



## Prevalent Tendencies for Mental Disorders in Pakistan

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### A B S T R A C T

Psychological problems and mental disorders are visibly prevalent all around the globe. The current survey intended to analyze the latest situation of the prevailing variety of mental disorders in the country by involving 3,500 participants from 5 major cities. The sample of the study was sufficiently rich to represent Pakistanis based on gender, age, education, profession, and income. Data was gathered through interviews and a self-reported questionnaire. The study revealed that 27% of Pakistanis possess tendencies for different mental disorders. Depression and sleep-related problems are the most prevalent psychological problems in the country. Females, unmarried, people below 40 years of age, people with primary level of education, and people belonging to the upper-middle class possess significantly higher tendencies towards mental disorders as compared with their counterparts. The findings will be helpful for researchers, mental health practitioners, and other stakeholders in assessing the state of mental health in the country.

### Las tendencias prevalentes en trastornos mentales en Pakistán

### R E S U M E N

Los problemas psicológicos y los trastornos mentales son visiblemente prevalentes en todo el mundo. El estudio actual pretende analizar la situación más reciente de la variedad predominante de los trastornos mentales en el país con la participación de 3,500 participantes de 5 grandes ciudades. La muestra del estudio fue suficientemente rica para representar a los paquistaníes en función del sexo, la edad, la educación, la profesión y la renta. La información se obtuvo a través de entrevistas y un cuestionario autoinformado. El estudio reveló que el 27% de los paquistaníes tienen tendencia a padecer diferentes trastornos mentales, siendo la depresión y los problemas relacionados con el sueño los problemas psicológicos más prevalentes en el país. Las mujeres, solteras, las personas menores de 40 años de edad, las personas con estudios primarios y las personas que pertenecen a la clase media-alta tienen una tendencia significativamente más elevada a sufrir trastornos mentales en comparación con sus homólogos. Los resultados serán útiles para los investigadores, los profesionales de salud mental y otras partes interesadas en la evaluación del estado de la salud mental en el país.

#### Palabras clave:

Prevalencia  
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### The Prevalent Tendencies for Mental Disorders in Pakistan

Mental health problems are globally recognized as a major social issue which needs to be addressed aggressively. Although 30% to 50% of the world population is expected to be suffering from some form of mental illness (Mackenzie, Gekoski, & Knox, 2006), studies have reported different figures for the prevalence of mental disorders in different countries, e.g., 10.1% in Canada, 18.5% in the United States, and 38.2% in Europe (Lesage et al., 2006; Pearson, Janz, & Ali, 2013; Wang et al., 2007; Wittchen et al., 2011). The prevalence of mental disorders has also been significantly found in Muslim countries. One fifth of primary-care attendees in Saudi Arabia (Al-Khathami & Ogbeide, 2002; Almutairi, 2015), more than half of the

general patients in the United Arab Emirates (Abou-Saleh, Ghubash, & Dardkeh, 2001; Dardkeh, Eapen, & Ghubash, 2005; El-Rufaiie & Absood, 1993), and 17% general population in Egypt (Ghanem, Gadallah, Meki, Mourad, & El-Kholy, 2009) were found to have some sort of mental disorders. Studies related to India (Khandelwal, Jhingan, Ramesh, Gupta, & Srivastava, 2004; Math, Chandrashekar, & Bhugra, 2007; Weiss, Isaac, Parkar, Chowdhury, & Raguram, 2001) revealed that at least 10 million Indians suffer from severe mental illness. Mirza and Jenkins (2004) referred to 20 studies conducted in Pakistan and stated that the prevalence of depression in Pakistan was 33%, with women having a higher prevalence than men. Other academic studies conducted in the country have also been focusing on a few typical mental disorders, e.g., depression and anxiety,

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and were mostly not focused on the general population. The researcher did not find any earlier study which would have focused on the prevalence of a variety of mental disorders in the general population. It was, therefore, considered the need of the time to explore it to analyze the latest situation of the prevailing mental disorders in the country. Although the current study did not intend to label the respondents as mentally ill as it would have required deeper clinical investigation, findings would help understand the tendencies of Pakistanis towards different mental disorders.

