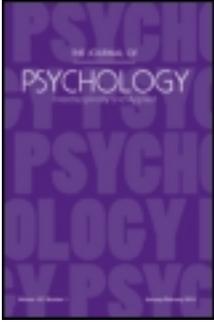


This article was downloaded by: [Derek Richards]

On: 10 January 2014, At: 01:24

Publisher: Routledge

Informa Ltd Registered in England and Wales Registered Number: 1072954
Registered office: Mortimer House, 37-41 Mortimer Street, London W1T 3JH,
UK



The Journal of Psychology: Interdisciplinary and Applied

Publication details, including instructions for
authors and subscription information:

<http://www.tandfonline.com/loi/vjrl20>

Point-Prevalence of Depression and Associated Risk Factors

Derek Richards ^a & Alicia Salamanca Sanabria ^b

^a Trinity College Dublin

^b Universidad Antonio Nariño

Published online: 09 Jan 2014.

To cite this article: Derek Richards & Alicia Salamanca Sanabria , The Journal of Psychology (2014): Point-Prevalence of Depression and Associated Risk Factors, The Journal of Psychology: Interdisciplinary and Applied, DOI: [10.1080/00223980.2013.800831](https://doi.org/10.1080/00223980.2013.800831)

To link to this article: <http://dx.doi.org/10.1080/00223980.2013.800831>

PLEASE SCROLL DOWN FOR ARTICLE

Taylor & Francis makes every effort to ensure the accuracy of all the information (the "Content") contained in the publications on our platform. However, Taylor & Francis, our agents, and our licensors make no representations or warranties whatsoever as to the accuracy, completeness, or suitability for any purpose of the Content. Any opinions and views expressed in this publication are the opinions and views of the authors, and are not the views of or endorsed by Taylor & Francis. The accuracy of the Content should not be relied upon and should be independently verified with primary sources of information. Taylor and Francis shall not be liable for any losses, actions, claims, proceedings, demands, costs, expenses, damages, and other liabilities whatsoever or howsoever caused arising directly or indirectly in connection with, in relation to or arising out of the use of the Content.

This article may be used for research, teaching, and private study purposes. Any substantial or systematic reproduction, redistribution, reselling, loan, sub-licensing, systematic supply, or distribution in any form to anyone is expressly forbidden. Terms & Conditions of access and use can be found at <http://www.tandfonline.com/page/terms-and-conditions>

Point-Prevalence of Depression and Associated Risk Factors

DEREK RICHARDS
Trinity College Dublin

ALICIA SALAMANCA SANABRIA
Universidad Antonio Nariño

ABSTRACT. The study aimed to assess levels of depressive symptoms and associated risk factors in a sample of students in Bogotá, Colombia. A convenient sample ($N = 254$) of students at the University Antonio Nariño, Bogotá was invited to complete an online survey that contained questions associated with common risk factors for depression and the Beck Depression Inventory (BDI-II). Chi-square was used to analyze comparisons between demographic and risk factors and severity of depression, and comparisons between those depressed and not depressed. Odds Ratios and their 95% confidence interval (95% CI) were computed through logistic regression model developed for each independent variable. The point-prevalence of current depressive symptoms was 36.2%; women 47.3% and men 21.3%. Risk factors associated with depression included being a woman, having a previous diagnosis, suicidal ideation and (or) intent, sleep problems, a recent loss, and a history of family depression and alcoholism. The study confirms the high incidence of depression and associated risk factors in students. The results demonstrate a need for prevention measures, early detection and early intervention.

Keywords: depression prevalence, depressive symptoms, Latin America, risk factors for depression, students

DEPRESSION HAS BEEN RANKED HIGH among the leading causes of disease burden throughout the world (Mathers & Loncar, 2006), displaying high rates of lifetime incidence, early age onset, high chronicity, and role impairment (Richards, 2011). Prevalence rates for depression in low-income countries, such as Colombia, are not far removed from rates reported in the United States, Europe, and other high-income countries (Gómez-Restrepo et al., 2004). In the United States, prevalence rates have been estimated at 6.6% (Kessler et al., 2003), and in Europe at 8.5% (Ayuso-Mateos et al., 2001).

Address correspondence to Dr. Derek Richards, Research Fellow, School of Psychology, University of Dublin, Trinity College, Dublin 2, Ireland; derek.richards@tcd.ie (e-mail).

In Colombia, 12-month prevalence of depression has been estimated at 6.8% to 10% (Gómez-Restrepo et al., 2004; Kohn et al., 2005; WHO World Mental Health Survey Consortium, 2004). What is clear is that depressive disorders are frequent in the general population. Previous research from Colombia, Latin America, and indeed worldwide have identified several potent risk factors that are significantly associated with depression, some of which include being a woman, marital status, previous episodes of depression, sleep problems, recent significant losses, suicidal ideation and (or) intent, alcohol and drug misuse (consuming marijuana, addictive substances, stimulants, or tranquilizers), suffering from pain or discomfort, having difficulties in interpersonal relations, being unemployed or unable to work, and certain medical conditions (Amézquita, González, & Zuluaga, 2003; Arrivillaga, Cortés, Goicochea, & Lozano, 2004; Gómez-Restrepo et al., 2004; Miranda, Gutiérrez, Bernal, & Andres, 2000; Osornio & Palomino, 2009; Richards, 2011).

Epidemiological studies highlight the occurrence of depression in younger age groups. A recent review of the literature posits the peak years for onset at 15–29 years (Craighead, Sheets, Brosse, & Ilardi, 2007). In general, depression ranks higher among the leading causes of disease burden for women than for men (Üstün, Ayuso-Mateos, Chatterji, Mathers, & Murray, 2004). Prevalence rates and gender differences are relatively constant across the adult lifespan and given the earlier age onset suggests that lifetime prevalence will be higher in the future for younger cohorts (Craighead et al., 2007; Richards, 2011).

Depression exacts significant economic, personal, intra-personal, and societal costs (Richards, 2011). The significant economic cost alone is reason enough to accurately understand and treat depression in individuals (Richards, 2011). Depressive disorders are associated with losses in quality of life and increased mortality rates (Cuijpers & Schoevers, 2004; Rapaport, Clary, Fayyad, & Endicott, 2005). Worldwide a large percentage of affected individuals have no medical diagnosis nor seek treatment (Andrews, Sanderson, Slade, & Issakidis, 2000). One study estimated the worldwide treatment gap in depression at 56.3% (Kohn, Saxena, Levav, & Saraceno, 2004). Several barriers to accessing treatment exist, such as waiting lists, lack of motivation for change, negative perception of psychological and (or) drug treatments, costs, and personal difficulty such as stigma; each can play an important role in choosing to seek diagnosis and treatment (Kohn et al., 2004; Mohr et al., 2010). However, access to evidence-based psychological and psychiatric diagnosis and treatments is severely limited throughout the world, and even more so for lower-income countries (Kessler et al., 2003; Ministerio de Protección Social, 2003). The situation is serious, firstly, because of the projected increase in depression to rank second in the global burden of disease by 2020 and secondly, because of the evidence accumulated for the benefits of early psychological and psychiatric intervention, particularly for younger age groups, such as university students (Lopez & Murray, 1998; Royal College of Psychiatrists, 2011).

Depression in Students

In high-income countries several studies have reported elevated levels of depression in university students (Royal College of Psychiatrists, 2003, 2011). Similarly, studies of university students in Latin America have reported high levels of depression and other mental health problems. For instance, one study reported high levels of depression (30%) in students (Arrivillaga et al., 2004). Another reported high levels of depression and stress in a student sample in Colombia (Falla & Alfonso, 2006). This is similar to other reports from Latin American countries (Cova et al., 2007; Nogueira, Neto, & Macedo, 2004).

