

Social determinants and predictors of mental health among urban slum dwellers of Haryana: A cross-sectional study

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ABSTRACT

Background: Urban slum dwellers face significant challenges, including overcrowded living conditions, inadequate access to basic necessities, and limited socio-economic opportunities, which adversely affect their mental health. Despite the high prevalence of mental health issues in slum populations, there is a dearth of research addressing this aspect of well-being. **Aim:** This study aimed to investigate the social determinants and predictors of mental health among urban slum dwellers in Rohtak, Haryana, India. **Material and Methods:** The study employed a cross-sectional design to examine mental health status and predictors among urban slum dwellers in District Rohtak, Haryana. Using simple random sampling, 301 subjects from the slum area were selected, ensuring demographic representation. A socio-demographic data sheet, the Modified Kuppaswamy scale, and the Mithila Mental Health Status Inventory were administered. **Results:** The findings revealed a moderate level of mental health challenges among urban slum dwellers, with age, gender, education, occupation, family income, and socioeconomic status identified as the strongest predictors of mental health ($F = 7.69$, $p < .001$), accounting for 29.9% of the variance. The remaining variance is attributed to variables not included in the study. **Conclusion:** This study sheds light on the social determinants and predictors of mental health among urban slum dwellers in Rohtak, Haryana, India. The findings underscore the significant impact of socio-demographic factors such as age, gender, education, occupation, family income, and socioeconomic status on mental health status.

Keywords: Urban slum, mental health, socioeconomic status, social determinants

INTRODUCTION

Urban slums are characterized by overcrowded living conditions and inadequate access to necessities of life such as clean water, sanitation, and proper housing. The lack of essential amenities in these areas poses significant challenges, contributing to high rates of physical and mental health morbidity among the slum dwellers.^[1] There is a paucity of research on the spectrum of mental well-being in urban slums, and existing knowledge about health-promotive socio-physical

environments in these areas is inadequate. Pawar et al.^[2] identified age, education, social class, family type, and socioeconomic status as the primary factors influencing disease prevalence among slum residents. Additionally, Subbaraman et al.^[3] found that low family income and challenges associated with living conditions in slums were correlated with an increased risk of mental disorders. Consequently, residents of slum areas face increased health risks, leading to heightened psychological distress among the population^[4].

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Gruebner et al.^[5] conducted a one-year cohort study and the findings of the study revealed that only 20% of the total population demonstrated good mental well-being. In 2011, 75 towns in Haryana reported the presence of slums, serving a population of 16,62,305 individuals, which constituted 2.5% of the total population. Notably, the slum population is predominantly concentrated in industrialized areas within Haryana.^[6]

Despite documented challenges faced by slum dwellers like poor living conditions and limited access to essential services, there's a gap in understanding specific predictors of mental health within these populations. Rohtak, Haryana, represents typical urban slum conditions in the region, predominantly concentrated in industrial areas. Understanding mental health predictors in Rohtak can offer insights into similar settings locally and globally. By pinpointing factors influencing mental well-being among Rohtak's slum dwellers, this study aims to inform tailored interventions addressing individual, structural, and environmental determinants. The findings can lead to evidence-based interventions enhancing mental health outcomes and overall well-being in similar slum communities. Thus, the study seeks to identify predictors of mental health among urban slum dwellers in Rohtak, Haryana, to inform targeted interventions for improving mental health outcomes in Rohtak and similar settings.

MATERIAL AND METHODS

The study employed a cross-sectional design to investigate the mental health status and its predictors among urban slum dwellers in District Rohtak, Haryana. A sample of 301 subjects residing in the slum area was selected using a simple random sampling technique, ensuring representation across various demographic characteristics within the population. The sample size was determined using the Krejcie and Morgan table for research studies. Inclusion criteria encompassed individuals providing informed consent, aged between 18-60 years of any gender, residing in the slum area, and capable of understanding Hindi language. Exclusion criteria included individuals with any other co-morbid conditions and those unwilling to provide written informed consent. The collected data were used exclusively for

research purposes, with strict adherence to ethical standards and data protection protocols. Throughout the research and data collection process, participants were assured of confidentiality in the handling of results, and their self-respect was maintained. Ethical standards as per the Helsinki Declaration guidelines were followed to ensure the ethical conduct of the study. Tools used for the study are:

1. *Socio-demographic datasheet*: Through semi-structured performance, the researcher collected information including age, gender, education, occupation, etc.
2. *Modified Kuppuswamy socio-economic status scale-2023*^[7]: Updated Modified Kuppuswamy Socio-economic Status Scale-2023 is India's most commonly and widely used socio-economic status scale in urban settings. It considers the education of the head of the family, the profession of the head of the family, and the family's total monthly income.
3. *Mithila mental health status inventory (MMHSI)*^[8]: The MMHSI is a self/clinician-report questionnaire designed to evaluate various aspects of mental health, including emotional stability, interpersonal relationships, and overall psychological well-being. The inventory comprises 50 items, each with a 5-point Likert scale ranging from "Very True" to "Completely False." Positive and negative statements are scored differently, with higher scores on the MMHSI indicating poorer mental health. The total scores can range from 50 to 250.