## Method

### Participants

The study involved 3,500 conveniently selected Pakistanis from different major cities, such as Islamabad, Rawalpindi, Peshawar, Abbottabad, and Lahore. They included both males ( $n = 1,621$ ) and females ( $n = 1,879$ ). Excluding minors, participants of the study belonged to all age groups, i.e., adolescents aged 13 to 19 years ( $n = 266$ ), young adults aged 20 to 29 years ( $n = 1,446$ ), adults aged 30 to 59 years ( $n = 1,702$ ), and elderly aged 60 years and above ( $n = 86$ ). They included both single ( $n = 1,696$ ) and married ( $n = 1,804$ ) people. Their educational qualifications varied as Primary ( $n = 19$ ), Middle ( $n = 55$ ), Secondary ( $n = 184$ ), High School ( $n = 479$ ), Graduation ( $n = 1,318$ ), Masters ( $n = 916$ ), MPhil ( $n = 397$ ), and PhD ( $n = 109$ ). The study also included illiterate participants ( $n = 23$ ). The participants belonged to different professions, i.e., teachers ( $n = 578$ ), housewives ( $n = 481$ ), businessmen ( $n = 262$ ), students ( $n = 1,128$ ), engineers ( $n = 118$ ), soldiers ( $n = 65$ ), lawyers ( $n = 27$ ), medical doctors ( $n = 141$ ), bankers ( $n = 10$ ), laborers ( $n = 59$ ), managers ( $n = 180$ ), government servants ( $n = 206$ ), nurses ( $n = 6$ ), journalists ( $n = 1,879$ ), policemen ( $n = 14$ ), and psychological counselors ( $n = 5$ ). The study also included jobless participants ( $n = 40$ ). Based on their economic status, participants were divided into four categories, i.e., poor, whose monthly income was lower than Rs. 30,000 per month ( $n = 815$ ), lower-middle class, whose monthly income was between Rs. 31,000 and Rs. 60,000 per month ( $n = 1,121$ ), upper-middle class, whose monthly income was between Rs. 61,000 and Rs. 90,000 per month ( $n = 607$ ), and well-off, whose monthly income was above Rs. 91,000 per month ( $n = 957$ ).

### Instrument

A detailed research questionnaire in the Urdu language was developed to gather the required data. The first part of the questionnaire consisted of the demographic information of the respondent, i.e., gender, age, profession, marital status, educational qualification, and approximate monthly income. The second part of the questionnaire consisted of a checklist to measure the tendencies for different mental disorders. This checklist was based on the symptoms of the understudied disorders in accordance with the Diagnostic and Statistical Manual of Mental Disorders IV-TR (American Psychiatric Association, 2000). The disorders measured were labeled as Depression, Anxiety, Stress, Adjustment-related problems, Sleep-related problems, Eating-related problems, Memory-related problems, Paranoid Personality Disorder, Schizoid Personality Disorder, Antisocial Personality Disorder, Borderline Personality Disorder, Histrionic Personality Disorder, Narcissistic Personality Disorder, Avoidant Personality Disorder, and Dependent Personality Disorder. It was intended not to label the respondents with certain mental disorders based on this checklist; hence the checklist was assumed to provide the possible tendencies for the understudied disorders. The entire questionnaire could take 20 to 25 minutes to be completed. Twenty-three research participants were illiterate. The same questionnaire was used as an interview schedule to obtain data from them while conducting individual interviews.

### Procedure

The researcher paid frequent visits to the aforesaid cities and approached the conveniently selected participants in different educational institutions, governmental and non-governmental offices, private companies, etc. The respondents were briefly informed about the objective of the study and their consent was obtained. The data gathered was analyzed with the Statistical Package for Social Sciences.