The transition to university and the management of the academic demands can be experienced as a stressful time for many students. Developmentally students are at a stage where the onset of mental health difficulties can arise and any stressors may act as a catalyst for their inception (Dyson & Renk, 2006; Osornio & Palomino, 2009; Royal College of Psychiatrists, 2003, 2011). Indeed, young adults aged 17–25 are at high risk of developing a serious mental illness such as depression, and while sometimes mental disorders can be difficult to diagnose early on, the risk of delayed diagnosis is often associated with treatment resistance and poorer longer-term outcomes (Royal College of Psychiatrists, 2011). The result of a lack of opportunity for early diagnosis and treatment can often mean academic failure and dropping out of university; further, any such underachievement or failure can have long-term consequences on self-esteem and progress in one's life (Royal College of Psychiatrists, 2011). The prevalence and consequences of mental health difficulties are ubiquitous irrespective of whether one lives in a high-income or low-income country (Murray & Lopez, 1996).

The Context: Bogotá, Colombia

While not as prolific compared to many of the higher-income countries, studies on the prevalence of depression in Colombia have established rates similar to those found in the worldwide prevalence literature (Ayuso-Mateos et al., 2001; Gómez-Restrepo et al., 2004; Kessler et al., 2003; Kohn et al., 2005; WHO World Mental Health Survey Consortium, 2004). Bogotá's Health Plan 2008–2012 (Secretaría Distrital de Salud, 2008) recognizes the need to develop appropriate health and mental health services so that individuals can achieve a good quality of life, including guaranteeing the right to mental health. However, the reality is far from the policy ideal. Some cities in Colombia have community psychological services, but most do not. Between 85–95% of individuals with mental health problems in Colombia do not access or cannot access the services they require (Ministerio de Protección Social, 2003). Surprisingly, while some prevalence and epidemiological studies, nationally (Gómez-Restrepo et al., 2004) and internationally (WHO World Mental Health Survey Consortium, 2004), have included data from Bogotá city, and some studies of student samples in other Colombian cities exist (Amézquita et al., 2003; Arrivillaga et al., 2004), to our knowledge this is the first study on the prevalence of depression in a student sample in Bogotá. Studies are

needed to establish the prevalence of mental health disorders such as depression so as to make the case for prevention, early identification and treatment. Indeed, within the context of university students it is an opportunity to realize the benefits of early detection and early intervention (Hunt & Eisenberg, 2010; Royal College of Psychiatrists, 2003). However, without data on prevalence rates and associated risk factors little can be made in establishing a case for young people's mental health in Bogotá.

Aims and Hypothesis

We aimed to assess levels of depressive symptoms and associated risk factors in a sample of students in Bogotá. In line with other studies of student samples to date, we hypothesized that we would find high levels of depressive symptoms and many important risk factors that would be positively associated with depression in the sample.

Method

Participants

Participants were all registered students at the University Antonio Nariño (UAN), Bogotá, Colombia. Bogotá is the capital city of Colombia and has a population of 7,363,782 people. The university is located in the south of the city in the Rafael Uribe Uribe neighborhood. It is the only university in this area that has a population of 375,625 people, 6.2% of the city, and has the highest population density (323 persons per hectare), above the average for Bogotá (42 persons per hectare). The population is composed of 52% women and 48% male. Sixty percent of the population is between 15 and 55 years of age. Bogotá is socio-economically stratified into 6 levels, 1 being the lowest socio-economic class and 6 being the highest socio-economic class. In Rafael Uribe Uribe, 86% are classified in the lower-middle socioeconomic classes (stratified 1–3); essentially the majority live below the poverty line. The remaining 14% are living in extreme poverty (Secretaría de Cultura Recreación y Deportes, 2008).

Two-hundred and fifty-four participants completed the questionnaire and were included in the analysis. The sample was composed of 42.5% men and 57.5% women. The age range was 16–52 ($M = 24.05$, $SD = 6.98$).

Measures

Demographic and Information on Risk Factors

Participants provided information regarding demographic factors: age and gender. Data were collected on participants' faculty/ department and year of study. In addition, participants provided information regarding common risk factors including: whether they were working, their marital status (partnered, married, separated, divorced, single, other), whether they had a previous diagnosis of depression, had problems with sleep (insomnia, waking easily, or other), any recent

loss, difficulties in different areas of their life (work, financial, partner, family, or other). Participants provided answers to the questions whether they had suicidal intent, or had suicidal thoughts, whether they knew of anyone who completed suicide, and whether in their family there was a history of depression or alcoholism. Lastly, participants provided an evaluation of their personal alcohol consumption (once a week, twice a week, three times a week, everyday).

The Beck Depression Inventory (BDI-II; Beck, Steer, & Brown, 1996)

The 21-item Beck Depression Inventory-Second Edition (BDI-II) is a widely used questionnaire developed for the assessment of depressive symptoms that correspond to the criteria for depressive disorder diagnosis as outlined in The American Psychiatric Associations Diagnostic and Statistical Manual of Mental Disorders-Fourth Edition (DSM-IV; American Psychiatric Association [APA], 2000). Each item includes four self-report statements scored on a scale from 0 to 3. The BDI-II manual states that a cut score of 17 has yielded a 93% specificity and 18% sensitivity for the presence of major depression (Beck et al., 1996). The scale designates levels of severity, Minimal (0–13); Mild (14–19); Moderate (20–28); and Severe (29–63) (Beck et al.).

The BDI-II has been found to have excellent internal consistency and test-retest reliability with a diverse range of samples and within a Spanish-speaking population (Arnau, Meagher, Norris, & Bramson, 2001; Beck et al., 1996; Lasa, Ayuso-Mateos, Vázquez-Barquero, Díez-Manrique, & Dowrick, 2000; Steer, Rissmiller, & Beck, 2000). The BDI-II has demonstrated good convergent validity with other measures of depression among clinical and nonclinical adult samples (Beck, Steer, & Garbin, 1988).

Factor analysis has established two-factors for the BDI-II. The first is somatic-affective and includes 13 items (sadness, loss of pleasure, agitation, loss of interest, indecisiveness, loss of energy, changes in sleep patterns, irritability, changes in appetite, concentration difficulty, crying, fatigue, loss of interest in sex). The second is cognitive and includes 8 items (pessimism, past failure, guilt feelings, punishment feelings, self-dislike, self-criticalness, suicidal ideation, worthlessness). The two subscales were moderately correlated at $r = 0.57$, suggesting that the physical and psychological aspects of depression are not entirely distinct, but closely related (Steer, Ball, Ranieri, & Beck, 1999).

Cronbach's alpha was calculated at $\alpha = 0.89$, which indicates a high level of internal consistency for the BDI-II scale with our specific sample.

Procedure

A cross-sectional survey design was employed and administered during May 2012 to a non-probabilistic convenient sample of students in Bogotá, Colombia. An email invitation was sent to the university community ($N = 3,684$) to take part in the research. Participants completed online information on demographics,

the BDI-II, and information on associated risk factors for depression. After one month we received a total of 295 responses, representing a response rate of 8%. Ethical approval for the study was received from the appropriate University Ethics Committee. Informed consent was obtained from all participants in the study.

Data Analysis

The analyses included all completed questionnaires ($N = 254$). Descriptive analyses were performed to investigate the distribution of our data. Thereafter scores were classified according to their level of severity (Beck et al., 1996). Descriptive statistics were employed to report demographic characteristics and risk factors within the sample.

