Stark contrast in prevalence and correlates of mental disorder in the Arabic and Indian populations.

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REVIEW

Stark Contrast in Prevalence and Correlates of Mental Disorder in the Arabic and Indian Populations

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Abstract

The Indian and Saudi Arabian (a prototypical Arab nation) national mental health surveys were compared. In comparison to Saudi Arabia, India had a 2.5-fold lower lifetime prevalence of mental illnesses, a 3.8-fold lower current prevalence, and a 7-fold lower prevalence of serious mental disorders. All mental disorders, except drug use disorder, were less common in India. Being over 40 years old and having a better education level had a greater rate of mental illness in India; conversely, being a woman increases the risk of mental illness in Saudi Arabia, particularly anxiety and eating disorders. Besides substance abuse disorders, the treatment gap for mental illnesses is larger in Saudi Arabia. Overall, the comparison suggests a contrasting difference in the prevalence of psychiatric disorders, and their demographic correlation varies between the Indian and Saudi Arabian populations. There is a need to understand as to why such discrepancies exist.

Keywords: National mental health survey, Prevalence, Mental disorders, India, Saudi Arabia

1. Introduction

Mental illnesses are common medical issues and can be quite disabling. According to community-based epidemiological research, lifetime prevalence rates of mental disorders in people range from 12.2% to 48.6%, with 12-month prevalence rates ranging from 8.4% to 29.1% [1,2]. The prevalence of mental disorders varies by region for a variety of reasons. Mental illness was predicted to cause 49% of disability-adjusted life-years (DALYs) in 2019 and looks to continue increasing over time [3].

Saudi Arabia is a high-income Islamic country with Arabic as its official language. Saudi Arabia has a population of 33.4 million, with 20.7 million Saudi citizens and 12.7 million foreign workers. Most of its residents (83.5%) live in cities [4]. Males account for 51% of the population, while females account for 49% [5]; 30% of the population is under 14 years old, 19% is 15–24 years old, 18% is 25–34 years old, 19% is 35–49 years old, and 14% is 50 years and above. Unmarried people make up 37% of the population, married people make up 58%, divorced people make up 2%, and widowed people make up 3% [6].

No large-scale epidemiological survey has ever been conducted in Saudi Arabia. Drug use disorders, depressive disorders, and anxiety disorders are the third, fourth, and sixth leading causes of disability in the Kingdom of Saudi Arabia, according to the Global Burden of Disease Initiative (based on data from 108 epidemiological surveys in other Eastern Mediterranean Region countries) [7,8].

The suicide rate was 3.4 per 100,000 in 2017, according to the World Health Organization [9]. According to reports, 1.1% of those who used drugs were between the ages of 18 and 29, with the majority being between 18 and 29 years [10]. Dementia

affects an estimated 50,000 persons, many of whom rely on family carers for care [11]. Psychiatric morbidity studies were smaller studies with restricted samples focused on a specific illness or group, such as hospital patients, primary healthcare centres, faith healing settings, or student populations. The conclusion was challenging because of the wide prevalence range [12].

India is a developing country with a population of 1.38 billion people, accounting for more than 17% of the world's total. India's population is young, with more than 65% of the population under the age of 35 and 41% under the age of 18. Females comprised 48.04% of the population, while men comprised 51.96%. Hindus account for 79.5% of the population, Muslims 15%, Christians 2.3%, and others 2.5%. The national language is Hindi; however, different states utilize 22 additional official languages [13]. In the 1960s, attempts were undertaken to perform epidemiological research, with one significant attempt being later the DST-ICMR partnership study, a multicenter cross-national study [14]. According to studies, the prevalence of mental diseases ranges from 9.5 to 370 per 1000 people. Due to the large diversity in the pattern and prevalence rates, Gururaj et al. used the median of the two meta-analyses of Reddy and Chandrashekhar [15] and Ganguli [16] to arrive at a conservative estimate of 65 per 1000 people [17]. In 2003, the World Mental Health Survey was done in 11 Indian cities, indicating a prevalence of roughly 5%, with men having a greater prevalence than women. Depression was the most common (lifetime = 3.14%; previous year = 1.7%), with 5% of people seeking treatment [18]. Methodological difficulties such as geographical, population or site specificity constrained all epidemiological investigations, and the majority of data was acquired through door-to-door surveys, resulting in varying rates.