## Results

The current study has tried to assess tendencies for different mental disorders. Based on these findings, we cannot label the respondents with certain mental disorders; however, we can assume the possibilities of those disorders among them. According to the findings in this regard (Table 1), 38% of the respondents

**Table 1.** The Prevalent Tendencies for Different Mental Disorders with Variations

	<i>n</i>	<i>%</i>	<i>Gender</i>		<i>Marital Status</i>		<i>Age</i>		<i>Education</i>		<i>Socioeconomic Status</i>	
			<i>t</i>	<i>p</i>	<i>t</i>	<i>p</i>	<i>f</i>	<i>p</i>	<i>f</i>	<i>p</i>	<i>f</i>	<i>p</i>
Overall Tendencies	3,500	27	3.840	.000	5.760	.000	5.470	.001	4.170	.000	2.550	.054
Depression	1,316	38	7.080	.000	6.900	.000	7.190	.000	9.850	.000	6.250	.000
Anxiety	1,093	31	2.940	.003	2.650	.008	1.900	.127	2.560	.009	0.162	.922
Stress	1,112	32	1.450	.145	0.061	.951	3.430	.016	4.600	.000	1.860	.134
Adjustment	1,143	33	1.760	.078	6.680	.000	10.620	.000	3.330	.001	3.860	.009
Sleep	1,341	38	0.274	.784	1.650	.098	0.999	.392	1.490	.154	0.378	.769
Eating	1,041	30	2.450	.014	7.190	.000	15.960	.000	3.990	.000	5.090	.002
Memory	1,259	36	1.630	.103	3.530	.000	5.490	.001	3.730	.000	1.230	.294
Paranoid Personality Disorder	912	26	4.190	.000	2.870	.004	4.470	.004	1.470	.162	1.100	.346
Schizoid Personality Disorder	821	23	0.099	.921	4.970	.000	4.380	.004	2.450	.012	0.993	.395
Antisocial Personality Disorder	388	11	1.370	.170	4.100	.000	4.090	.007	1.480	.156	5.340	.001
Borderline Personality Disorder	647	18	2.490	.013	0.837	.403	1.740	.156	3.300	.001	2.550	.054
Histrionic Personality Disorder	831	24	1.020	.305	2.330	.020	7.240	.000	4.430	.000	3.460	.016
Narcissistic Personality Disorder	605	17	2.400	.016	6.640	.000	1.120	.336	2.030	.039	1.490	.213
Avoidant Personality Disorder	886	25	3.220	.001	2.690	.007	2.470	.059	1.680	.096	1.960	.117
Dependent Personality Disorder	1,026	29	5.620	.000	1.690	.090	3.810	.010	2.120	.031	1.620	.180

possessed tendencies for depression, 31% for anxiety, 32% for stress, 33% for adjustment-related disorders, 38% for sleep-related problems, 30% for eating-related problems, 36% for memory-related problems, 26% for paranoid personality disorder, 23% for schizoid personality disorder, 11% for anti-social personality disorder, 18% for borderline personality disorder, 24% for histrionic personality disorder, 17% for narcissistic personality disorder, 25% for avoidant personality disorder, and 29% for dependent personality disorder. The findings, if seen from an overall perspective on mental health, reveal that 27% of the respondents did possess tendencies for mental disorders. Depression and sleep-related problems were found to be on the top.

## Gender

The analysis based on gender revealed highly significant differences between males and females in having tendencies towards mental disorders (Table 2). Females had significantly higher tendencies towards mental disorders as compared with males ( $M = 29\%$  vs.  $26\%$ ,  $p = .000$ ). Probing further, females were found to have significantly higher tendencies for depression ( $M = 43\%$  vs.  $31\%$ ,  $p = .000$ ), anxiety ( $M = 33\%$  vs.  $29\%$ ,  $p = .003$ ), eating-related problems ( $M = 32\%$  vs.  $28\%$ ,  $p = .014$ ), paranoid personality disorder ( $M = 29\%$  vs.  $23\%$ ,  $p = .000$ ), avoidant personality disorder ( $M = 28\%$  vs.  $23\%$ ,  $p = .001$ ), and dependent personality disorder ( $M = 33\%$  vs.  $25\%$ ,  $p = .000$ ). Males, on the other hand, had significantly higher tendencies of borderline personality disorder ( $M = 22\%$  vs.  $17\%$ ,  $p = .013$ ) and narcissistic personality disorder ( $M = 19\%$  vs.  $16\%$ ,  $p = .016$ ) as compared to females.