Pearson Chi-square was employed to establish any associations between different variables, demographic and risk factors and severity of depression within the entire sample. Thereafter we used Pearson Chi-Square to calculate any significant difference on demographic and risk variables between the two groups, those depressed ($n = 92$) and those not depressed ($n = 162$). Lastly, any variables that reached significance for the between groups analysis we tested for significance regarding level of depression severity within the depressed group.

Odds Ratio and their 95% confidence interval (95% CI) were computed through a logistic regression model developed for each independent variable (demographic and risk factor variables x depressed or not depressed). The goodness of fit of the model was checked by the Hosmer and Lemeshow test (2000).

Pearson Chi-Square was employed to investigate any differences between men and women and their reports of severity for each of the BDI-II items. This was done for the entire sample ($N = 254$) and for the depressed group ($n = 92$).

The two-factor structure established for the BDI-II was applied to the entire sample and using t -tests the mean item score for the somatic-affective was compared to the mean of the cognitive items to determine which of the two factors predominated in the sample. We further applied this two-factor structure to the depressed group ($n = 92$).

Results

Descriptive Statistics

The mean BDI-II score was 12.11 ($SD = 9.38$; Range: 0–41). Frequency of severity of BDI-II scores was: Minimal (63.8%, $n = 162$); Mild (18.1%, $n = 46$); Moderate (10.2%, $n = 26$); and Severe (7.9%, $n = 20$). Point-prevalence of current depressive symptoms (BDI-II total score ≥ 14) was 36.2%, and significantly greater for women 47.3% than men 21.3%, $\chi^2(3; N = 254) = 18.69, p < .001$.

Risk Factors and Depression Severity

An analysis of the different risk factors and their relationship to severity of depression in the sample revealed that no differences were found between those

who were working and severity of depression, $\chi^2(3, N = 254) = 4.27, p > .05$. Similarly no significant differences were found with depression levels and marital status (partnered, married, separated, divorced, single, other), $\chi^2(15, N = 254) = 5.45, p > .05$. No significant association was established between BDI-II severity and age ($\chi^2(84, N = 243) = 93.56, p > .05$), with faculty/ department ($\chi^2(18, N = 249) = 20.57, p > .05$), or year of study ($\chi^2(12, N = 251) = 10.18, p > .05$).

A key risk factor in depression is whether someone has been previously diagnosed with depression. In the current sample, 10.6% ($n = 27$) reported a previous diagnosis and in comparison to those without a previous diagnosis levels of depression severity were significantly greater, $\chi^2(3, N = 254) = 18.68, p < .001$. Another risk factor identified in the literature showed significantly greater levels of depression severity for those with sleep problems, $\chi^2(3, N = 254) = 39.21, p < .001$, irrespective of the different types of sleep problems (insomnia, waking easily, or other).

A risk factor for depression often identified in the literature is a recent loss (immediate family, extended family, partner, financial, other), but in the current sample it was not significantly associated with depression severity, $\chi^2(3, N = 254) = 5.59, p > .05$. Participants who reported having difficulties in different areas of their lives (work, financial, partner, family, or other) showed a significant association with depression severity, $\chi^2(12, N = 212) = 22.84, p < .05$.

Risk factors regarding suicidal intent ($\chi^2(3, N = 254) = 9.64, p < .05$) and ideation ($\chi^2(3, N = 254) = 43.10, p < .001$) were both significant for depression severity in the current sample. Participants who reported that someone close to them had completed suicide (family member, friend, other) was not an item significant for depression severity, $\chi^2(3, N = 254) = 3.90, p > .05$. Participants who reported having someone in their family who was already depressed was significantly associated with depression severity in the current sample, $\chi^2(15, N = 254) = 27.80, p < .05$.

Lastly, participants evaluation of their alcohol consumption (once a week, twice a week, three times a week, everyday), $\chi^2(6, N = 84) = 14.57, p < .05$ was significant but participants self-report of family members being alcoholic $\chi^2(3, N = 254) = 4.63, p > .05$ was not significant regarding depression severity.

Risk Factors: Depressed vs. Not Depressed Group

We continued our analysis between the groups, those depressed ($n = 92$) and those not depressed ($n = 162$). Characteristics of participants, risk factors, and comparisons of those considered depressed or not, including Odds Ratios and their associated confidence intervals for factors associated with probable clinical depression can be found in Table 1. Between the groups there was significantly greater numbers of women in the depressed group compared to men, $\chi^2(1, N = 254) = 18.11, p < .001$. Faculty/department was not significant but a close to

TABLE 1. Risk Factors for Depression in Students from the City of Bogotá (N = 254)

Variable	N (%)	% with depression n = 92	% without depression n = 162	χ^2	O.R.	Z	p	95 C.I.
Gender				.000	.302	.438	.000	.172, .531
Women	146 (57.5)	75.00	48.00					
Men	108 (42.5)	25.00	52.00					
Age				.579	1.17	.588	.443	.782, 1.75
18–24	166 (65.4)	69.30	67.70					
25–35	58 (22.8)	25.00	23.20					
36–46	16 (6.3)	7.09	5.68					
46–52	3 (1.2)	1.93	0.00					
Faculty/ Department (n = 249)				.053	1.163	5.640	.018	1.03, 1.32
Veterinary Science	10 (3.9)	6.60	2.51					
Fine Arts	31 (12.2)	12.20	12.50					
Health Sciences	71 (28.0)	32.20	46.60					
Social Sciences	42 (16.5)	22.20	13.80					
Education	8 (3.1)	1.10	4.40					
Economics/ Administra- tion	36 (14.2)	13.30	26.60					
Engineering	51 (20.1)	12.20	25.10					
Year of study				.995	1.028	.084	.772	.855, 1.24
Year 1	113 (44.5)	76.10	123.90					
Year 2	38 (15)	72.20	127.90					
Year 3	45 (17.8)	71.00	128.80					
Year 4	27 (10.6)	74.00	126.10					
Year 5	28 (11)	64.20	135.70					
Working				.153	.682	2.031	.154	.403, 1.16
Yes	106 (41.7)	35.80	45.00					
No	148 (58.3)	64.10	54.90					
Marital status				.925	.955	.429	.513	.832, 1.09
Partnered	76 (29.9)	28.60	30.80					
Married	27 (10.6)	9.70	11.10					
Separated	5 (2.0)	1.08	2.46					
Divorced	4 (1.6)	2.17	1.23					
Single	136 (53.5)	56.50	51.80					
Other	6 (2.4)	1.23	2.46					
Previous depression diagnosis				.000	5.010	13.127	.000	2.095, 11.98
Yes	27 (10.6)	20.60	4.93					
No	227 (89.4)	82.60	95.60					
Sleep problems				.000	4.795	27.493	.000	2.67, 8.66
Yes	70 (27.6)	47.80	16.00					
No	184 (72.4)	52.10	83.90					

(Continued on next page)

TABLE 1. Risk Factors for Depression in Students from the City of Bogotá (N = 254) (Continued)