Saudi Arabia is the prototypical Arabic country, with little sociocultural variation compared to India. There appear to be disparities in psychosocial determinants of mental health between the two countries, including economic status, illiteracy, access to housing and other amenities, social support, and gender-based discrimination. Apart from these, there are differences in culture, predominant religious practice, political environment, and nature of geographical adversities. Comparative analysis of Saudi and Indian mental health survey findings may aid in comprehending the similarities and differences in mental health issues in such disparate environments. Thus, in this article, data from the Saudi National Mental Health Survey (SNMHS-2019) [19] and the National Mental Health Survey (NMHS-

2015-16) of India are compared. This will aid us in comprehending the differences and similarities in epidemiological findings in these diverse populations. The Saudi National Mental Health Survey (SNMHS) [19] was conducted as part of the WHO WMH Survey Initiative, using the Standardized World Mental Health Surveys tool and methods to provide accurate data on the prevalence and distribution of mental disorders and unmet treatment needs. The computerized composite international diagnostic interview version 3.0 (CIDI 3) [20] in Arabic was utilized to determine the psychiatric diagnosis. The SNMHS was based on a nationally representative multistage clustered area probability sample strategy focused on residents living outside Jazan and Najran's administrative areas. Because of political tensions along the Saudi-Yemeni border with these regions, Jazan and Najran were excluded. In families with both males and females aged 15−65, interviews were done on one randomly selected male and one randomly selected female, and only one randomly selected respondent in households with either all males or all females. Face-to-face interviews were done by trained lay interviewers. The survey was conducted in two parts. All Part I respondents (n = 4004) who met lifetime criteria for any of these disorders plus a probability subsample of other Part I respondents were then administered Part II (n = 2023), which assessed disorders of secondary interest and a wide range of correlates. On the cross-classification of key sociodemographic and geographic characteristics, the part I sample was weighted to account for differential selection probabilities within and across households and match sample distributions to population distributions. The Part II sample was then weighted to account for the underrepresentation of Part I respondents who did not have core disorders. As a result, core disorder prevalence estimates in the weighted Part II sample are identical to those in the Part I sample.

The National Mental Health Survey (NMHS) [19] was performed in India to address the demand for high-quality, scientifically sound data and to promote mental health policies and programs at the national and state levels. The Ministry of Health and Family Welfare (MOHFW) commissioned the National Institute of Mental Health and Neurosciences (NIMHANS) to conduct the survey in a nationally representative population, examining priority mental disorders, estimating treatment gaps, assessing service utilization, disability, and socio-economic impact, as well as evaluating resources and systems. The Mini International Neuropsychiatric Interview version 6.0 (MINI 6) [21] was used to determine prevalent mental disorders. The NMHS

was conducted in 12 chosen states based on regional representation and survey completion logistical feasibility. A multistage, stratified, random cluster selection procedure was used to choose eligible study subjects (adults 18+ years) in households. Clusters were randomly selected based on probability proportionate to size to ensure that the sample included both urban and rural residents. Systematic sampling was used to identify households within each cluster, and all eligible household members were interviewed. The sample size at the state level was estimated at 3000 study subjects, translating to 36,000 at the national level based on prevalence, design effect, and non-response. In mainland India, the sampling frame included 343 districts spread across six regions and 12 states, from which 43 districts, 80 talukas/sub-districts, 720 clusters, 10,610 families, and 39,532 eligible respondents were randomly selected and interviewed.

In light of the above, the objective of this study was to examine the prevalence and correlation of mental disorders, as well as the treatment gap, in the Saudi National Mental Health Survey (SNMHS-2019) and the National Mental Health Survey (NMHS-2015-16) of India.