## Marital Status

Unmarried participants were found to have significantly higher tendencies towards mental disorders (Table 2) as compared to married ( $M = 30\%$  vs.  $25\%$ ,  $p = .000$ ). Unmarried had significantly higher tendencies for depression ( $M = 43\%$  vs.  $32\%$ ,  $p = .000$ ), anxiety

( $M = 33\%$  vs.  $29\%$ ,  $p = .008$ ), adjusted-related problems ( $M = 38\%$  vs.  $28\%$ ,  $p = .000$ ), eating-related problems ( $M = 35\%$  vs.  $24\%$ ,  $p = .000$ ), paranoid personality disorder ( $M = 28\%$  vs.  $24\%$ ,  $p = .004$ ), schizoid personality disorder ( $M = 27\%$  vs.  $20\%$ ,  $p = .000$ ), antisocial personality disorder ( $M = 13\%$  vs.  $9\%$ ,  $p = .000$ ), histrionic personality disorder ( $M = 25\%$  vs.  $22\%$ ,  $p = .020$ ), narcissistic personality disorder ( $M = 22\%$  vs.  $13\%$ ,  $p = .000$ ) and avoidant personality disorder ( $M = 27\%$  vs.  $23\%$ ,  $p = .007$ ). Married participants, on the other hand, had significantly higher tendencies towards memory-related problems ( $M = 39\%$  vs.  $33\%$ ,  $p = .000$ ).

## Age

Adolescents (13 to 19 years of age) and young adults (20 to 29 years of age) had significantly higher tendencies towards mental disorders ( $M = 29\%$ ,  $p = .001$ ) (Table 2) as compared with adults (30 to 59 years of age) and elderly (60 years of age or above). Further analyses of variance revealed that adolescents had significantly higher tendencies towards adjustment-related problems ( $M = 38\%$ ,  $p = .000$ ), eating-related problems ( $M = 36\%$ ,  $p = .000$ ), paranoid personality disorder ( $M = 33\%$ ,  $p = .004$ ), schizoid personality disorder ( $M = 30\%$ ,  $p = .004$ ), antisocial personality disorder ( $M = 15\%$ ,  $p = .007$ ), histrionic personality disorder ( $M = 30\%$ ,  $p = .000$ ) and avoidant personality disorder ( $M = 28\%$ ,  $p = .059$ ). Young adults had significantly higher tendencies towards depression ( $M = 41\%$ ,  $p = .000$ ), stress ( $M = 34\%$ ,  $p = .016$ ) and dependent personality disorder ( $M = 32\%$ ,  $p = .010$ ). Adults had not projected any significantly higher variance towards any of the understudied mental disorders. Elderly had significantly higher tendencies towards memory-related problems ( $M = 50\%$ ,  $p = .001$ ).

## Education

People having primary level education had significantly higher tendencies towards mental disorders (Table 2) as compared with their counterparts ( $M = 33\%$ ,  $p = .000$ ). Further analyses of variance

**Table 2.** The Prevalent Tendencies for Different Mental Disorders: A Categorical View by Percentages

Category	Sub-category	N	D1	D2	D3	D4	D5	D6	D7	D8	D9	D10	D11	D12	D13	D14	D15	D16
Sex	Males	1,621	26	31	29	31	31	39	28	35	23	23	10	22	23	19	23	25
	Females	1,879	29	43	33	33	34	38	32	37	29	24	12	17	24	16	28	33
	Adolescents	266	29	40	30	24	38	35	36	33	33	30	15	16	30	16	28	27
Age	Young Adults	1,446	29	41	33	34	37	38	35	33	26	25	12	18	26	18	27	32
	Adults	1,702	26	35	30	31	29	40	25	38	25	21	10	21	20	17	23	28
	Elderly	86	24	23	23	27	21	36	26	50	15	19	8	20	29	13	28	21
Marital Status	Single	1,696	30	43	33	32	38	37	35	33	28	27	13	20	25	22	27	31
	Married	1,804	25	32	29	32	28	40	24	39	24	20	9	19	22	13	23	28
	Illiterate	23	26	39	35	30	35	43	22	43	22	26	9	17	13	17	13	26
Education	Primary	19	33	53	58	42	37	37	21	63	26	21	0	16	32	16	37	42
	Middle	55	31	44	40	33	44	49	36	31	31	25	9	16	22	9	29	44
	Secondary	184	26	39	29	26	25	39	28	44	24	28	7	12	26	12	26	25
	Higher Secondary	479	29	40	28	32	34	38	32	39	27	27	13	16	31	19	28	32
	Graduate	1,318	29	45	34	34	36	39	34	38	27	25	11	17	26	17	27	31
	Masters	916	25	29	28	33	29	36	23	33	23	21	10	22	19	16	24	28
	MPhil	397	25	29	29	20	28	41	29	28	28	18	12	26	19	22	22	25
Socio-economic Status <sup>1</sup>	PhD	109	28	31	31	39	34	28	30	36	34	17	16	32	23	21	17	27
	Below 29,000	815	27	41	31	33	32	40	29	35	24	23	10	19	22	17	24	30
	30,000 to 59,000	1,121	26	35	31	29	29	37	26	35	26	25	9	22	23	16	25	30
	60,000 to 89,000	607	29	43	31	33	37	38	33	36	26	25	14	16	29	19	29	32
	90,000 & above	957	28	35	32	33	34	39	33	38	28	22	13	18	23	18	25	27

