

Prevalence and Correlates of Mental Health Stigma among Pakistani Adolescents and Young Adults

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Stigma significantly hinders the effective management of mental illness in Pakistan, particularly among adolescents and young adults. Given that stigmatizing beliefs can vary across different socioeconomic and demographic groups, it is crucial to study these variations within the Pakistani context, as most existing empirical evidence comes from Western contexts. This paper aims to investigate the prevalence of stigmatizing attitudes and explore the relationship between the socioeconomic and demographic characteristics of adolescents and young adults and their personal and perceived public stigmatic attitudes towards mental illness in Pakistan. A cross-sectional survey was conducted with 1328 adolescents aged 15-24 from twelve public colleges in Layyah. The survey assessed personal and perceived public stigmatic attitudes using instruments that measure social distancing, stigma beliefs, and services stigma. Descriptive statistics and Multiple Classification Analysis (MCA) were employed to evaluate differences in mean scores and determine the statistical significance of the observed variations in the scales. The findings indicate that nearly half of the participants perceived a high level of public social distancing, reflecting a prevalent sense of social avoidance among adolescents in Pakistan. Similarly, a substantial portion exhibited stereotypical attitudes towards mental illness, both personally and publicly. Notably, over 40% of the participants displayed stigmatizing attitudes toward utilizing professional psychiatric services. Factors such as gender, residential area, and father's occupation significantly influenced these attitudes, with females, rural residents, and children of farmers experiencing heightened stigma. The study underscores the discrepancy between perceived public and personal stigmatic attitudes, reveals high levels of stigma associated with using professional psychiatric services, and illustrates variation in attitudes by socioeconomic and demographic factors.

Keywords: mental illness, mental health stigma, gender, socioeconomic characteristics, adolescents, young Adults, personal and Perceived Public Stigma.

Adolescence, a critical transition stage, involves significant changes that affect mental well-being (Orben et al., 2020). Societal norms influence adolescents' values, and misconceptions about mental illness lead to internalized shame (Husain et al., 2020). Understanding stigma is essential for designing studies on societal attitudes toward mental illness in Pakistani youth.

Mental illness among adolescents and young adults is a significant public health concern in Pakistan, a country with one of the highest proportions of youth (Pasha, 2023). Adolescents make up 20% of the population (UNODC, 2022) and face mental health stigma from socioeconomic disparities, violence, and discrimination. However, comprehensive data on their mental health is lacking. A study in Karachi found that 20% of adolescents suffer from psychiatric problems (Farooq et al., 2023), with anxiety and depression being the most common (Bibi et al., 2020). Pakistan's mental health infrastructure is inadequate (WHO, 2017), and stigma deters individuals from seeking help (Ahmad & Konecso, 2022).

In Pakistan, societal pressure from '*log kya kahenge*' (What will people say?) (Abidi, 2021) reflects stigma and fosters discrimination and prejudice. This leads to pessimism and viewing mental illness as dangerous and incurable.

Labelling mental illness as dangerous triggers adverse societal reactions, hindering social integration and causing isolation (Kilian et al., 2021; Ran et al., 2021).

Stigma in Pakistani Adolescents

Stigma is a set of discriminatory attitudes that isolate individuals, associating them with moral transgressions and limiting their community life (Minhas et al., 2015). It manifests as perceived public stigma, the negative beliefs held by the public, and self-stigma, where individuals internalize these beliefs. Both forms involve stereotypes, prejudice, and discrimination. Stereotypes are socially constructed notions, prejudice is a cognitive response, and discrimination is the resulting behaviour (Corrigan & Watson, 2002).

Mental health stigma includes negative societal attitudes (Colman et al., 2021) and significant barriers to seeking psychiatric services, known as ‘services stigma’ (Rüsch et al., 2010). Studies on Pakistani youth reveal prevalent stigma due to limited mental illness education and misconceptions about the causes of mental illness. Poverty and religious beliefs also contribute to stigmatizing behaviour (Farooq et al., 2023).

Religion influences mental illness perceptions, offering comfort but potentially fostering stigma by linking mental illness to moral failings, affecting treatment choices and access to care. Understanding this dual impact is crucial for culturally appropriate mental health strategies. Mental illnesses are often seen as curses or divine punishment (Ahmad & Koncsol, 2022; Anriani et al., 2022). Stigma views individuals with mental illness as dangerous, less intelligent, and aggressive.

While religious and spiritual beliefs shape attitudes towards mental illness, there is a lack of research on how socioeconomic and demographic factors relate to mental health stigma among Pakistani adolescents and young adults. Recognizing these factors is essential for understanding population diversity, identifying health disparities, and developing tailored interventions.

