limitations, our study provided an initial revealing glimpse into depression symptomology in an understudied and underserved region of Latin America that has seen an increasing burden of illness attributable to neuropsychiatric illnesses in recent years. Because depression frequently presents itself psychosomatically in the population studied, regular depression screenings in primary care settings may

serve as efficient and culturally-sensitive detection tools.

While this research contributes to our cross-cultural knowledge about mental health and depression, larger-scale prospective, longitudinal studies are necessary to further elucidate the relationship between mental health and psychosocial factors, as well as to enhance cross-cultural understanding of depression. Future studies should aim to cross-culturally validate the nature of the disorders themselves and the psychometrics necessary for diagnosis. In underserved settings with limited access to mental health services, an understanding of culturally specific symptoms of depression and the social factors that influence them must also be further elucidated in order to improve advocacy, ensure more accurate depression diagnosis, formulate innovative psychosocial interventions, and secure the allocation of resources commensurate with mental health needs.

## Conclusion

Obviously not enough research has been done in remote areas of Latin America on the topic of depression. Scientific knowledge acquired in developed countries and the United States has limited generalizability to other remote regions of the world. This study was aimed at bringing light and generating new knowledge on the topic of depression in remote areas of Latin America. Our study showed the role of culture in the expression of depressive symptomatology; additionally, the role of somatization versus cognitive manifestations was clearly depicted among certain groups of indigenous populations in Ecuador. Moreover, high levels of education appear to have a protective role among this Ecuadorian Indian population vis-à-vis depression.

Our study clearly demonstrated the significance of culturally specific manifestations of depression, as well as the psychosocial factors that influence them. Hopefully, future research efforts will bring additional light to such population subgroups around the world.

## Declaration of interest

The authors report no conflicts of interest. The authors alone are responsible for the content and writing of the paper.

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