Note. N = total respondents; D1 = Overall Tendencies; D2 = Depression; D3 = Anxiety; D4 = Stress; D5 = Adjustment; D6 = Sleep; D7 = Eating; D8 = Memory; D9 = Paranoid Personality Disorder; D10 = Schizoid Personality Disorder; D11 = Antisocial Personality Disorder; D12 = Borderline Personality Disorder; D13 = Histrionic Personality Disorder; D14 = Narcissistic Personality Disorder; D15 = Avoidant Personality Disorder; D16 = Dependent Personality Disorder.

<sup>1</sup>Monthly income in Pakistani Rupees.

revealed that people with primary levels of education (till grade 5) had significantly higher tendencies towards depression ( $M = 53\%$ ,  $p = .000$ ), anxiety ( $M = 58\%$ ,  $p = .009$ ), stress ( $M = 42\%$ ,  $p = .000$ ), memory-related problems ( $M = 63\%$ ,  $p = .000$ ) and histrionic personality disorder ( $M = 32\%$ ,  $p = .000$ ). People with middle levels of education (till grade 8) had significantly higher tendencies towards adjustment-related problems ( $M = 44\%$ ,  $p = .001$ ), eating-related problems ( $M = 36\%$ ,  $p = .000$ ) and dependent personality disorder ( $M = 44\%$ ,  $p = .031$ ). People with secondary level of education (till grade 10) had significantly higher tendencies towards schizoid personality disorder ( $M = 28\%$ ,  $p = .012$ ). People with MPhil had significantly higher tendencies towards narcissistic personality disorder ( $M = 22\%$ ,  $p = .039$ ). People with PhD had significantly higher tendencies towards borderline personality disorder ( $M = 32\%$ ,  $p = .001$ ). Illiterates, people with higher secondary education (grades 11 & 12), people with graduation and people with master level qualification did not showed any significantly higher variance towards any of the understudied mental disorders.

### Income

The upper-middle class had significantly higher tendencies towards mental disorders ( $M = 29\%$ ,  $p = .054$ ) compared to the poor, lower-middle or well-off class (Table 2). This class specifically had significantly higher tendencies towards depression ( $M = 43\%$ ,  $p = .000$ ), adjusted-related problems ( $M = 37\%$ ,  $p = .009$ ), eating-related problems ( $M = 33\%$ ,  $p = .002$ ), anti-social personality disorder ( $M = 14\%$ ,  $p = .001$ ) and histrionic personality disorder ( $M = 19\%$ ,  $p = .016$ ) as compared with its counterparts. The poor class, at one instance only, showed significantly higher tendencies towards borderline personality disorder ( $M = 19\%$ ,  $p = .054$ ) compared with rest of the classes.

### Discussion

Earlier studies in different parts of the world have also found women having more mental disorders than men (e.g., Kessler, McGonagle, Swartz, Blazer, & Nelson, 1993; Seedat et al., 2009). Certain studies also attempted to distinguish this difference for specific mental disorders separately and found that women were twice more likely to have anxiety and mood-related disorders as compared to men (e.g., Angst et al., 2002; de Graaf, ten Have, van Gool, & van Dorsselaer, 2012; Kessler et al., 1994); men were four times more likely to develop substance abuse and impulsive disorders as compared to women (e.g., Offord et al., 1996; Seedat et al., 2009); and women had higher levels of borderline personality disorder as compared to men (American Psychiatric Association, 2000).