Variable	N (%)	% with depression n = 92	% without depression n = 162	χ^2	O.R.	Z	p	95 C.I.
Recent loss				.039	1.934	4.197	.040	1.03, 3.64
Yes	49 (19.3)	26.00	15.40					
No	205 (80.7)	73.90	84.50					
Difficulties in the areas of life				.375	1.018	.0200	.887	.799, 1.29
Work	18 (8.5)	12.00	5.78					
Financial	58 (27.4)	21.90	31.40					
Partner	56 (26.4)	27.40	25.60					
Family	61 (28.8)	29.60	28.90					
Suicide intent				.005	3.200	7.424	.006	1.39, 7.39
Yes	26 (10.2)	17.30	6.17					
No	228 (89.8)	82.60	93.80					
Suicidal ideation				.000	5.555	35.471	.000	3.16, 9.77
Yes	87 (34.3)	58.60	20.30					
No	167 (65.7)	43.30	79.60					
Anyone close to you completed suicide				.074	2.057	3.099	.078	.922, 4.59
Yes	27 (10.6)	10.80	8.02					
No	227 (89.4)	84.70	91.90					
History of depression in your family				.002	1.279	9.174	.002	1.09, 1.50
Mother	29 (11.4)	17.30	8.02					
Brother/Sisters	16 (6.3)	7.60	5.55					
Other family	50 (19.7)	28.20	14.80					
Do you consume alcohol				.463	1.308	.536	.464	.638, 2.68
Yes	36 (14.2)	16.30	12.40					
No	218 (85.8)	83.60	87.00					
Evaluate your alcohol consumption				.418	.525	.986	.321	.148, 1.87
Once a week	76 (29.9)	33.33	92.30					
Twice a week	7 (2.8)	10.70	7.69					
Three times a week	1 (0.4)	3.57	0.00					
Every day	0 (0.0)	0.00	0.00					
Is a member of your family alcoholic				.047	1.828	3.897	.048	1.00, 3.33
Yes	57 (22.4)	29.30	18.50					
No	197 (77.6)	70.60	81.40					

significant trend was observed for participants in the health sciences faculty/department ($p = .053$) for greater numbers depressed.

An analysis of the different risk factors and their relationship to whether one was depressed or not revealed that no differences were found between those who were working or not working, $\chi^2(1, N = 254) = 2.03, p > .05$, marital status (partnered, married, separated, divorced, single, other), $\chi^2(5, N = 254) = 1.38, p > .05$, or those who reported current difficulties in different areas of their lives (work, financial, partner, family, other), $\chi^2(4, N = 212) = 4.23, p > .05$.

Of those in the depressed group compared to the non-depressed group the item whether they had received a diagnosis of depression in the past was significant, $\chi^2(1, N = 254) = 15.25, p < .001$, similarly significant for those with sleep problems, $\chi^2(1, N = 254) = 29.67, p < .001$, irrespective of the type of sleep problem reported (insomnia, waking easily, other). A recent loss, another risk factor, proved significant for the depressed group, $\chi^2(1, N = 254) = 4.27, p < .05$, irrespective of the type of loss (immediate family, extended family, partner, financial, other). Suicidal intent ($\chi^2(1, N = 254) = 8.03, p < .05$) and ideation ($\chi^2(1, N = 254) = 38.27, p < .001$) were both significant risk factors for the depressed group. In addition, a nonsignificant trend was shown for those in the depressed group who had someone close to them complete suicide ($p = .074$), irrespective of whether it was a family member, friend, or other. Participants with a history of depression in their family (mothers, brothers, sisters, or other family) was a significant risk factor for those in the depressed group, $\chi^2(5, N = 254) = 18.71, p < .05$. Alcohol consumption (once a week, twice a week, three times a week, everyday) by participants was not significantly associated with depression ($\chi^2(1, N = 254) = .539, p > .05$), but if there was a member of the family alcoholic (father, brothers, sisters, other family) that was significant, $\chi^2(1, N = 254) = 3.95, p < .05$.

Of the items that were established as significant factors for depression in the between groups (depressed and not-depressed) analysis (see Table 1), only one item presented as significantly associated with depression severity within the depressed group and that was sleep problems, $\chi^2(2, N = 92) = 7.63, p = .022$.

Calculation of odds ratio and their associated confidence intervals for the depressed group demonstrated that for a number of risk factors exposure related to depression outcome (see Table 1). High probabilities were demonstrated particularly for students of health sciences; gender; previous depression diagnosis; sleep problems; suicide intent and ideation; any recent loss; history of depression and (or) alcoholism in the family; and each of these were significant in the sample.

Gender and Depression Severity

A comparison between women and men on each of the BDI-II items revealed that there were significantly greater numbers of women reporting greater severity on items: (1) Sadness, (5) Guilt feelings, (7) Self-dislike, (10) Crying, (12) Loss of pleasure, (13) Indecisiveness, (14) Worthlessness, (17) Irritability, (18) Changes

in appetite, and (21) Loss of interest in sex. A nonsignificant trend $\leq .10$ was shown for (9) Suicidal thoughts or wishes and (20) Tiredness or fatigue. Within the depressed group a larger number of women reported greater severity on items (1) Sadness, (10) Crying, and (13) Indecisiveness. Also a nonsignificant trend $\leq .10$ for item (11) Irritability was reported (see Table 2 for the reported p -values).

Somatic-Affective vs. Cognitive Factor for Depression

The mean scores on the two-factor structure revealed that the somatic-affective factor was significantly greater in the sample ($M = 8.55$, $SD = 6.24$) compared to the cognitive factor ($M = 3.56$, $SD = 3.84$), $t(253) = 17.98$, $p < .001$. In addition, we applied the two-factor structure to the depressed group ($n = 92$) and revealed that the somatic-affective factor was significantly greater in the sample ($M = 15.09$, $SD = 4.98$) compared to the cognitive factor ($M = 7.20$, $SD = 4.04$), $t(91) = 14.79$, $p < .001$

Discussion

The study found a point-prevalence of depression of 36.2%, and there were significant differences among women 47.3% and men 21.3%, suggesting high levels of clinical depression. The finding is not unusual and other Colombian studies with a student population have found similarly high prevalence rates, between 30% and 50% (Amézquita et al., 2003; Arrivillaga et al., 2004), which contrast the prevalence (6.8%–10%) normally found in the general population in Colombia (Gómez-Restrepo et al., 2004).

Risk Factors and Depression Severity

Our examination of a number of important risk factors revealed that if participants had a previous diagnosis of depression, sleep problems (insomnia, easily woken, other), suicidal intent or ideation, a family history of depression (mother, father, brothers or sisters, other), personal alcohol consumption (once a week, twice a week, three times a week, everyday), and, or were experiencing difficulties in different areas of their life (family, partners, work, or financial difficulties), each related to depression severity. The influence of risk factors is consistent with the literature on depression in students in Colombia (Amézquita et al., 2003; Arrivillaga et al., 2004) and in the general Colombian population (Campo & Cassiani, 2008; Rueda, Díaz, & Rueda, 2008) which reflects reports from higher-income countries (Boland & Keller, 2002; Mueller et al., 1999). On the contrary, and for the sample in general, age, marital status (partnered, married, separated, divorced, single, other), whether one was working or not, and having experienced a recent loss were not significantly associated with depression severity. In other studies these have been shown to be determinants of depression severity (Amézquita et al., 2003; Arrivillaga et al., 2004).