2. Survey sample

The survey sample size in India was 8.7 times larger (34802) than in Saudi Arabia (4,004). In India, female participants (52.34%) outnumbered male participants (47.66%), while in Saudi Arabia, there was not much difference (male = 50.5%, female = 49.5%). More than one-fourth of the sample in India were above the age of 50 years or more (28.84%), while among Saudi Arabian, it was much less (13.2%). The higher education proportion was higher in Saudi Arabia than the Indian counterpart. Saudis had a greater number of never-married and previously-married subjects, whereas Indians had more presently married subjects (Table 1).

3. The overall prevalence of the mental disorder

There appears to be a significant disparity in the prevalence of mental disorders in India and Saudi Arabia. In India, the lifetime prevalence of mental disorders was 2.5 times lower than in Saudi Arabia (13.7% vs. 34.2%), and the current prevalence is 3.8 times lower (10.6% vs. 40%). Similarly, India has a 7-fold lower rate of severe mental disorders than Saudi Arabia (0.8% vs. 7.9%). Due to frame exclusions (e.g., omitting those who are not living in families), the increased reluctance of mentally ill

Table 1. Characteristics of the survey sample

	Saudi Arabia [24]	India [23]
Sample size	4004	34802
Gender		
Female	49.5%	52.34%
Male	50.5%	47.66%
Age	% (Years)	% (Years)
	34.8% (15−24)	34.04% (18−29)
	24.7% (25−34)	20.29% (30−39)
	27.2% (35−49)	16.82% (40−49)
	13.2% (50+)	28.84% (50+)
Education	% (years of education)	% (years of education)
Student/Others	12.8%	20.76%
Low	16.7% (0−6)	41.86% (0−5)
Low average	12.4% (7−9)	16.44% (6−8)
High average	40.0% (10−15)	18.47% (9−15)
High	18.2% (16+)	2.47% (15+)
Marital status		
Previously married	8.2%	6.62%
Never married	43.0%	18.73%
Currently married	48.9%	74.65%

people to participate, under-reporting due to stigma, and recollection error, it was assumed to be higher than the estimated proportion [22] (Table 2).

4. Demographic characteristics of patients with mental illness

Among Saudis, the prevalence increases with a decrease in age. Though males in India tend to have increased in current prevalence, there is no such difference in the Saudi Population. In India, employed people tend to be four times less likely to suffer from mental disorders than their Saudi counterparts, who had a lower frequency of mental illness among unemployed people. In India, prevalence diminishes as one's socioeconomic position improves, while it rises in Saudi Arabia (Table 3).

In India, substance use disorder is the most frequent mental disorder, followed by depression, whereas separation anxiety disorder is the most common psychiatric disorder in Saudi Arabia, followed by ADHD and mood disorder. All anxiety disorders are more

Table 2. Overall prevalence of mental disorders

Prevalence of mental disorder	Saudi Arabia [19,22,24]	India [19,23,25]
The occurrence of mental health conditions across lifetime	34.2%	13.7%
The prevalence of mental health conditions in 12 months	40%	10.6
Prevalence of Severe mental health condition	7.9%	0.8

Table 3. Demographic characteristics of patients with mental illness

| | | India [19,23,25] | | Saudi [19,22,27—29] | |
		Lifetime	Current	Lifetime	Current
Age (Years)	18—29	9.54	7.39	40 (15—24)	40 (15—24)
	30—39	14.60	11.58	40 (25—34)	40 (25—34)
	40—49	18.36	14.48	29 (35—49)	29 (35—49)
	50—59	16.16	12.42	19 (50—65)	19 (50—65)
	60 and above	15.11	10.90		
Gender	Male	16.75	13.86	36	22.2
	Female	10.80	7.47	33	13.7
Occupation	Workers	16.95	13.67		66.7
	Non-Workers	10.90	7.92		76.0
	Others	18.48	14.77		
Marital status	Never married	9.58	7.66	37.32	
	Married	14.38	11.16	30.44	
	Widowed / Divorced / Separated	19.01	12.89	42.47	
	Others	9.70	8.66		
Income quintile	Lowest	15.69	12.28	32.35 (Low)	
	Second	15.04	12.14	30.97 (Low average)	
	Middle	13.55	10.53	35.78 (high average)	
	Fourth	12.28	9.61	37.08 (High)	
	Highest	12.20	8.76		
Disorders	Any mental disorder	13.67	10.56	34.2	
	Separation anxiety disorder	—	—	13.0	3.7
	Major depressive disorder	5.25	2.68	6.0%	3.8
	Attention deficits hyperactive disorder			8%	3.2
	Social phobia	0.47	0.47	5.6%	4.2
	Bipolar I-II	0.50	0.30	3.2%	3.0
	Agoraphobia without panic	1.62	1.62	2.3%	1.8
	Panic disorder	0.50	0.28	1.6%	1.3
	Obsessive-compulsive disorder	0.76	0.76	4.1%	1.8
	Post-traumatic stress disorder	0.24	0.24	3.3%	1.8
	Generalized anxiety disorder	0.57	0.57	1.9%	0.9
	Conduct disorder	—	—	1.7%	0.3
	Any substance use	22.44	22.44	4.0	1.9
	Drug dependence	5.0		0.8%	0.5