The impact of marital life on mental health has been studied widely. The emotional security and social stability associated with marital life helps improve one's mental health. Consequently, widows, separated, and divorced showed higher rates of mental disorders as compared to the married (e.g., Gove, 1972; Gove & Tudor, 1973; Kiecolt-Glaser & Newton, 2001; Wu & DeMaris, 1996).

Studies in the lifespan psychopathology have also suggested that the prevalence of mental disorders is more common in young adults as compared with the elderly (Donnellan & Lucas, 2008; Gum, King-Kallimanis, & Kohn, 2009; Hasin, Goodwin, Stinson, & Grant, 2005; Hoertel et al., 2013; Jorm, 2000; Kessler et al., 2005; Manetti et al., 2014; Schuster, Hoertel, Le Strat, Manetti, & Limosin, 2013; Seitz, Purandare, & Conn, 2010; Sunderland, Anderson, Sachdev, Titov, & Andrews, 2015; Weissman et al., 1985).

Higher educational qualifications have always been positively associated with enhanced mental health. Lower-educated people generally report more tendencies towards mental disorders (Dohrenwend & Schwartz, 1995; Mirowsky & Rose, 1998, 2003, 2005).

Earlier studies have suggested that mental disorders are more

associated with the ones who belong to lower economic status and poverty has also been positively associated with poor mental health (e.g., Adler, Epel, Castellazzo, & Ickovics, 2000; Collins & Goldman, 2008; McLeod & Shanahan, 1993; Rutter, 2003; Singh-Manoux, Adler, & Marmot, 2003; Singh-Manoux, Marmot, & Adler, 2005). The findings of the current study did not support the association of poverty and poor mental health, but the people belonging to the upper-middle range by their income were found more inclined towards mental disorders. The role of religiosity could have been one of the mediating factors here and could be further studied in future.

### Conflict of Interest

The author of this article declares no conflict of interest

### References

- Abou-Saleh, M. T., Ghubash, R., & Dardkeh, T. K. (2001). Al Ain community psychiatric survey. I. Prevalence and sociodemographic correlates. *Social Psychiatry & Psychiatric Epidemiology*, 36, 20-28.
- Adler, N. E., Epel, E. S., Castellazzo, G., & Ickovics, J. R. (2000). Relationship of subjective and objective social status with psychological and physiological functioning: Preliminary data in healthy, White women. *Health psychology*, 19, 586-592.
- Al-Khathami, A. D., & Ogebeide, D. O. (2002). Prevalence of mental illness among Saudi adult primary-care patients in Central Saudi Arabia. *Saudi Medical Journal*, 23, 721-724.
- Almutairi, A. F. (2015). Mental illness in Saudi Arabia: An overview. *Psychology Research and Behavior Management*, 8, 47-49.
- American Psychiatric Association. (2000). *Diagnostic and statistical manual of mental disorders* (4th ed., text revision). Washington, DC: Author.