TABLE 2. Gender Differences on BDI Items Within the Sample in Total ($n = 254$) and the Depressed Group ($n = 92$)

BDI Item	Men ($n = 108$)		Women ($n = 146$)		Comparison of responses (Chi Square)		Depressed men ($n = 23$)		Depressed women ($n = 69$)		Comparison of responses (Chi Square)	
	Men	Women	Men	Women	Men	Women	Men	Women	Men	Women	Men	Women
1. Sadness	17	60	$\chi^2(3; N = 254) = 24.00, p = .000$		14	39	$\chi^2(3; N = 92) = 6.45, p = .091$					
2. Pessimism	25	43	$\chi^2(3; N = 254) = 5.56, p = .135$		19	47	$\chi^2(3; N = 92) = 2.57, p = .461$					
3. Past failure	29	53	$\chi^2(2; N = 254) = 2.57, p = .276$		15	53	$\chi^2(3; N = 92) = 8.61, p = .035$					
4. Loss of pleasure	35	62	$\chi^2(3; N = 254) = 9.33, p = .025$		18	51	$\chi^2(3; N = 92) = .730, p = .866$					
5. Guilty feelings	35	85	$\chi^2(3; N = 254) = 18.98, p = .000$		17	55	$\chi^2(3; N = 92) = 5.51, p = .138$					
6. Punishment feelings	22	34	$\chi^2(3; N = 254) = .317, p = .957$		13	31	$\chi^2(3; N = 92) = 2.73, p = .435$					
7. Self-dislike	34	62	$\chi^2(3; N = 254) = 7.88, p = .049$		18	49	$\chi^2(3; N = 92) = 3.03, p = .387$					
8. Self-criticalness	60	84	$\chi^2(3; N = 254) = 1.64, p = .650$		21	57	$\chi^2(3; N = 92) = 1.85, p = .602$					
9. Suicidal thoughts or wishes	14	36	$\chi^2(3; N = 254) = 7.59, p = .055$		12	28	$\chi^2(3; N = 92) = 3.67, p = .299$					
10. Crying	14	74	$\chi^2(3; N = 254) = 42.59, p = .000$		9	53	$\chi^2(3; N = 92) = 15.21, p = .002$					
11. Agitation	35	54	$\chi^2(3; N = 254) = 3.43, p = .330$		14	33	$\chi^2(3; N = 92) = 5.94, p = .114$					

12. Loss of interest	49	79	$\chi^2(3; N = 254) = 3.28, p = .350$	15	42	$\chi^2(2; N = 92) = .829, p = .661$
13. Indecisiveness	33	68	$\chi^2(3; N = 254) = 9.66, p = .022$	18	51	$\chi^2(3; N = 92) = .730, p = .866$
14. Worthlessness	17	48	$\chi^2(3; N = 254) = 12.35, p = .006$	12	40	$\chi^2(3; N = 92) = 4.27, p = .234$
15. Loss of energy	63	98	$\chi^2(3; N = 254) = 3.08, p = .378$	20	59	$\chi^2(3; N = 92) = 2.25, p = .521$
16. Changes in sleeping pattern	69	107	$\chi^2(3; N = 254) = 3.67, p = .299$	19	60	$\chi^2(3; N = 92) = 1.46, p = .690$
17. Irritability	35	74	$\chi^2(3; N = 254) = 11.07, p = .011$	18	51	$\chi^2(3; N = 92) = .905, p = .824$
18. Changes in appetite	53	96	$\chi^2(3; N = 254) = 15.88, p = .001$	19	57	$\chi^2(3; N = 92) = 4.50, p = .212$
19. Concentration difficulty	58	92	$\chi^2(3; N = 254) = 4.63, p = .201$	20	60	$\chi^2(3; N = 92) = 1.07, p = .782$
20. Tiredness/fatigue	50	85	$\chi^2(3; N = 254) = 6.53, p = .088$	17	54	$\chi^2(3; N = 92) = 2.33, p = .505$
21. Loss of interest in sex	20	48	$\chi^2(3; N = 254) = 8.56, p = .036$	7	36	$\chi^2(3; N = 92) = 4.10, p = .250$

Risk Factors: Depressed vs. Not Depressed Group

For the depressed group, factors including age, year of study, whether one was working or not, marital status, difficulties in different areas of life, and alcohol consumption were not significant for depression. This result contradicts some of the literature available that have reported significant associations between such variables and depression (Amézquita et al., 2003; Arrivillaga et al., 2004; Boland & Keller, 2002; Miranda et al., 2000; Mueller et al., 1994; Mueller et al., 1999; Rueda et al., 2008).

For those categorized as depressed, Odds Ratios demonstrated a large number of risk factors significantly related (or as nonsignificant trends) to depression within the sample. The variables included, being a woman; a factor reported in most studies, or a student of health sciences; other studies have highlighted the greater incidence of depression in medical students (Osornio & Palomino, 2009). Having a previous diagnosis of depression, experiencing sleep problems, having experienced a recent loss, suicidal intent and (or) ideation, a family history of depression and (or) alcoholism all have been reported as significant risk factors and are in line with other national and international studies (Amézquita et al., 2003; Arrivillaga et al., 2004; Boland & Keller, 2002; Mueller et al., 1999). Several risk factors identified in the current study have previously been shown to be positively associated with depressive symptoms in a Colombian sample, including being a woman (OR = 2.73), suicidal intent (OR = 3.67), sleep problems (OR = 3.14), and any recent loss (OR = 1.77) (Rueda et al., 2008).

Gender

Concurrent with other local and international studies of students, and indeed the general population, this study has established the significant difference in the prevalence of depression for men (21.3%) and women (47.3%). Analysis of differences between men and women on each of the items for the BDI-II revealed that more women showed greater severity on several items (see Table 1). The majority of these items are associated with the somatic-affective factor of the BDI-II. For the depressed group, three items, and one non-significant trend were associated with greater severity as reported by women, and all items are of the somatic-affective factor (Beck et al., 1988). Perhaps it reflects the greater somatic presentation of depressive symptoms in Latin American populations (Yusim et al., 2009). The results of this study coincide with the general literature regarding the greater incidence of depression for women than men, worldwide (Ayuso-Mateos et al., 2001; Bebbington et al., 1998; Gómez-Restrepo et al., 2004; Richards, 2011; Üstün et al., 2004).

History of Depression

A previous episode of depression was significantly associated with depression in the group. This is consistent with the literature on recurrence after recovery and relapses during a time of recovery. Epidemiological studies have reported that

for many with depression, recurrence after recovery is the rule (Mueller et al., 1999). The possibility of future episodes of depression is as high as 30%, and this rate seems to increase with subsequent episodes (Richards, 2011). Similarly, several studies have reported relapse rates of between 30%–50% (Judd et al., 2000; Solomon et al., 2008). Factors that increase vulnerability for relapse and recurrence include a history of depression, psychiatric illness, the quality of any recovery from a previous episode, being a woman, a history of family depression, or indeed any recent loss (Richards, 2011; Silva, Komura Hoga, & Costa Stefanelli, 2004).

Sleep Problems

A point of further note in the current sample was that sleep problems manifested significantly for the sample in total and for the depressed group. Indeed, of the various risk factors that demonstrated significance, sleep problems was the only factor to show significance in the between groups (depressed \times not depressed) analysis, and was related to severity for the depressed group. We could not compare this with other studies of students from Latin America as the factor was not investigated, but it compares well to the results from a population sample in another city of Colombia where sleep problems were significantly related to depression (Rueda et al., 2008). Perhaps in the current sample the point concerns the greater presentation of somatic than psychological symptoms which, it has been argued, are more common presentations of depression for non-Western populations (Yusim et al., 2009).

Any Recent Loss

The data showed that for the depressed group that any recent loss (immediate family, extended family, partner, financial, other) was significantly related to depression in the sample. A recent loss can be understood as a stressful life experience, or the accumulation of a variety of such experiences, which are factors known to precipitate depression in individuals (Beck, 1970).

Suicide

Suicide attempts and suicidal ideation have continually been presented as risk factors in depression. The association has been reported in several studies from Colombia (Amézquita et al., 2003; Gómez-Restrepo et al., 2002; Micin & Bagladi, 2011). In our sample, suicidal intent was 10.2% ($n = 26$) and suicidal ideation was 34.3% ($n = 87$). Within the depressed group 17.4% ($n = 17$) reported suicidal intent and 58.7% ($n = 54$) reported suicidal ideation, both of which were significantly related to depression severity for the sample in total and further were significant as risk factors associated with depression in the depressed group. The results support the literature as to the importance of such factors for depression, particularly for university students (Furr, Westefeld, McConnell, & Jenkins, 2001).