Statistical analysis: Data were analysed using the appropriate statistical in Statistical Package for the Social Sciences Version 23.0 (SPSS 23.0) software package

RESULTS

In this study, the largest portion of respondents were male (59.5%), with 61.1% falling into the age group of 26-35 years. A significant majority (82.4%) of participants were married. The primary occupations reported were labour work (38.2%), with none of the participants having formal education. Additionally, 69.8% had resided in their current location for less than 5 years, while 13.6% had been there for 11-15 years. A substantial number (71.4%) of participants reported using tobacco or other substances (Table 1).

Table 1 Socio-demographic characteristics of the participants (n = 301)

Variables	f	%
Age		
18-25 Years	29	9.6
26-35 Years	184	61.1
36-45 Years	64	21.3
46-60 Years	24	8.0
Gender		
Male	179	59.5
Female	122	40.5
Religion		
Hindu	301	100
Marital Status		
Unmarried	29	9.6
Married	248	82.4
Widow/Widower	24	8.0
Educational qualification		
Illiterate	301	100
Occupation		
Labourer	115	38.2
Street Vendor	108	35.9
Homemaker	78	25.9
Any ID proof		
Aadhaar Card	97	32.2
None	204	67.8
Family arrangement		
Joint Family	219	72.8
Nuclear Family	82	27.2
Family income		
Less than 5 thousand	234	77.7
5-10 thousand	50	16.6
11-15 thousand	17	5.6
Living at the same location		
Less than 5 years	210	69.8
5-10 Years	29	9.6
11-15 Years	41	13.6
16-20 Years	21	7.0
Substance Users		
Yes	215	71.4
No	86	28.6

Table 2 shows the mental health status of urban slum dwellers, indicating a moderate level of mental health challenges across all five domains for both males and females.

Table 2 Mental Health Status of participants (n = 301)

Scales	Sex	N	Mean	SD
Egocentrism	Male	179	27.11	5.86
	Female	122	27.13	5.77
Alienation	Male	179	21.21	4.55
	Female	122	21.26	4.77
Expression	Male	179	27.39	4.91
	Female	122	27.18	5.09
Emotional Unstability	Male	179	27.72	6.96
	Female	122	28.56	7.56
Social Non-conformity	Male	179	26.05	5.28
	Female	122	25.69	5.93
Total	Male	179	129.48	27.56
	Female	122	129.82	29.12

Table 3 Relationship between social determinants and mental health among adult slum dwellers

Variables	r
Age	0.246**
Education	-0.086
Religion	0.152
Marital status	0.103
Family type	0.224**
Occupation	0.169**
Family income	0.142**

**<0.01

Table 3 presents the Spearman correlation coefficients, which measure the strength and direction of the relationship between various social determinants and mental health among adult slum dwellers. Age has a positive correlation of 0.246** with mental health. There is a negative correlation of -0.086 between education and mental health. The correlation coefficient indicates a positive relationship between religion and mental health [0.152]. There is a positive but weak relationship between marital status and mental health [0.103]. The family type has a moderate positive correlation of 0.224** with mental health. There is a positive correlation of 0.169** between occupation and mental health. This suggests that certain occupations may contribute to better mental health outcomes among adult slum dwellers. There is a positive relationship between family income and mental health [0.142**].

Table 4a Predictors of mental health among urban slum dwellers

Model Fit Measures				Overall Model Test			
Model	R	R ²	Adjusted R ²	F	df1	df2	p
1	0.458	0.209	0.182	7.69	10	290	< .001

Table 4b

ANOVA Test					
	Sum of Squares	df	Mean Square	F	p
Age	592.93	1	592.93	11.1623	0.001
Gender	579.89	1	579.89	10.9169	0.001
Religion	71.74	1	71.74	1.3505	0.246
Marital status	158.32	1	158.32	2.9805	0.085
Education	263.05	1	263.05	4.9522	0.027
Occupation	1031.32	1	1031.32	19.4154	0.001
Family type	23.58	1	23.58	0.4439	0.506
Family income	205.63	1	205.63	3.8711	0.050
Socio-economic status	216.87	1	216.87	4.0827	0.044
Residuals	15404.43	290	53.12		

Table 4c

Predictor	Estimate	SE	95% Confidence Interval		t	p	Stand. Estimate
			Lower	Upper			
Intercept	148.7938	12.476	124.24	173.349	11.926	< .001	
Age	3.4631	1.037	1.42	5.503	3.341	< .001	
Gender	-4.6946	1.421	-7.49	-1.898	-3.304	0.001	
Religion	2.0613	1.774	-1.43	5.552	1.162	0.246	
Marital status	-1.9070	1.105	-4.08	0.267	-1.726	0.085	
Education in years	-3.3629	1.511	-6.34	-0.389	-2.225	0.027	
Occupation	3.8057	0.864	2.11	5.506	4.406	< .001	
Family type	1.1294	1.695	-2.21	4.465	0.666	0.506	
Family income	-1.7329	0.881	-3.47	-0.0078	-1.968	0.050	
Socio-economic status	-4.4648	2.210	-8.81	-0.116	-2.021	0.044	