- Angst, J., Gamma, A., Gastpar, M., Lépine, J. P., Mendlewicz, J., & Tylee, A. (2002). Gender differences in depression: Epidemiological findings from the European DEPRES I and II studies. *European Archives of Psychiatry and Clinical Neuroscience*, 252, 201-209.
- Collins, A. L., & Goldman, N. (2008). Perceived social position and health in older adults in Taiwan. *Social science & medicine*, 66, 536-544.
- Dardkeh, T. K., Eapen, V., & Ghubash, R. (2005). Mental morbidity in primary care in Al Ain (UAE): Application of the Arabic translation of the PRIME-MD (PHQ) version. *German Journal of Psychiatry*, 8, 32-35.
- De Graaf, R., ten Have, M., van Gool, C., & van Dorsselaer, S. (2012). Prevalence of mental disorders and trends from 1996 to 2009. Results from the Netherlands Mental Health Survey and Incidence Study-2. *Social Psychiatry and Psychiatric Epidemiology*, 47, 203-213.
- Dohrenwend, B. P., & Schwartz, S. (1995). Socioeconomic status and psychiatric disorders. *Current Opinion in Psychiatry*, 8, 138-141.
- Donnellan, M. B., & Lucas, R. E. (2008). Age differences in the Big Five across the life span: evidence from two national samples. *Psychology and aging*, 23, 558-566.
- El-Rufaie, O. E. F. A., & Absood, G. (1993). Minor psychiatric morbidity in primary health care: Prevalence, nature, and severity. *International Journal of Social Psychiatry*, 39, 159-166.
- Ghanem, M., Gadallah, M., Meky, F. A., Mourad, S., & El-Kholy, G. (2009). National survey of prevalence of mental disorders in Egypt: Preliminary survey. *Eastern Mediterranean Health Journal*, 15, 65-75.
- Gove, W. R. (1972). The Relationship between Sex Roles, Mental Illness, and Marital Status. *Social Forces*, 51, 34-44.
- Gove, W., & Tudor, J. F. (1973). Adult sex roles and mental illness. *American Journal of Sociology*, 78, 812-835.
- Gum, A. M., King-Kallimanis, B., & Kohn, R. (2009). Prevalence of mood, anxiety, and substance-abuse disorders for older Americans in the national comorbidity survey-replication. *The American Journal of Geriatric Psychiatry*, 17, 769-781.
- Hasin, D. S., Goodwin, R. D., Stinson, F. S., & Grant, B. F. (2005). Epidemiology of major depressive disorder: results from the National Epidemiologic Survey on Alcoholism and Related Conditions. *Archives of general psychiatry*, 62, 1097-1106.
- Hoertel, N., Le Strat, Y., Gorwood, P., Béra-Potelle, C., Schuster, J. P., Manetti, A., ... Limosin, F. (2013). Why does the lifetime prevalence of major depressive disorder in the elderly appear to be lower than in younger adults? Results from a national representative sample. *Journal of affective disorders*, 149, 160-165.
- Jorm, A. F. (2000). Does old age reduce the risk of anxiety and depression? A review of epidemiological studies across the adult life span. *Psychological medicine*, 30, 11-22.
- Kessler, R. C., Berglund, P., Demler, O., Jin, R., Merikangas, K. R., & Walters, E. E. (2005). Lifetime prevalence and age-of-onset distributions of DSM-IV disorders in the National Comorbidity Survey Replication. *Archives of general psychiatry*, 62, 593-602.