Family History

Family history can play a significant role in depression; many different factors can contribute, especially if there is a history of depression or alcoholism in the family. In the current sample both of these factors were significantly associated with depression. These factors in particular have been shown to be strong predictors of depression in families and the evidence for their environmental and genetic basis supports this relationship (Lesch, 2004). For the entire sample, personal reports on alcohol consumption were related to depression severity. However for the depressed group, it was not significantly associated with depression. The data collection was based on self-report and perhaps personal consumption was not so accurately reported. Anecdotally, personal alcohol consumption by students is considered high, especially for men. One recent Mexican study found higher levels of depression in university students who used alcohol compared to those who did not, and prevalence of consumption was higher for men than women (González-González et al., 2012).

Somatic-Affective vs. Cognitive Factors for Depression

We carried out an analysis of the two factor structure based on the original two-factor items established by Steer et al. (1999). Since then different items have loaded for the two-factors in a study with students (Storch, Roberti, & Roth, 2004) and in a study of the Spanish language version of the BDI-II where self-criticalness did not load saliently and was excluded (Penley, Wiebe, & Nwosu, 2003). We found that the somatic-affective factor dominated the sample. In addition, no significant differences were found in the analysis using the original and a second analysis of means where we excluded self-criticalness (Storch et al., 2004). Somatic presentation of symptoms has been found to be more prevalent in Latin American cultures than in Western cultures (Muñoz et al., 2005; Yusim et al., 2010). Patients can often report symptoms such as headache, constipation, muscle pain, loss of energy, among others in their presentation of depression. Indeed, some previous studies have suggested that those in non-Western countries are more likely to report somatic symptoms, and deny psychological symptoms, compared to those in Western world countries (Simon, VonKorff, Piccinelli, Fullerton, & Ormel, 1999).

The results of this particular analysis have to be interpreted with some caution. Given the greater number of factors loaded for the somatic-affective compared to the cognitive meant that it would naturally yield a greater mean. Also, while there is a large number, there is a distinct lack of consistency in the studies that have investigated the factor structure of the BDI-II (Brown, Kaplan, & Jason, 2012). A self-report measure alone is not sufficient to interpret the significance of one group of symptoms over another, and it is suggested that the BDI-II be undertaken as one part of a more elaborate psycho-diagnostic evaluation (Brown et al., 2012).

Other Risk Factors

Several studies in Colombia have investigated other risk factors, additional to the ones we included in the present study and have shown them to be significantly related to depression, including, socio-economic status and level of education (Campo & Cassiani, 2008; Gaviria, Rodríguez, & Álvarez, 2000), a recent medical illness, and parents separating (Amézquita et al., 2003; Arrivillaga et al., 2004). Other factors associated with students have included, difficult relations with other students, difficult relations with teachers/lecturers, living conditions, and academic demands (Amézquita et al., 2003). Future research is welcome to investigate a broader range of factors that could be playing a role in student depression.

Limitations

A number of limitations can be noted. To begin with, the current study used a convenient, non-epidemiological sample and the numbers were relatively small. Self-report was used and clinical diagnosis of major depression or other clinical details were not included. Participants completed the questionnaire online. This may have overinflated or indeed underinflated the results; although research into the administration of standard assessment measures for depression in online and paper-and-pencil formats (including the BDI-II) have shown equivalent results (Holländare, Andersson, & Engström, 2010). Caution is advised in generalizing these results to other students, although given that the results are similar to other studies of student samples there is the likelihood that the results could be representative of students in Bogotá.

Conclusion

Our results demonstrate a high point-prevalence in the sample investigated and a significant difference in prevalence rates for women compared to men. Several risk factors have been shown to be related to probable clinical depression in the sample, and these include age, sleep problems, a previous diagnosis of depression, any recent loss, suicidal intent and (or) ideation, a family history of depression or alcoholism, and being a woman. The somatic-affective factor was greater compared to the cognitive factor. This may be important in the current sample especially given the noted prevalence for somatic-affective presentation of depression in Latin American populations. The result is confounded by the greater numbers in the somatic-affective factor and an historical inconsistency in establishing the factor structure for the BDI-II.

Our research shows that prevalence rates reported resemble those reported in other studies of students not only in Latin America but from other continents. Our results highlight the extensive clinical need in a context where the majority of affected individuals has no medical diagnosis nor seeks treatment (Andrews et al., 2000). In addition, the majority (85–95%) of individuals with mental health problems in Colombia does not access or cannot access the services they require

(Ministerio de Protección Social, 2003). Although speculative, the socio-economic context of the current sample and educational levels most likely introduce further confounding variables.

Our findings contribute to understanding the worldwide ubiquity of depression and the need for prevention measures, early identification and treatment. The results add further to the small amount of literature available for Colombia regarding the prevalence of depression and uniquely it is the first to examine the prevalence of depression in students in Bogotá.

AUTHOR NOTES

Derek Richards works in development and research in online mental health interventions, particularly low-intensity online delivered treatments for depression and anxiety. He has pioneered such interventions at Trinity College Dublin, Ireland. He has presented and published nationally and internationally in the area: www.derekrichards.info. **Alicia Salamanca Sanabria** is a researcher in online mental health interventions and lecturer at the Universidad Antonio Nariño, Bogotá. She is also involved in the design of low-intensity mental health interventions for anxiety and substance abuse in college students.

REFERENCES

- American Psychiatric Association [APA]. (2000). *Diagnostic and statistical manual of mental disorders (DSM-IV-TR)* (4th ed.). Washington, DC: Author.
- Amézquita, M. E., González, R. E., & Zuluaga, D. (2003). Prevalencia de la depresión, ansiedad y comportamiento suicida en la población estudiantil de pregrado de la Universidad de Caldas [Prevalence of Depression, Anxiety and Suicidal Behavior in the Undergraduate Student Population of the University of Caldas]. *Revista Colombiana de Psiquiatría*, *32*(4), 341–356.
- Andrews, G., Sanderson, K., Slade, T., & Issakidis, C. (2000). Why does the burden of disease persist? Relating the burden of anxiety and depression to effectiveness of treatment. *Bulletin World Health Organisation*. Retrieved from [http://www.who.int/bulletin/archives/78\(4\)446.pdf](http://www.who.int/bulletin/archives/78(4)446.pdf)
- Arnau, R. C., Meagher, M. W., Norris, M. P., & Bramson, R. (2001). Psychometric evaluation of the Beck Depression Inventory-II with primary care medical patients. *Health Psychology*, *20*, 112–119. doi: 10.1037/0278-6133.20.2.112
- Arrivillaga, M., Cortés, C., Goicochea, V. L., & Lozano, T. M. (2004). Caracterización de la depresión en jóvenes universitarios [Characterization of depression in university students]. *Universitas Psychologica*, *3*(1), 17–26.
- Ayuso-Mateos, J. L., Vazquez-Barquero, J. L., Dowrick, C., Lehtinen, V., Dalgard, O. S., Casey, P., . . . Wilkinson, G. (2001). Depressive disorders in Europe: Prevalence figures from the ODIN study. *British Journal of Psychiatry*, *179*(4), 308–316. doi: 10.1192/bjp.179.4.308
- Bebbington, P. E., Dunn, G., Jenkins, R., Lewis, G., Brugha, T., Farrell, M., & Meltzer, H. (1998). The influence of age and sex on the prevalence of depressive conditions: Report from the National Survey of Psychiatric Morbidity. *Psychological Medicine*, *28*(01), 9–19. doi: 10.1017/S0033291797006077

