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Money, Work and Mind: Socio-geographic Patterns of Financial Hardship and Psychological Distress in Urban Faisalabad and Rural Jaranwala, Pakistan

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Abstract
Background: Economic strain has been widely linked with common mental disorders, but evidence from place-stratified household samples in Pakistan remains limited. This study examined how objective and perceived financial difficulties relate to symptoms of depression and anxiety among adults sampled from urban Faisalabad and rural Jaranwala, and whether associations varied by age, sex, marital status, education, employment and household income.
Methods: A household questionnaire-based survey (place-stratified) was administered to 1,010 adult respondents (aged ≥ 20 years). We used the Kessler K 6 scale (K 6 ≥ 5) to measure depression and the GAD—7 scale (GAD—7 ≥ 10) to measure anxiety. Financial exposures (potential risk) encompassed income bands (monthly), job loss during the COVID-19 pandemic, reported financial concerns/difficulties, and five items assessing perceived financial resilience. We calculated "crude odds ratios (COR)" and "adjusted odds ratios (AOR)" by employing multivariable logistic regression analysis, controlling for key socio-demographic covariates and testing place (urban/rural) effects.
Results: Generalized occurrence persisted at 31.3% for probable depression and 42.9% for probable anxiety. Financial difficulties were prevalent (approximately 75% reported at least one difficulty) and demonstrated significant correlations with both outcomes: greater objective hardship was associated with increased likelihood/odds of depression and anxiety following adjustment. Perceived financial or economic resilience served as a significant protective factor; depression adjusted odds ratios (AORs) ranged from ~0.05 to 0.10, while anxiety AORs ranged from ~0.42 to 0.60. Younger employed-age adults (20 to 45 years) exhibited significantly elevated adjusted odds of depression (AORs ≈ 4.9–6.3 compared to those over 50 years). Individuals employed in semi-governmental, private, or alternative sectors exhibited a heightened risk of depression compared to government employees (AORs ~ 1.6–3.7). Middle-income bands (25–100k PKR) showed higher adjusted depression odds compared with the lowest income group, and reporting financial difficulty during COVID-19 was associated with increased depression (AOR ≈1.67). Urban–rural differences were attenuated after adjustment, indicating that socio-economic conditions rather than place per se explain much variation.
Conclusions: In Faisalabad and Jaranwala, financial insecurity—both objective shocks and lack of perceived resilience—is tightly linked to psychological distress, particularly among young adults and workers in precarious jobs. Policy responses should combine economic supports (cash transfers, labor protections) with accessible, place-sensitive mental-health services (workplace programs, primary-care integration and telehealth) targeted to vulnerable subgroups.

Keywords: public health, socio-geographic, health geographies, rural–urban, Faisalabad, Jaranwala, financial hardship, economic crises, psychological distress, depression, anxiety, place-stratified survey.

1.Introduction

Psychological distress is a widely used marker of population mental health—employed in public-health surveillance, population surveys and epidemiological work, and often adopted as an outcome in trials and interventions. Yet the term is not uniform: it is applied to a broad range of experiences, from depressive and anxiety symptoms to persistent personality traits, functional impairment and behavioral problems[1,2]. Depression is among the most frequently encountered mental disorders[3] and shows itself through persistent low mood, loss of pleasure or interest, feelings of worthlessness or excessive