Socioeconomic and demographic characteristics and stigma

Area deprivation highlights how socioeconomic and demographic factors shape health behaviours and attitudes towards mental illness (Ingram et al., 2019; Guerin, 1994). Socioeconomic disparities, such as poverty and lack of education, exacerbate stigma and barriers to mental illness care (Mohan & Barlow, 2023; Shafiq, 2020). Adolescents and young adults from disadvantaged backgrounds face restricted access to mental health professionals, increasing their vulnerability to psychological issues and reinforcing stigmatizing attitudes due to misconceptions and stereotypes (Tseliou & Ashfield-Watt, 2022).

In Pakistan, mental illnesses are more pronounced among adolescents and young adults in socially deprived areas compared to urban centers. Lower parental education and socioeconomic status contribute to stigmatizing attitudes. Individuals with lower education and income, or those facing unemployment or homelessness, are more likely to encounter stigma and discrimination (Husain et al., 2020).

Limited psychiatric services in Pakistan, especially in rural or deprived areas, make mental illness care costly and inaccessible. Consequently, individuals from lower socioeconomic backgrounds often resort to traditional healing methods due to the inaccessibility and unaffordability of formal psychiatric services (Begum et al., 2020). This reliance on traditional healing underscores the barriers faced by socioeconomically disadvantaged groups in accessing formal mental illness care.

Gender Differences

Gender norms significantly affect mental health in Pakistan. Women face double stigma from societal expectations and mental illness, leading to harsher judgment and discrimination, while men often underreport issues due to norms of stoicism (Akbar & Ghazal, 2023; Sherazi et al., 2023). Addressing these gender-specific challenges is crucial for tackling mental health stigma among Pakistani youth.

A study highlights that individuals from lower sociodemographic groups who also face mental illness experience higher levels of discrimination. This intersectional approach emphasizes the need to consider multiple identity and disadvantage factors, such as gender, socioeconomic status, and education, in addressing mental health stigma in Pakistan (Perry et al., 2022).

Research Gap

Our study represents a novel endeavour in examining mental health stigma among adolescents and young adults in Pakistan. For over two decades, the debate surrounding mental illness and stigma has been prominent in

Pakistan. However, there remains a significant lack of reliable data that specifically addresses the prevalence of mental health stigma among adolescents and young adults (Begum et al., 2022). The majority of the available literature in Pakistan has concentrated on the perspective of healthcare practitioners, medical students, and patients, with a focus primarily on stigma associated with specific disabilities within hospital settings. This approach limits the understanding of stigma in the broader societal context. Despite the prevalence of mental health discussions, a notable void exists in the exploration of stigma among adolescents and young adults. A meta-analysis by Choudhry et al., (2023) underscores this gap, indicating that in the past two decades, only a handful of empirical studies have specifically investigated the prevalence of stigma related to mental illness, thus leaving a significant aspect of Pakistani society understudied. In addressing these gaps, our study provides a comprehensive analysis of the prevalence and characteristics of mental health stigma among adolescents and young adults in Pakistan. By expanding the focus beyond the clinical setting to include the societal perspective, we aim to enrich the understanding of mental health stigma in this crucial demographic segment, thus offering new insights and contributing to the broader discourse on mental health in Pakistan.

Aim

Given the context, we aim to explore the prevalence of stigmatic attitudes towards mental illness and to describe the association between various sociodemographic characteristics such as gender, residential area, family system, parents' education and occupation, and personal and perceived public mental health stigmatic attitudes of adolescents and young adults in Layyah, Punjab, Pakistan.

Method

Study Setting and Design

This study utilized data from a cross-sectional survey conducted in Layyah, northeast Pakistan, which has a population of 1.824 million (PBS, 2021).

To investigate mental health stigma, clinical vignettes depicting two students with identical depression symptoms (see Appendix A) but different genders were employed. These vignettes provide a standardized framework for examining mental health stigma by presenting realistic scenarios. This method enhances the reliability of findings and facilitates cross-sectional comparisons, offering a comprehensive understanding of mental health stigma (Poulou, 2001). The vignettes were randomly distributed among students, and the entire questionnaire, including the vignettes, was translated into Urdu with the assistance of a local language expert and validated by an academician teaching Sociology in Pakistan.