prevalent among Saudis, mainly eating, post-traumatic, and intermittent explosive disorder (Table 3). Though the Saudi survey did not include schizophrenia, a hospital-based study reveals that 55.8% of inpatients and 28.9% of outpatients in the hospital setting have schizophrenia [26].

5. Demographic correlation of mental illness

There appear to be significant relationships between mental disorders and demographic variables. In India, mental illness tends to increase in the fourth decade of life, while in Saudi, it tends to be below the fourth decade of life. In India, being male gender increases the risk of mental disease, whereas being female gender increases the risk of mental illness in Saudi Arabia. In terms of education, higher education appears to reduce risk in India, in contrast to Saudi equivalents (Table 4).

Regarding the correlations between sociodemographic characteristics and various mental disorders,

phobia was significantly more prevalent among females in India. In contrast, specific phobias, agoraphobia, and generalized anxiety disorder were significantly more prevalent among Saudi females. Male gender was linked to a higher likelihood of drug use disorder in both populations. Mood disorders were more common in India's 40—49 age group, while they were more common in the 24—35 age group in Saudi Arabia (Table 4).

6. Treatment gap

Two decades ago, the World Health Organization estimated the highest global mean of treatment gap for mental health issues to be 76.2 [30]. The Saudi and Indian populations exceeded the global estimate, and the Saudi proportion of the overall treatment gap exceeded the Indian proportion. Except for drug abuse disorders, which are less common in Saudi Arabia, the treatment gap for other mental illnesses is wider than in India. For

Table 4. Correlation of demographic variables with mental illness

		Saudi Arabia [19,22,27–29]		India [19,23,25]	
		OR	95% CI	Adj OR /%	CI
Age* Any Disorder	15–24	3.0	1.3–6.8	Ref (18–29)	Ref
	24–34	2.4	1.2–5.0	1.34 (30–39)	1.19–1.50
	35–49	1.4	0.6–3.1	1.62 (40–49)	1.44–1.82
	50+	1.0	–	1.32 (50–59)	1.16–1.51
Age* Mood Disorder	15–24	7.0	2.8–17.5	1.76% (18–29)	(1.72–1.80)
	24–34	3.2	1.4–7.5	2.77% (30–39)	(2.71–2.83)
	35–49	2.4	1.0–5.5	3.87% (40–49)	(3.79–3.96
	50+	1.0	–	3.75% (50–59)	(3.65–3.84)
Marital status*Any Disorder	Never married	0.8	0.6–1.2	Ref	
	Previously married	2.4	1.3–4.4	1.58	1.30–1.89
	Currently married	1	–	1.10	0.97–1.24
Marital status*Mood Disorder	Never married	0.5	0.3–1.0		
	Previously married	2.4	1.2–4.8		
	Currently married	1.0	–		
Gender*Any disorder	Female	1.8	1.2–2.7	Ref	
	Male	1.0	–	2.06	1.88–2.26
Gender*anxiety disorder	Female	2.1	1.2–3.8	4.29	4.24–4.33
	Male	1.0	–	2.72%	2.67–2.76
Gender* Mood Disorder	Female	1.6	1.1–2.5	3.09%	3.05–3.13
	Male	1.0	–	2.57%	2.53–2.61
Gender * Agoraphobia	Female	2.2	1.0–4.8		
	Male	1.0	–		
Gender * Social phobia	Female	1.8	(1.2–2.6)	1.46% (phobia)	1.43–1.49
	Male	1.0	–	2.34% (phobia)	2.30–2.37
Gender *GAD	Female	2.8	(1.4–5.5)	0.38%	0.36–0.39
	Male	1.0	–	0.76%	0.74–0.78
Substance use Disorders*Gender	Female	0.7	0.3–1.6	10.05%	9.98–10.12
	Male	1.0	–	35.67%	35.55–35.79
Occupation* Any Disorder	Workers			Ref	
	Non-Workers			0.82	0.75–0.90
	Others			1.29	0.83–2.03
Income quintile* Any Disorder	High	1.0	–	Ref (Highest)	
	High average	1.3	0.9–2.0	1.34 (Fourth)	1.19–1.50
	Low average	0.8	0.4–1.3	1.13 (Middle)	1.01–1.27
	Low	0.8	0.6–1.2	1.03 (Second)	0.91–1.15
				1.40 (Lowest)	1.24–1.57
Education * Mood Disorder	Student	0.6	0.3–1.3		
	Low	0.4	0.2–0.8		
	Low average	1.0	0.4–2.2		
	High average	0.6	0.4–1.2		
	High	1.0	–		
Residence* Any Disorder	Rural			Ref	
	Urban non-metro			1.14	1.02–1.26
	Urban metro			1.91	1.75–2.09