A regression analysis to explore the predictors of mental health among urban slum dwellers. The findings of the study show that age ($t = 3.341$, $p = 0.01$), gender ($t = -3.304$, $p = 0.001$), education ($t = -0.389$, $p = 0.027$), occupation ($t = 4.406$, $p = 0.001$), family income ($t = -1.968$, $p = 0.05$), and socioeconomic status ($t = -2.021$, $p = 0.044$) were the strongest predictors of mental health ($F = 7.69$, $df = 10,290$, $p < .001$), accounting for 29.9% of the variance. The remaining 70.1% of the variance is attributed to variables not included in the study (Table 4 a, b & c).

DISCUSSION

The findings of this study underscore the complex interplay between various social

determinants and mental health outcomes among urban slum dwellers in Rohtak City.

Significant associations were observed between age, gender, education, occupation, family income, socio-economic status, and mental well-being within this population. Age emerged as a noteworthy predictor of mental health, with older individuals exhibiting slightly higher levels of mental health issues. Factors such as increased social isolation, declining physical health, and limited access to healthcare services could contribute to higher rates of mental health issues among older individuals in slum communities. Patel and Kleinman^[9] emphasize the heightened vulnerability of aging populations in urban slums to mental health challenges, reinforcing this finding.

Gender also played a crucial role in predicting mental health outcomes, with males demonstrating marginally lower levels of mental health challenges compared to females. This gender disparity could be attributed to sociocultural factors such as differential societal expectations and access to resources. Studies by Abdi et al.^[4] and Lund et al.^[10] have documented similar gender disparities in mental health outcomes among urban slum dwellers, supporting this observation.

Furthermore, education emerged as a protective factor against mental health problems, with higher levels of education associated with slightly better mental well-being. Lund et al.^[10] and Patel^[11] also found similar associations between education and mental health outcomes among urban slum populations, further supporting this finding.

Occupation and family income were also significant predictors of mental health, with individuals engaged in more stable and economically secure occupations reporting better mental health outcomes. This highlights the critical role of financial stability and employment opportunities in shaping mental well-being in urban slum settings. De Silva et al.^[12] emphasized the importance of stable employment and financial security in promoting mental health among urban slum populations, supporting this finding.

Moreover, socioeconomic status emerged as a robust predictor of mental health, with higher socio-economic status individuals demonstrating better mental well-being. Pawar et al.^[2] conducted a study and found statistically significant associations between depression and factors such as gender, marital status, education, occupation, socioeconomic status, family type, living arrangement, smoking habits, and the recent loss of close relatives, further supporting this finding.

Overall, the findings of this study align with existing research on social determinants of mental health among urban slum dwellers, emphasizing the importance of addressing socio-economic disparities and promoting education and employment opportunities to improve mental well-being in these marginalized populations. By understanding and addressing these socio-demographic factors, tailored interventions can be

developed to mitigate mental health disparities and enhance overall well-being in urban slum communities like Rohtak, Haryana.

Limitations

Despite the valuable insights provided by this study, several limitations warrant consideration. Firstly, the cross-sectional design employed in this study precludes the establishment of causal relationships between social determinants and mental health outcomes. Future research utilizing longitudinal or experimental designs could provide more robust evidence regarding the causal pathways linking social determinants to mental well-being in urban slum settings. Additionally, the study focused exclusively on assessing the social determinants and mental health of slum dwellers. Including other psychological determinants could have provided a more comprehensive understanding of the factors influencing mental health in this population.

Implications

Despite these limitations, our findings have several implications for policy and practice aimed at promoting mental health among urban slum dwellers. Firstly, interventions targeting socio-economic disparities, such as income-generation programs and access to affordable housing, are crucial for addressing the structural determinants of mental health in urban slum settings. Additionally, efforts to enhance mental health literacy and access to culturally sensitive mental health services are essential for addressing the unique mental health needs of urban slum populations. Community-based interventions, such as peer support groups and psychosocial counselling services, can play a vital role in fostering social cohesion and resilience within urban slum communities.

Moreover, collaboration between government agencies, non-profit organizations, and community stakeholders is essential for developing holistic and sustainable approaches to mental health promotion in urban slum settings. By addressing the multifaceted determinants of mental health, we can work towards creating healthier and more equitable urban environments for all residents.

CONCLUSION

This study sheds light on the social determinants and predictors of mental health among urban slum dwellers in Rohtak, Haryana, India. The findings underscore the significant impact of socio-demographic factors such as age, gender, education, occupation, family income, and socioeconomic status on mental health. Interventions aimed at addressing these factors may help alleviate the burden of mental health issues in vulnerable populations.

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Conflicts of interest

There are no conflicts of interest.

Ethical considerations

The Institutional Ethical Committee of Pt B.D. Sharma UHS, Rohtak approved this study. Ethical certificate [No. BREC/24/104]

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