Sampling

The study targeted public college students aged 15 to 24, as these institutions typically have larger enrolments due to low fees and serve lower socioeconomic classes. At the time of the survey, the total enrolment in public colleges in Layyah was 23664, comprising 12869 male (54.38%) and 10795 female (45.62%) students. A consolidated enrolment list was obtained from the deputy director of colleges in Layyah. A multistage cluster sampling technique was employed to select participants. In the first stage, colleges were purposely selected based on their higher enrolment levels from the total number of public colleges in Layyah. In the second stage, classes within these colleges were randomly chosen. Finally, students from the selected classes were invited to participate in the study. A total of 1800 students (1300 higher secondary and 500 BS level) from 12 colleges (4 from each tehsil) were invited to participate, with 1450 agreeing, resulting in a response rate of 80.5%. After excluding 122 poor-quality questionnaires, the final analysis included 1328 students. Data collection occurred in a classroom setting.

Assessments/Measurements

Our study utilized a questionnaire from the "Red Nose: Stigma Project" (Saelens et al., 2024), originally designed for Flemish adolescents, to measure participants' perceptions and attitudes towards mental illness and stigma.

Data Collection Procedure

Data were collected between November 2021 and February 2022. Ethical approval was granted by Ghent University's ethical committee, and formal permission was obtained from the Assistant Director of Colleges in Layyah. Written consent was obtained from all participants.

Variables

Dependent Variables

The study assessed personal and perceived public stigma using the Social Distance Scale, Stigma Beliefs Inventory, and Service Stigma Scale, all translated into Urdu (see Table II supplementary material).

Social Distance Scale: This 6-item scale, from the “Stigma in Global Context – Mental Health Study” (Pescosolido et al., 2013), measured social distancing attitudes on a 5-point Likert scale from ‘No, definitely not’ to ‘Yes, definitely.’ It included four positive items (scored in reverse) and two negative items, with Cronbach’s alpha of 0.87 for personal social distance and 0.89 for perceived public social distance.

Stigma Beliefs Inventory: This 5-item scale assessed stereotypical beliefs, with four items from the Eurobarometer 64.4 and one additional item (i.e., danger to oneself) (Evans-Lacko et al., 2012). Responses were on a 5-point Likert scale, with higher scores indicating stronger stigmatizing attitudes. Cronbach’s alpha was 0.78 for personal stigma and 0.74 for perceived public stigma beliefs.

Service Stigma Scale: Developed by Martin et al., (2007), this 3-item scale measured stigma related to psychiatric service use, with responses on a 5-point Likert scale. Higher scores indicated higher stigma, with a Cronbach’s alpha of 0.56.

In Table 2, the percentages were derived by combining 'yes, definitely' and 'yes, probably' responses to indicate agreement with the statements, helping to identify stigmatic attitudes among adolescents and young adults. The cutoff mean scores were set at 15 for social distancing, 13 for stigma beliefs, and 8 for service stigma, representing the points where 50% of participants lean towards stigmatic attitudes in each category.

Independent Variables

Socio-demographic characteristics assessed included gender, residential area, religious attachment, parents' education, father’s profession, and age categorized into adolescents (15-17) and young adults (18-24 years).

Control Variables

The study controlled for family system (nuclear, joint, extended), housing type (own, rented), and housing situation (*Kacha*, *Semi-pakka*, *Pakka*) to predict the association between socioeconomic and demographic characteristics and stigmatic attitudes.

Analysis

Socio-demographic characteristics were described using frequencies and percentages (Table 1). Descriptive statistics of stigmatic attitudes are in Table 2. Multiple classification analysis (MCA) evaluated associations among variables, with adjusted mean values and p-values in Table 3. Significance levels were set at 0.05, 0.01, and 0.001. Data analyses were performed using SPSS 27.0.

Results

The socioeconomic and demographic characteristics of the adolescents and young adults in the study sample provide insights into the context within which mental health stigma is examined. The majority of participants were aged 18-24 years (56.7%), predominantly male (55.1%), from rural areas (49.3%), and belonged to nuclear families (62.8%). Additionally, a large proportion of participants expressed strong religious attachment (80.1%).

Regarding economic factors, a substantial portion of the sample owned their house (93.4%) and resided in *Pakka* (cemented) houses (67.8%). The father's education level was up to the 10th grade for 55.5% of participants, while 45.0% reported that their mothers had no formal education. Furthermore, farming was a major source of livelihood, with 38.3% of participants falling into this category (Table 1).