- Beck, A. T. (1970). *Depression: Causes and treatment*. Philadelphia, PA: University of Pennsylvania Press.
- Beck, A. T., Steer, R. A., & Brown, G. K. (1996). *Manual for the BDI-II*. San Antonio, TX: Psychological Corporation.
- Beck, A. T., Steer, R. A., & Garbin, M. G. (1988). Psychometric properties of the Beck Depression Inventory: Twenty-five years of evaluation. *Clinical Psychology Review*, 8(1), 77–100. doi: 10.1016/0272-7358(88)90050-5
- Boland, R. J., & Keller, M. B. (2002). Course and outcome of depression. In I. H. Gotlib & C. L. Hammen (Eds.), *Handbook of depression* (pp. 43–57). New York, NY: Guilford.
- Brown, M., Kaplan, C., & Jason, L. (2012). Factor analysis of the Beck Depression Inventory–II with patients with chronic fatigue syndrome. *Journal of Health Psychology*, 17(6), 799–808. doi: 10.1177/1359105311424470
- Campo, A., & Cassiani, C. A. (2008). Trastornos mentales más frecuentes: Prevalencia y algunos factores sociodemográficos asociados [Most Frequent Mental Disorders: Prevalence and Associated Sociodemographic Factors]. *Revista Colombiana de Psiquiatría*, 37(4), 598–613.
- Cova, F., Alvial, W., Aro, M., Bonifetti, A., Hernández, M., & Rodríguez, C. (2007). Problemas de salud mental en estudiantes de la Universidad de Concepción [Mental Health Problems in Students at The University of Concepcion]. *Terapia Psicológica*, 25, 105–112. doi: 10.4067/S0718-48082007000200001
- Craighead, W. E., Sheets, E. S., Brosse, A. L., & Ilardi, S. S. (2007). Psychosocial treatments for major depressive disorder. In P. E. Nathan & J. M. Gorman. (Eds.), *A guide to treatments that work* (3rd ed.). New York, NY: Oxford University Press.
- Cuijpers, P., & Schoevers, R. (2004). Increased mortality in depressive disorders: A review. *Current Psychiatry Reports*, 6(6), 430–437. doi: 10.1007/s11920-004-0007-y
- Dyson, R., & Renk, K. (2006). Freshmen adaptation to university life: Depressive symptoms, stress, and coping. *Journal of Clinical Psychology*, 62, 1231–1244. doi: 10.1002/jclp.20295
- Falla, P., & Alfonso, S. (2006). Prevalencia de sintomatología depresiva en una población estudiantil de la facultad de medicina de la Universidad Militar Nueva Granada, Bogotá, Colombia [Prevalence of Depressive Symptoms in a Student Population in the Faculty of Medicine at the Military University of New Granada, Bogotá, Colombia]. *Revista Facultad de Medicina de la Universidad Nacional de Colombia*, 54(2), 76–87.
- Furr, S. R., Westefeld, J. S., McConnell, G. N., & Jenkins, J. M. (2001). Suicide and depression among college students: A decade later. *Professional Psychology: Research and Practice*, 32(1), 97–100. doi: 10.1037/0735-7028.32.1.97
- Gaviria, S., Rodríguez, M. d. I. Á., & Álvarez, T. (2000). Calidad de la relación familiar y depresión en estudiantes de medicina de Medellín, Colombia [Quality of Family Relations and Depression in Medical Students from Medellín, Colombia]. *Revista Chilena de Neuro-Psiquiatría*, 40(1), 41–46. doi: 10.4067/S0717-92272002000100005
- Gómez-Restrepo, C., Bohórquez, A., Pinto-Masis, D., Gil Laverde, J. F. A., Rondón-Sepúlveda, M., & Díaz-Granados, N. (2004). Prevalencia de depresión y factores asociados con ella en la población colombiana [Prevalence of Depression and Associated Factors in the Colombian Population]. *Revista Panamericana de Salud Pública*, 16(6), 378–386. doi: 10.1590/S1020-49892004001200003
- Gómez-Restrepo, C., Malagón, N., Bohórquez, A., Díazgranados, N., García, M. B., & Fernández, C. (2002). Factores asociados al intento de suicidio en la población Colombiana [Factors Associated with Attempted Suicide in the Colombian Population]. *Revista Colombiana de Psiquiatría*, 31, 271–286.
- González-González, A., Juárez García, F., Torres, C. S., González-Forteza, C., Tapia, A. J., Medina-Mora, M. E., & Mejía, H. F.-V. (2012). Depresión y consumo de alcohol y

- tabaco en estudiantes de bachillerato y licenciatura [Depression and the Consumption of Alcohol and Tobacco in Undergraduate and Graduate Students]. *Salud Mental*. Retrieved 1 Jan, 2010, from http://www.scielo.org.mx/scielo.php?script=sci_arttext&pid=S0185-33252012000100008&lng=es
- Holländare, F., Andersson, G., & Engström, I. (2010). A comparison of psychometric properties between internet and paper versions of two depression instruments (BDI-II and MADRS-S) administered to clinic patients. *Journal of Medical Internet Research*, *12*(5), e49.
- Hosmer, D. W., & Lemeshow, S. (2000). *Applied Logistic Regression*, 2nd ed. New York: John Wiley and Sons.
- Hunt, J., & Eisenberg, D. (2010). Mental health problems and help-seeking behavior among college students. *Journal of Adolescent Health*, *46*(1), 3–10. doi: 10.1016/j.jadohealth.2009.08.008
- Judd, L. L., Paulus, M. J., Schettler, P. J., Akiskal, H. S., Endicott, J., Leon, A. C., . . . Keller, M. B. (2000). Does incomplete recovery from first lifetime major depressive episode herald a chronic course of illness? *American Journal of Psychiatry*, *157*(9), 1501–1504. doi: 10.1176/appi.ajp.157.9.1501
- Kessler, R. C., Berglund, P., Demler, O., Jin, R., Koretz, D., Merikangas, K. R., . . . Wang, P. S. (2003). The epidemiology of major depressive disorder: Results from the National Comorbidity Survey Replication (NCS-R). *Journal of the American Medical Association*, *289*(23), 3095–3105. doi: 10.1001/jama.289.23.3095
- Kohn, R., Levav, I., Caldas de Almedia, J. M., Vicente, B., Andrade, L., Caraveo-Anduaga, J. J., . . . Saraceno, B. (2005). Los trastornos mentales en América Latina y el Caribe: Asunto prioritario para la salud pública [Mental Disorders in Latin America and the Caribbean: A Subject of Priority for Public Health]. *Revista Panamericana de Salud Publica*, *18*(4-5), 229–240. doi: 10.1590/S1020-49892005000900002
- Kohn, R., Saxena, S., Levav, I., & Saraceno, B. (2004). The treatment gap in mental health care. *Bulletin of the World Health Organization*, *82*(11), 858–866. Retrieved 25 April, 2013, from <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC2623050/>
- Lasa, L., Ayuso-Mateos, J. L., Vázquez-Barquero, J. L., Diez-Manrique, F. J., & Dowrick, C. F. (2000). The use of the Beck Depression Inventory to screen for depression in the general population: A preliminary analysis. *Journal of Affective Disorders*, *57*(1–3), 261–265. doi: 10.1016/S0165-0327(99)00088-9
- Lesch, K. P. (2004). Gene–environment interaction and the genetics of depression. *Journal of Psychiatry & Neuroscience*, *29*(3), 174–184.
- Lopez, A. D., & Murray, C. J. L. (1998). The global burden of disease, 1990–2020. *Nature Medicine*, *4*, 1141–1143. doi: 10.1038/3218
- Mathers, C. D., & Loncar, D. (2006). Projections of global mortality and burden of disease from 2002 to 2030. *PLoS Med*, *3*(11), e442. doi: 10.1371/journal.pmed.0030442
- Micin, S., & Bagladi, V. (2011). Salud mental en estudiantes universitarios: Incidencia de psicopatología y antecedentes de conducta suicida en población que acude a un servicio de salud estudiantil [Mental Health in College Students: Prevalence of Psychopathology and History of Suicidal Behavior in a Population that Attend a Student Health Service]. *Terapia Psicológica*, *29*, 53–64. doi: 10.4067/S0718-48082011000100006
- Ministerio de Protección Social. (2003). *Informe sobre un panorama nacional de la salud y la enfermedad un trabajo en Colombia*. Bogotá, Colombia: Author.
- Miranda, C. A., Gutiérrez, J. C., Bernal, F., & Andres, C. (2000). Prevalencia de depresión en estudiantes de medicina de la Universidad del Valle [Prevalence of Depression in Medical Students at the University of the Valley]. *Revista Colombiana de Psiquiatría*, *29*(3), 251–260.