- Kessler, R. C., McGonagle, K. A., Swartz, M., Blazer, D. G., & Nelson, C. B. (1993). Sex and depression in the National Comorbidity Survey I: Lifetime prevalence, chronicity and recurrence. *Journal of Affect Disorders*, *29*, 85-96.
- Kessler, R. C., McGonagle, K. A., Zhao, S., Nelson, C. B., Hughes, M., Eshleman, S., ... Kendler, K. S. (1994). Lifetime and 12-month prevalence of DSM-III-R psychiatric disorders in the United States. Results from the National Comorbidity Survey. *Archives of General Psychiatry*, *51*, 8-19.
- Khandelwal, S. K., Jhingan, H. P., Ramesh, S., Gupta, R. K. & Srivastava, V. K. (2004) India mental health country profile. *International Review of Psychiatry*, *16*, 126-141.
- Kiecolt-Glaser, J. K., & Newton, T. L. (2001). Marriage and health: his and hers. *Psychological Bulletin*, *127*, 472-503.
- Lesage, A., Vasiliadis, H.-M., Gagne, M.-A., Dudgeon, S., Kasman, N., & Hay, C. (2006). *Prevalence of mental illness and related service utilization in Canada: An analysis of the Canadian Community Health Survey*. Mississauga, Ontario: Canadian Collaborative Mental Health Initiative.
- Mackenzie, C. S., Gekoski, W. L., & Knox, V. J. (2006). Age, gender, and the underutilization of mental health services: *The influence of help-seeking attitudes*, *10*, 574-582.
- Manetti, A., Hoertel, N., Le Strat, Y., Schuster, J. P., Lemogne, C., & Limosin, F. (2014). Comorbidity of late-life depression in the United States: a population-based study. *The American Journal of Geriatric Psychiatry*, *22*, 1292-1306.
- Math, S. B., Chandrashekar, C. R. & Bhugra, D. (2007) Psychiatric epidemiology in India. *Indian Journal of Medical Research*, *126*, 183-192.
- McLeod, J. D., & Shanahan, M. J. (1993). Poverty, parenting, and children's mental health. *American sociological review*, *351*-366.
- Mirowsky, J., & Ross, C. E. (1998). Education, personal control, lifestyle and health a human capital hypothesis. *Research on aging*, *20*, 415-449.
- Mirowsky, J., & Ross, C. E. (2003). *Education, social status, and health*. Hawthorne, NY: Aldine de Gruyter.
- Mirowsky, J., & Ross, C. E. (2005). Education, cumulative advantage, and health. *Ageing International*, *30*, 27-62.
- Mirza, I., & Jenkins, R. (2004). Risk factors, prevalence and treatment of anxiety and depressive disorders in Pakistan: a systematic review. *British Medical Journal*, *328*, 794.
- Offord, D. R., Boyle, M. H., Campbell, D., Goering, P., Lin, E., Wong, M., & Racine, Y. A. (1996). One-year prevalence of psychiatric disorder in Ontarians 15 to 64 years of age. *Canadian Journal of Psychiatry*, *41*, 559-563.
- Pearson, C., Janz, T., & Ali, J. (2013). *Mental and substance use disorders in Canada* (Catalogue no. 82-624-X). Ottawa, Ontario: Statistics Canada.
- Rutter, M. (2003). Poverty and child mental health: Natural experiments and social causation. *JAMA*, *290*, 2063-2064.
- Schuster, J. P., Hoertel, N., Le Strat, Y., Manetti, A., & Limosin, F. (2013). Personality disorders in older adults: findings from the National Epidemiologic Survey on Alcohol and Related Conditions. *The American Journal of Geriatric Psychiatry*, *21*, 757-768.
- Seedat, S., Scott, K. M., Angermeyer, M. C., Berglund, P., Bromet, E. J., Brugha, T., ... Kessler, R.C. (2009). Cross national associations between gender and mental disorders in the WHO World Mental Health Surveys. *Archives of General Psychiatry*, *66*, 785-795.
- Seitz, D., Purandare, N., & Conn, D. (2010). Prevalence of psychiatric disorders among older adults in long-term care homes: a systematic review. *International Psychogeriatrics*, *22*, 1025-1039.
- Singh-Manoux, A., Adler, N. E., & Marmot, M. G. (2003). Subjective social status: its determinants and its association with measures of ill-health in the Whitehall II study. *Social science & medicine*, *56*, 1321-1333.
- Singh-Manoux, A., Marmot, M. G., & Adler, N. E. (2005). Does subjective social status predict health and change in health status better than objective status? *Psychosomatic medicine*, *67*, 855-861.
- Sunderland, M., Anderson, T. M., Sachdev, P. S., Titov, N., & Andrews, G. (2015). Lifetime and current prevalence of common DSM-IV mental disorders, their demographic correlates, and association with service utilisation and disability in older Australian adults. *Australian & New Zealand Journal of Psychiatry*, *49*, 145-155.
- Wang, P. S., Aguilar-Gaxiola, S., Alonso, J., Angermeyer, M. C., Borges, G., Bromet, E. J., ... Wells, J. E. (2007). Use of mental health services for anxiety, mood, and substance disorders in 17 countries in the WHO world mental health surveys. *The Lancet*, *370*, 841-850.
- Weiss, M. G., Isaac, M., Parkar, S.R., Chowdhury, A. N. & Raguram, R. (2001). Global, national and local approaches to mental health: Examples from India. *Tropical Medicine and International Health*, *6*, 4-23.
- Weissman, M. M., Myers, J. K., Tischler, G. L., Holzer, C. E., Leaf, P. J., Orvaschel, H., & Brody, J. A. (1985). Psychiatric disorders (DSM-III) and cognitive impairment among the elderly in a US urban community. *Acta Psychiatrica Scandinavica*, *71*, 366-379.
- Wittchen, H. U., Jacobi, F., Rehm, J., Gustavsson, A., Svensson, M., Jonsson, B., ... Steinhausen, H. C. (2011). The size and burden of mental disorders and other disorders of the brain in Europe 2010. *European Neuropsychopharmacology*, *21*, 655-679.
- Wu, X., & DeMaris, A. (1996). Gender and marital status differences in depression: the effects of chronic strains. *Sex Roles* *34*, 299-320.