Table 1

Socioeconomic and demographic characteristics of adolescents and young adults (N=1328)

Characteristics		N	%
Demographic Information			
Age	Adolescents (15-17)	575	43.3
	Young Adults (18-24)	753	56.7
Gender	Male	732	55.1
	Female	596	44.9
Residential Area	Rural	655	49.3
	Semi-Urban	330	24.8
	Urban	343	25.8
Religious attachment	Not Strong	122	9.2
	Moderate	142	10.7

	Strong	1064	80.1
	Nuclear	834	62.8
Family System	Joint	324	24.4
	Extended	170	12.8
Socioeconomic Situation			
	No education	264	19.9
Father's Education	Schooling Up to 10 th Grade	737	55.5
	Schooling Up to 12 th Grade	159	12.0
	Some University education	168	12.7
	No education	597	45.0
Mother's Education	Schooling Up to 10 th Grade	593	44.7
	Schooling Up to 12 th Grade	68	5.1
	Some University education	70	5.3
	Self-employed	295	22.2
Father's Profession	Farmer	508	38.3
	Government Job	224	16.9
	Private Job	109	8.2
	Working on daily wages	192	14.5
Housing Type	Own House	1241	93.4
	Rented House	87	6.6
	Kacha (Adobe, made of clay/mud)	82	6.2
Housing Situation	Semi Kacha (walls are coated by cement and floor is of clay/mud)	345	26.0
	Pakka (Cemented)	901	67.8

n=number of observations, %=percentage

Table 2

Description of personal and perceived public stigma attitude in adolescents and young adults (N=1328)

Descriptives	Stigma				Services
	Personal		Perceived Public		
	Social Distance	Stigma Beliefs	Social Distance	Stigma Beliefs	
N (%)	328 (24.7)	706 (53.2)	600 (45.2)	671 (50.7)	563 (42.4)
Mean	14.43	15.94	18.11	15.41	9.06
SD	6.71	4.89	6.87	4.80	2.80
Minimum	6.00	5.00	6.00	5.00	3.00
Maximum	30.00	25.00	30.00	25.00	15.00
Range	24.00	20.00	24.00	20.00	12.00

The study revealed high levels of stigmatizing attitudes among participants, encompassing both personal and perceived public stigma. However, some interesting differences emerged. Firstly, a higher prevalence of perceived public social distancing was observed compared to personal social distancing attitudes, with about half of the participants reporting perceived public social distancing. Secondly, variations were identified in stigmatic beliefs. For instance, over half of the participants held stereotypical attitudes towards mental illness. For perceived public stigma, participants believed that 53.2% of people in society exhibited stereotypical attitudes towards mental illness. Thirdly, participants displayed a high stigmatic attitude towards service stigma, with around 42.4% expressing a stigmatic attitude if they knew someone at their college was receiving treatment for mental illnesses (Table 2).

Table 3 presents the mean differences among adolescents and young adults based on their socioeconomic and demographic groups. We calculated the mean scores for each scale used in this study (Table I in the supplementary section).

Furthermore, the results from the multiple classification analysis (MCA) revealed variations in mental health stigma based on socioeconomic and demographic groups of adolescents and young adults. Significant differences were observed in perceived social distancing attitudes for mental illness. A higher prevalence of perceived public social distancing attitudes was noted among female adolescents and young adults. Residents of rural areas also reported higher

levels of perceived public social distancing, along with participants whose fathers were engaged in farming. Adolescents and young adults whose mothers had a higher education level reported more perceived social distancing attitudes.

Table 3
Mean difference by socioeconomic and demographic groups of adolescent and young adult’s personal and perceived public stigma attitude ($N=1328$)

Characteristics	Personal		Stigma		Services Stigma	
	Social Distance	Stigma Beliefs	Perceived Public Social Distance	Stigma Beliefs		
Demographic Information						
Age	Adolescents (15-17)	2.38	3.19	3.05	3.14	3.00
	Young Adults (18-24)	2.42	3.19	3.00	3.04	3.04
Gender	Male	2.29*	3.12*	2.89***	2.94***	3.03*
	Female	2.54*	3.27*	3.17***	3.26***	3.01*
Residential Area	Rural	2.64***	3.31***	3.10***	3.17***	3.14***
	Semi-Urban	2.20***	3.26***	3.08***	3.05***	2.99***
	Urban	2.15***	2.88***	2.80***	2.95***	2.82***
Religious attachment	Not Strong	2.54	3.16	3.16*	3.26*	3.10
	Moderate	2.39	3.18	3.02*	2.99*	2.98
	Strong	2.39	3.19	3.00*	3.07*	3.02
Socioeconomic Situation						
Father’s Education	No education	2.40**	3.25***	3.04	3.14	3.19***
	Schooling Up to 10 th Grade	2.40**	3.20***	3.03	3.12	2.98***
	Schooling Up to 12 th Grade	2.50**	3.19***	3.06	3.00	2.94***
	Some University education	2.34**	3.03***	2.89	2.91	3.00***
Mother’s Education	No education	2.44	3.18	3.06**	3.06**	3.03
	Schooling Up to 10 th Grade	2.40	3.19	2.98**	3.07**	2.99
	Schooling Up to 12 th Grade	2.25	3.19	2.72**	2.99**	2.95
	Some University education	2.27	3.21	3.26**	3.47**	3.26
Father’s Profession	Self-employed	2.28***	3.15***	2.78***	3.06	2.83***
	Farmer	2.65***	3.33***	3.25***	3.13	3.18***
	Government Job	2.13***	2.91***	2.83***	3.08	2.84***
	Private Job	2.25***	3.13***	2.65***	3.04	3.01***
	Working on daily wages	2.38***	3.22***	3.21***	3.01	3.11***