Table 5. Mental illness and treatment gap

	Saudi Arabia [34,35]	India [23]
Common disorder	89.1%	85.0%
Severe disorder	77.8%	73.6%
Bipolar affective disorders	84.2	70.4%
Schizophrenia and otherpsychotic disorders	–	75.5%
Neurotic disorders	86.3	84.0%
Major depressive disorders	89.4	85.2%
Substance use disorders	65.1	91.1%

schizophrenia and other psychiatric disorders, there is no Saudi data to compare (Table 5).

7. Discussion

Common mental disorders are prevalent in both countries. The findings indicate a significant contrast in the prevalence of mental disorders between these two nations, highlighting potential variations in mental health challenges and their management.

The study reports a notably lower lifetime prevalence of mental disorders in India compared to Saudi Arabia. These figures point to a noteworthy divergence in the ongoing mental health burden between the two countries. Furthermore, the study reveals a significant difference in the rates of severe mental disorders. This divergence in severe mental disorder rates indicates variations in the severity and complexity of mental health issues individuals in these nations face. While these findings are valuable, critically analysing the potential factors contributing to these disparities is important. Firstly, critically assessing the methodologies employed in both surveys is important. There was a contrast difference between the survey sample size. In India, the survey was conducted among a nationally representative sample of 34802 individuals; in Saudi Arabia, it was 4004. The study sample of people with mental illnesses was also not the same. The Saudi population had more females, more educated people, and single status (never married, previously-married).

In contrast, in the Indian population, there were more males and married subjects. Secondly, the tools used to diagnose mental illness were different. MINI 6.0 was utilized among Indians, while CIDI 3.0 was used among Saudis. In the Saudi study, conservative coding rules for defining disorder prevalence may have been reflected in higher prevalence [24]. When the severity of symptoms is low, there appears to be some diagnostic disagreement when these two tools are used [31].

Additionally, cultural and linguistic differences could affect how respondents understand and report mental health concepts, particularly on the threshold of symptoms to be diagnosed as a disorder. Finally, additional elements such as geography, socioeconomic, and cultural factors may have a role. For example, Saudis have a very high risk of feeling as if they fail to meet social obligations and receive negative feedback, which contributes to social phobia [24,32].

The findings of the research reveal striking differences in the demographic features of people with mental illnesses in Saudi Arabia and India. These results may highlight the complex interaction of cultural, social, and economic variables in determining the frequency and patterns of mental disorders among two diverse communities. Notably, a concerning pattern appears among Saudis in which the frequency of mental problems grows with decreasing age. This age-related vulnerability necessitates focused mental health interventions for Saudi Arabia's younger population. In India, there is a differential gender-based variation, with men having a greater current frequency. This suggests that there may be gender-specific attributes impacting mental health in India.