- Mohr, D. C., Ho, J., Duffecy, J., Baron, K. G., Lehman, K. A., Jin, L., & Reifler, D. (2010). Perceived barriers to psychological treatments and their relationship to depression. *Journal of Clinical Psychology, 66*(4), 394–409. doi: 10.1002/jclp.20659
- Mueller, T. I., Lavori, P. W., Keller, M. B., Swartz, A., Warshaw, M., Hasin, D., . . . Akiskal, H. (1994). Prognostic effect of the variable course of alcoholism on the 10-year course of depression. *American Journal of Psychiatry, 151*(5), 701–706.
- Mueller, T. I., Leon, A. C., Keller, M. B., Solomon, D. A., Endicott, J., Coryell, W., . . . Maser, J. D. (1999). Recurrence after recovery from major depressive disorder during 15 years of observational follow-up. *American Journal of Psychiatry, 156*(7), 1000–1006.
- Muñoz, R. A., McBride, M. E., Brnabic, A. J. M., López, C. J., Hetem, L. A. B., Secin, R., & Dueñas, H. J. (2005). Major depressive disorder in Latin America: The relationship between depression severity, painful somatic symptoms, and quality of life. *Journal of Affective Disorders, 86*(1), 93–98. doi: 10.1016/j.jad.2004.12.012
- Murray, C. J. L., & Lopez, A. D. (1996). *The global burden of disease*. Geneva: World Health Organization, Harvard School of Public Health, World Bank.
- Nogueira, L. A., Neto, R. F., & Macedo, P. C. M. (2004). The mental health of graduate students at the Federal University of Sao Paulo: A preliminary report. *Brazilian Journal of Medical and Biological Research, 37*(10), 1519–1524. doi: 10.1590/S0100-879x2004001000011
- Osornio, L., & Palomino, L. (2009). Depresión en estudiantes universitarios [Depression in University Students]. *Archivos en Medicina Familiar, 11*(1), 1–2.
- Penley, J. A., Wiebe, J. S., & Nwosu, A. (2003). Psychometric properties of the Spanish Beck Depression Inventory-II in a medical sample. *Psychological Assessment, 15*, 569–577. doi: 10.1037/1040-3590.15.4.569
- Rapaport, M. H., Clary, C., Fayyad, R., & Endicott, J. (2005). Quality-of-life impairment in depressive and anxiety disorders. *American Journal of Psychiatry, 162*(6), 1171–1178. doi: 10.1176/appi.ajp.162.6.1171
- Richards, D. (2011). Prevalence and clinical course of depression: A review. *Clinical Psychology Review, 31*(7), 1117–1125. doi: 10.1016/j.cpr.2011.07.004
- Royal College of Psychiatrists. (2003). *The mental health of students in higher education*. London, England: Author.
- Royal College of Psychiatrists. (2011). *The mental health of students in higher education* (pp. 97). London, England: Author.
- Rueda, M., Díaz, L. A., & Rueda, G. E. (2008). Prevalencia del trastorno depresivo mayor y factores asociados: un estudio poblacional en Bucaramanga (Colombia) [Prevalence of Major Depressive Disorder and Associated Factors: A Population Study in Bucaramanga (Colombia)]. *Revista Colombiana de Psiquiatría, 37*(2), 159–168.
- Secretaría de Cultura Recreación y Deportes. (2008). *Localidad Rafael Uribe Uribe: Ficha básica* [Rafael Uribe Uribe: Basic Overview]. Bogotá, Colombia: Author.
- Secretaría Distrital de Salud [District Secretary of Health]. (2008). Plan de salud del distrito capital 2008–2012 [Health Plan for the Capital District 2008–2012]. Bogotá, Colombia: Author.
- Silva, M. C., Komura Hoga, L. A., & Costa Stefanelli, M. (2004). La depresión incluida en la historia de la familia [Depression included in the family history. Text and Context]. *Texto y Contexto, 13*(004), 511–518.
- Simon, G. E., VonKorff, M., Piccinelli, M., Fullerton, C., & Ormel, J. (1999). An international study of the relation between somatic symptoms and depression. *New England Journal of Medicine, 341*(18), 1329–1335. doi: 10.1056/NEJM199910283411801
- Solomon, D. A., Leon, A. C., Coryell, W., Mueller, T. I., Posternak, M., Endicott, J., & Keller, M. B. (2008). Predicting recovery from episodes of major depression. *Journal of Affective Disorders, 107*(1), 285–291. doi: 10.1016/j.jad.2007.09.001

- Steer, R. A., Ball, R., Ranieri, W. F., & Beck, A. T. (1999). Dimensions of the Beck Depression Inventory-II in clinically depressed outpatients. *Journal of Clinical Psychology, 55*(1), 117–128. doi: 10.1002/(sici)1097-4679(199901)55:1<117::aid-jclp12>3.0.co;2-a
- Steer, R. A., Rissmiller, D. J., & Beck, A. T. (2000). Use of the Beck Depression Inventory-II with depressed geriatric inpatients. *Behaviour Research and Therapy, 38*(3), 311–318. doi: 10.1016/S0005-7967(99)00068-6
- Storch, E. A., Roberti, J. W., & Roth, D. A. (2004). Factor structure, concurrent validity, and internal consistency of the Beck Depression Inventory-Second Edition in a sample of college students. *Depression and Anxiety, 19*(3), 187–189. doi: 10.1002/da.20002
- Üstün, T. B., Ayuso-Mateos, J. L., Chatterji, S., Mathers, C., & Murray, C. J. L. (2004). Global burden of depressive disorders in the year 2000. *British Journal of Psychiatry, 184*(5), 386–392. doi: 10.1192/bjp.184.5.386
- WHO World Mental Health Survey Consortium. (2004). Prevalence, severity, and unmet need for treatment of mental disorders in the World Health Organization World Mental Health Surveys. *Journal of the American Medical Association, 291*(21), 2581–2590. doi: 10.1001/jama.291.21.2581
- Yusim, A., Anbarasan, D., Hall, B., Goetz, R., Neugebauer, R., & Ruiz, P. (2009). Somatic and cognitive domains of depression in an underserved region of Ecuador: Some cultural considerations. *World Psychiatry: Official Journal of the World Psychiatric Association (WPA), 8*(3), 178–180.
- Yusim, A., Anbarasan, D., Hall, B., Goetz, R., Neugebauer, R., Stewart, T., . . . Ruiz, P. (2010). Sociocultural domains of depression among indigenous populations in Latin America. *International Review of Psychiatry, 22*(4), 370–377. doi: 10.3109/09540261.2010.500870

Original manuscript received July 9, 2012

Final version accepted April 26, 2013