Not significant, $P \leq *0.05$, $**0.01$. $***0.001$

Regarding personal stigma beliefs, it was evident that personal stereotypical attitudes towards mental illness were more prevalent in the study sample, as presented in Table 3. The data identified higher personal stigma beliefs among female participants. Higher levels of personal stigma beliefs were noted in the rural sample, with the highest mean score for personal stigma beliefs reported by adolescents and young adults whose fathers worked in farming.

Interestingly, perceived public stigmatic beliefs were primarily reported by participants whose mothers had attained some university-level education. Participants with lower religious attachment were more prone to perceived public stigma beliefs (Table 3).

Moreover, service stigma was more prevalent among male participants. Stigma related to acquiring mental health services was highest among participants residing in rural areas and whose fathers had a lower level of education. Adolescents and young adults whose fathers were engaged in farming displayed higher stigmatic attitudes towards service stigma (Table 3).

Discussion

This descriptive study investigated personal and perceived public stigmatic attitudes toward mental illness among college adolescents and young adults in Layyah, Punjab, Pakistan. Using a cross-sectional survey with clinical vignettes, the study explored the non-clinical population's approach to mental illness. By focusing on college students, an understudied group in Pakistan, and using culturally adapted, standardized tools, the study added rigor and internal consistency to measuring stigmatic attitudes. Notably, this is the first study to translate the social distance, stereotypical attitudes, and services stigma scales into Urdu.

However, the study has limitations. The vignettes focused only on depression symptoms, limiting the generalizability to individuals with multiple or more severe mental illnesses, such as psychotic disturbances (Sai & Furnham, 2013). Therefore, while our findings enhance understanding of stigma associated with depression, further research is needed to explore stigma in more severe mental health conditions. Selective dropout introduced bias, potentially skewing our results and reducing representativeness. The impact of the pandemic may have also altered participants' perceptions and experiences of stigma, potentially increasing anxiety and mental illness, or changing societal attitudes toward mental illness. This is a critical limitation to consider. Lastly, the self-reported nature of stigma is susceptible to socially desirable answers, particularly among college students, reflecting societal norms.

Personal and Perceived Public Social Distancing

Our analysis found differences in reporting personal and perceived public social distancing among adolescents and young adults. The sample showed higher perceived public social distancing towards mental illness than personal social distancing. This may be due to students' affiliation with different social strata, with younger cohorts being more aware of ethical norms surrounding mental illness. These findings align with the "Red Nose: Stigma Project" in the Flemish context, which also observed higher public social distancing compared to personal stigma (Saelens et al., 2024). Female adolescents and young adults reported significantly higher perceived public social distancing attitudes. This aligns with Zolezzi et al., (2018), who found that women face higher perceived social distancing due to stereotypes casting mental illness as shameful and embarrassing, leading to societal stigmatization and marriage challenges in Pakistan.

Variations were also found based on residential area and father's profession. Adolescents from rural areas reported greater perceived public social distancing, likely due to limited awareness and the absence of psychiatric services (Jones-Bitton et al., 2020). Participants with fathers engaged in farming reported higher perceived public social distancing, influenced by traditional beliefs and lack of mental health awareness in rural farming communities (Park et al., 2019).

Personal and Perceived Public Stigma Beliefs

Our study revealed that over half of the adolescents and young adults reported personal stigma beliefs. These findings align with other Pakistani (Naeem et al., 2006) and western studies (Bracke et al., 2019), highlighting the predominance of personal stigma over perceived public stigma. Young females exhibited higher personal stigma, likely due to associations of mental illness with shame and guilt, leading to isolation and hopelessness. Gender-based discrimination in Pakistan exacerbates these challenges, contributing to low self-confidence and societal pressure.

Additionally, participants from rural areas and those with fathers involved in farming reported higher stereotypical attitudes, likely due to a lack of understanding of mental illnesses and cultural beliefs fostering negative self-image and low self-esteem (Ahmad & Koncsol, 2022).