The effect of employment status on the prevalence of mental disorders is particularly striking. In India, those who are working are far less likely to suffer from mental problems than those who are unemployed. In contrast, there is a greater prevalence of mental disease among the unemployed in Saudi Arabia. These results highlight the importance of socioeconomic determinants and employment-related stresses in explaining mental health disparities between the two nations. Furthermore, the link between socioeconomic status and the prevalence of mental disorders is complex. In contrast to India, where incidence decreases as socioeconomic status increases, Saudi Arabia has the reverse tendency. This shows that there are complicated relationships between economic growth and mental health outcomes in these countries.

The distribution of specific mental diseases also vividly illustrates the unique issues encountered by each nation. In India, drug use disorder and depression take primacy, demanding an immediate focus on substance abuse and mood-related issues. Separation anxiety disorder is the most prevalent psychiatric disorder in Saudi Arabia, followed by attention deficit hyperactivity disorder and mood disorder. Notably, Saudis have a higher prevalence of anxiety disorders, including eating, post-traumatic, and intermittent explosive disorders. Despite the absence of schizophrenia in the Saudi survey, a separate hospital-based study reveals large prevalence of schizophrenia among inpatients and outpatients, highlighting the need of evaluating data from several sources.

Gender appears as a crucial aspect in comprehending the dynamics of mental health. In India, being male is related with an increased risk of mental illness, but in Saudi Arabia, the opposite is true. This gender disparity highlights the complex relationship between cultural standards, social expectations, and mental health issues. In addition, the relationship between education and risk for mental illness reveals significant differences. Higher education tends to reduce the likelihood of mental illness in India, probably as a result of increased knowledge and coping skills among educated persons. In Saudi Arabia, however, this tendency is not found, indicating the presence of various cultural and environmental elements that shape the association between education and mental health. The findings of a deeper examination of certain mental diseases indicate remarkable patterns in connection to sociodemographic factors. The frequency of phobias in India is much greater among women than among men. Specific phobias, agoraphobia, and generalized anxiety disorder are much more frequent among Saudi females than men, demonstrating the junction

between gender norms and anxiety-related disorders. The association between male gender and substance abuse problem reveals a risk shared by both groups. The observed age-related differences in the frequency of mood disorders highlight the intricate relationship between age, culture, and psychopathology.

The inequalities in mental disorder treatment between Saudi Arabia and India are alarming. The contrast to the worldwide mean treatment gap from two decades ago, which stood at 76.2%, is essential for appreciating the depth of the issue. The results demonstrate that both Saudi Arabia and India surpass this worldwide average, showing significant inadequacies in the accessibility and usage of mental health treatments. Notable is the fact that the treatment gap in Saudi Arabia exceeds that of India, which appears a chanllenge in mental health care in Saudi Arabia. The study's finding of substance abuse disorders as a deviation from the general trend is noteworthy. The lower incidence of substance use problems in Saudi Arabia compared to India may lead to a smaller treatment gap. Despite the lower frequency of substance use disorders, the wider treatment gap for other mental disorder in Saudi Arabia highlights systemic challenges to mental health care accessibility. Notably, the lack of Saudi data for schizophrenia and other psychiatric disorders prohibits a direct comparison, highlighting the importance of collecting and analysing complete data to support the development of effective mental health interventions. In general, it seems that many factors may be responsible for the observed treatment disparity [33]. Significant supply-side hurdles in India include limited, inequitably allocated, and inefficiently used resources, high out-of-pocket expenditures, and low-quality mental health care [19]. This is improbable in Saudi Arabia, where around 4.7% of the country's GDP is spent on healthcare, although attitude obstacles [34,35] exist.

8. Conclusions and recommendations

The research findings suggest that the prevalence of psychiatric disorders and their demographic relationship vary between the Indian and Saudi Arabian populations. It is necessary to understand why such disparities arise. There might be risk factors and protective factors at play underlying these discrepancies. This may assist policymakers in establishing mental health policy priorities.

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