An interesting finding of the study was that the perceived public stigmatic beliefs were predominantly reported by participants whose mothers had attained some level of university education. Adolescents and young adults with well-educated mothers might encounter different cultural and social norms and values compared to those whose mothers have lower levels of education. These well-educated mothers typically hold progressive views and are more inclined to openly discuss mental illness with their children, promoting awareness and encouraging them to seek necessary help. While this can be beneficial in reducing stigma, seeking help might cast negative consequences on them and their families. Additionally, participants with no religious beliefs reported more perceived public stigma than others because they are a minority themselves. Once again, no study was found to substantiate this claim. Nevertheless, various factors, such as lack of moral guidance, isolation, and lower community involvement, could partially support our assertion.

Services Stigma

The study found that over half of the adolescents and young adults reported service stigma when someone they knew was receiving psychiatric treatment. These findings align with a study among Asian Americans in the U.S., highlighting limited access to mental health services as a factor in fostering misconceptions and stigma (Pedersen & Paves, 2014). The taboo surrounding mental illness exacerbates negative perceptions and stigmatizing attitudes.

Stigma related to mental illness was prevalent among females, rural residents, and adolescents from farming families, consistent with research from various countries. For example, Ribeiro et al., (2023) found stigma among young women in the UK, and Chan et al., (2016) reported stigmatic attitudes among highly educated young females in China. This research highlights that stigma persists among adolescents and young adults due to deprivation and inequitable resource distribution.

Study Implications

The findings of this study offer several important implications for understanding and addressing mental health stigma among adolescents and young adults in Layyah, Punjab, Pakistan.

Targeted Policy Interventions: This study highlights a higher prevalence of stigma among adolescents and young adults, particularly among females, rural residents, and those from farming families. This reflects the influence of patriarchy (Latif, 2021), unequal resource distribution (Shah et al., 2022), and poverty (Insan et al., 2022) in Pakistan. This underscores the need for policy interventions to ensure psychiatric services at the Basic Health Unit (BHU) level. Integrating these services into primary healthcare can increase accessibility and help normalize mental health care, reducing stigma.

Awareness Raising: The discrepancy in reporting stigma, especially in perceived public social distancing and personal stigma beliefs, highlights the need for awareness initiatives. Integrating mental health awareness into college curricula can reduce societal stigma and improve mental well-being among adolescents and young adults.

Conclusion

It is evident that personal, perceived public, and service stigma towards mental illness were present among adolescents and young adults. Socioeconomic and demographic characteristics, such as gender, residential area, religious attachment, mother's education, and father's occupation, were significantly associated with mental health stigmatic attitudes. However, we noted some variations in personal and perceived public stigmatizing attitudes. Personal stigma beliefs and perceived public social distancing were noticeable in females and participants whose fathers were employed in farming. Additionally, higher perceived public stigmatic beliefs were particularly evident in participants whose mothers had attained some level of university education, and in participants with no religious beliefs. Higher service stigma was reported by participants from rural areas. These findings could offer valuable and practical clues into the prevalence of stigma in socially disadvantaged groups. Based on this information, targeted and collaborative strategies can be formulated to reduce mental health stigma.

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Appendix A: Example Vignette of Ali/Ayesha

The vignettes of student(s) indicating signs of mental health illness was as follows: Ayesha/Ali is a 19-year-old girl/boy. She/He is living with her/his parents in a village. She/He has been sad for the last couple of days. She/He has abandoned her/his usual routine of going to college, attending classes, playing games with friends, and following scheduled activities. She/He stopped seeing her/his friends. She/He wakes up in the morning with a passive feeling and remains sad all day.

She/He has lost interest in the surroundings and does not enjoy anything that she/he normally does. She/He does not want to go to college and tries to stay alone every time. She/He becomes sensitive and gets annoyed easily.

She/He finds it difficult to concentrate on her/his studies. Even the easiest topics are difficult for her/him to memorize. Her/His position and the marks are dropping day by day in the class. Ayesha/Ali finds it difficult to execute normal tasks and life for her/him became meaningless. She/He develops a negative approach towards everything as she/he always tries to criticize everything. She/He feels worthless and guilty.

Although Ayesha/Ali feels tired all the time, she/he has trouble sleeping at night. Her/His behavior is unusual for her/his family. Her/His family has noticed that Ayesha/Ali is barely eating and has lost weight. Her/His family and friends are worried about her/him.

Appendix B:

Table I

Personal and perceived public stigma attitude in adolescents and young adults (N=1328)

Scales	Statements	No, Definitely not	No, Probably Not	Neutral	Yes Probably	Yes Definitely	M	SD
		f (%)	f (%)	f (%)	f (%)	f (%)		
Personal Stigma								
Social Distance								
	I would use nicknames	552 (41.6)	324 (24.4)	114 (8.6)	205 (15.4)	133 (10.0)	2.28	1.39
	I would not have lunch with Ali/Ayesha.	227 (17.1)	417 (31.4)	188 (14.2)	176 (13.3)	320 (24.1)	2.96	1.45
	I would laugh at Ali/Ayesha if they were not there.	665 (50.1)	268 (20.2)	96 (7.2)	175 (13.2)	124 (9.3)	2.12	1.39
	I would not invite Ali/Ayesha to play games.	519 (39.1)	326 (24.5)	100 (7.5)	180 (13.6)	203 (15.3)	2.41	1.49
	I would not suggest doing combine study with Ali/Ayesha.	544 (41.0)	317 (23.9)	114 (8.6)	170 (12.8)	183 (13.8)	2.35	1.46
	I could not become close friends with Ali/Ayesha.	556 (41.9)	322 (24.2)	102 (7.7)	172 (13.0)	176 (13.3)	2.31	1.45
Stigma Beliefs								
	I would think that the Ali/Ayesha ...							
	... danger to oneself	192 (14.5)	240 (18.1)	154 (11.6)	489 (36.8)	253 (19.1)	3.28	1.35
	... danger to others	144 (10.8)	361 (27.2)	248 (18.7)	383 (28.8)	192 (14.5)	3.09	1.25
	... unpredictable his/her reactions	140 (10.5)	221 (16.6)	293 (22.1)	478 (36.0)	196 (14.8)	3.28	1.21
	... owes the problem to him/herself	128 (9.6)	189 (14.2)	253 (19.1)	510 (38.4)	248 (18.7)	3.42	1.22
	... cannot overcome these problems	196 (14.8)	275 (20.7)	154 (11.6)	419 (31.6)	284 (21.4)	3.24	1.38
Perceived Public Stigma								
Social Distance								
	They would use nicknames	311 (23.4)	288 (21.7)	127 (9.6)	394 (29.7)	208 (15.7)	2.93	1.44
	They would not have lunch with Ali/Ayesha.	112 (8.4)	333 (25.1)	250 (18.8)	248 (18.7)	385 (29.0)	3.35	1.35
	They would laugh at Ali/Ayesha if they were not there.	346 (26.1)	194 (14.6)	186 (14.0)	414 (31.2)	188 (14.2)	2.93	1.44
	They would not invite Ali/Ayesha to play games.	213 (16.0)	402 (30.3)	150 (11.3)	262 (19.7)	301 (22.7)	3.03	1.43
	They would not suggest doing combine study with Ali/Ayesha.	274 (20.6)	356 (26.8)	146 (11.0)	240 (18.1)	312 (23.5)	2.97	1.49
	They could not become close friends with Ali/Ayesha.	293 (22.1)	333 (25.1)	170 (12.8)	261 (19.7)	271 (20.4)	2.91	1.46
Stigma Beliefs								
	Other students at my college would think that the Ali/Ayesha ...							
	...danger to oneself	249 (18.8)	278 (20.9)	150 (11.3)	437 (32.9)	214 (16.1)	3.07	1.39
	...danger to others	366 (27.6)	193 (14.5)	250 (18.8)	340 (25.6)	179 (13.5)	2.83	1.42
	...unpredictable his/her reactions	215 (16.2)	177 (13.3)	331 (24.9)	410 (30.9)	195 (14.7)	3.15	1.29
	...owes the problem to him/herself	211 (15.9)	115 (8.7)	232 (17.5)	506 (38.1)	264 (19.9)	3.37	1.33
	...cannot overcome these problems	313 (23.6)	206 (15.5)	219 (16.5)	351 (26.4)	239 (18.0)	3.00	1.44
Services Stigma								
If the students at my college knew that the person(s) in vignette(s) was treated by a psychiatrist								
	it would matter to them.	108 (8.1)	241 (18.1)	194 (14.6)	457 (34.4)	328 (24.7)	3.49	1.26
	they would avoid him/her	184 (13.9)	444 (33.4)	214 (16.1)	351 (26.4)	135 (10.2)	2.86	1.24
	they would drop him	283 (21.3)	410 (30.9)	203 (15.3)	269 (20.3)	163 (12.3)	2.71	1.33

f=frequency, %=percentage, M=Mean, SD=Standard Deviation

Supplementary Material

Table I. Sociography, factor Summary and Goodness of fit model of adolescents personal and perceived public stigmatic attitude (N=1328)

Characteristics		Stigma									
		Personal				Perceived Public				Services Stigma	
		Social Distance		Stigma beliefs		Social Distance		Stigma beliefs		OM	β
		OM	β	OM	β	OM	β	OM	β	OM	β
Mean		2.40		3.19		3.02		3.08		3.02	
SD		1.12		0.98		1.15		0.96		0.93	
Minimum		1.00		1.00		1.00		1.00		1.00	
Maximum		5.00		5.00		5.00		5.00		5.00	
Range		4.00		4.00		4.00		4.00		4.00	
Demographic Information											
Age	Adolescents (15-17)	2.36		3.18		3.03		3.12		3.01	
	Young Adults (18-24)	2.44	0.02	3.19	0.003	3.01	0.02	3.06	0.05	3.03	0.02
Gender	Male	2.34		3.15		2.93		2.97		3.07	
	Female	2.48	0.11*	3.24	0.08*	3.12	0.12***	3.22	0.16***	2.97	0.01*
Residential Area	Rural	2.73		3.33		3.15		3.15		3.19	
	Semi-Urban	2.16	0.21***	3.27	0.19***	3.06	0.11***	3.05	0.10***	2.98	0.14***
	Urban	2.02		2.84		2.73		2.99		2.74	
Religious attachment	Not Strong	2.59		3.22		3.20		3.28		3.17	
	Neutral	2.39	0.04	3.17	0.01	3.01	0.04	3.00	0.07*	2.95	0.03
	Strong	2.39		3.19		3.00		3.07		3.01	
Socio-Economic Situation											
Father's education	No education	2.62		3.38		3.22		3.13		3.33	
	Schooling up to 10th grade	2.42		3.22		3.04		3.12		2.99	
	Schooling up to 12th grade	2.38	0.04**	3.12	0.06***	2.95	0.04***	3.01	0.08	2.86	0.09***
	Some university	2.02		2.81		2.67		2.93		2.84	
Mother's education	No education	2.55		3.28		3.15		3.10		3.14	
	Schooling up to 10th grade	2.35		3.15		2.94		3.06		2.93	
	Schooling up to 12th grade	2.10	0.05	3.03	0.01	2.58	0.09**	2.92	0.10**	2.77	0.07
	Some university	1.90		2.89		2.96		3.28		3.00	
Father's Profession	Self-employed (Own business)	2.17		3.09		2.73		3.03		2.78	
	Farmer	2.77		3.39		3.28		3.16		3.25	
	Government Job	2.02		2.82		2.79		3.03		2.78	
	Private Job	2.17	0.18***	3.10	0.15***	2.62	0.21***	3.02	0.05	2.93	0.17***
	Working on Daily Wages (Laborer)	2.37		3.30		3.24		3.04		3.14	

OM=observed mean, β=Beta value, p≤ *0.05, **0.01, ***0.001

Table II. Urdu Translation of the Scales

Social Distance	
1	میں / وہ مزاحیہ نام سے اسے بلائیں گے (مثال کے طور پر مینٹل، پاگل، سائیکو، مخلوط آل ہو اس بے وقوف، جھلا، چیل، عقل سے پیدل)۔
2	میں / وہ کالج میں علی / عائشہ کے ساتھ دوپہر کا کھانا کھائیں گے۔
3	میں / وہ علی / عائشہ پر ہنسیں گے اگر وہ وہاں موجود نہ ہو۔
4	میں / وہ علی / عائشہ کو اپنے ساتھ کھینے کے لیے مدعو کریں گے۔
5	میں / وہ علی / عائشہ کے ساتھ مشرک مطالعہ کی تجویز دیں گے۔
6	میں / وہ علی / عائشہ کے قریبی دوست بن سکتے ہیں۔
Stigma Beliefs	
میں / دوسرے طلباء / طالبات میرے کالج میں سوچتے ہیں کہ علی / عائشہ۔۔۔۔۔	
1	... اپنے آپ کے لیے خطرہ ہے۔
2	... دوسروں کے لیے خطرہ ہے۔
3	... ناقابل اعتماد ہے (اس کے رد عمل کا اندازہ لگانا مشکل ہے)۔
4	... لاحق مسئلہ ذاتی ہے۔
5	... ان مسائل کا تدارک نہیں کر سکتا / سکتی۔
Social Services	
اگر میرے کالج کے طلباء / طالبات کو یہ معلوم ہو کہ علی / عائشہ کا علاج ماہر نفسیات کے پاس چل رہا ہے تو	
1	اس سے انہیں کوئی فرق نہیں پڑے گا۔
2	اس سے دور رہیں گے۔
3	اسے چھوڑ دیں گے۔