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guilt, disturbed sleep or appetite, constant fatigue and difficulty concentrating[4,5]. Its consequences reach far beyond individual suffering: depression is a major source of disability worldwide and, according to global estimates, affected over ≈ 300 million people (>4% of the world population) in 2015[6,7,8,9,10]. Lifetime risk of developing a depressive disorder has been put at roughly ≈ 15–18%[9,11]. Anxiety disorders involve persistent, excessive fear or worry—often with muscle tension, restlessness, and sleep and concentration problems—that lasts for months, leads to avoidance of feared situations, markedly disrupts work, school and relationships, and raises the risk of depression, substance misuse and suicidal thoughts. Worldwide, they are the most frequent mental illnesses/disorders (approximately 4% of individuals, roughly ≈300 million during 2019); however, just around 01 in 04 who need care get adequate treatment, mainly due to stigma, poor service delivery and inadequate awareness[12]. The economic cost is just as bad as the human cost. Families dealing with mental illness lose money, spend more on health care, and have fewer resources to cope. The total cost of mental health conditions around the world is expected to rise sharply[13,14,15,16], reaching an estimated US$16 trillion by 2030[17]. A lot of social and economic factors affect the risk of depression. Not having a job, not making enough money, not getting enough education, and not getting enough support from family or friends are all close-in causes. Living in a bad neighborhood and having income inequality that has been around for a long time are two of the bigger causes.

Proximal and structural determinants function within households: episodic shocks (job loss, abrupt income reductions) and chronic strains (increasing debt, unstable contracts, and escalating living expenses) convert the abstract consequences of poverty and inequality into quotidian pressures. Those pressures cause long-lasting psychosocial strain, which can show up as anxiety at first and then, if it lasts too long and isn't supported by friends or money, it can turn into a long-lasting low mood and functional withdrawal that are typical of depression. Recent research has evolved from utilizing single-item measures of poverty to integrating tangible economic indicators with self-reported financial security and coping resources, reflecting the influence of both objective hardship and individuals' perceptions of their financial resilience on these trajectories. This analytical transition forms the basis for the subsequent literature, which investigates not only correlations but also temporal sequences and mechanisms linking financial difficulties to the rising incidence of common mental disorders[18,19,20].

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Over the last twenty years researchers have paid increasing attention to household financial stress—loss of work, mounting debt and everyday hardship—as a trigger for common mental disorders. Although the literature is not uniform, a number of studies report clear links between financial strain (for example, debt burdens and difficulty meeting basic expenses) and higher rates of depression and anxiety[21,22,23,24,25,26]. Depression and anxiety are highly intertwined mental health conditions, often occurring together. Worldwide surveys show that around 45% of people with lifetime major depressive disorder (MDD) also experience an anxiety disorder, and nearly 42% of those with depression in the past year concurrently meet criteria for an anxiety condition[27,28,29,30]. Longitudinal evidence provides insight into directional pathways. The Zurich Cohort Study followed a community sample from young adulthood over 15 years and found that anxiety symptoms alone often precede and evolve into depression or co-occurring anxiety-depression, whereas depression alone tends to be more stable over time[31]. Similarly, a large twin study of older adults found that anxiety symptoms predicted future depressive symptoms, but not the reverse: anxiety appears to lead into depression over time[32]. Given this dual health and economic impact, it is crucial to identify the social and financial drivers that increase vulnerability to depression and anxiety; doing so will help shape prevention and support policies that reduce risk, lessen household strain and improve population well-being. To create targeted, effective interventions, we need place-sensitive evidence that shows the difference between urban-industrial pathways of risk and rural service-access limitations.

Many Pakistanis suffer from depression and anxiety[33]. In recent years, Pakistan's economy has suffered shocks that revealed its weak financial arrangements[34,35]. Budget shortfalls, falling foreign exchange reserves, and rising public debt are making it hard for households to buy things. These issues have hurt private-sector and informal workers most[26,36,37,38]. This financial stress goes beyond money. Constantly worrying about money can be stressful[39]. People often feel depressed, tired, can't

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sleep or eat, can't focus, and have lost interest in life[40]. All of these indicate psychological distress. Long-term epidemiological research shows that low-income and unstable workers have poorer mental health. Depression, anxiety, and substance abuse are especially common during economic downturns when people lose their jobs or go into debt[41,42,43,44,45]. Thus, Pakistani mental-health responses must be closely tied to economic and labor policies, prioritizing informal and private-sector workers who face precarity. Increased social safety nets, workplace protections, and community mental-health services can reduce financial and psychological stress.

The COVID-19 shock made these weaknesses even worse[46]. Many families lost money quickly because of lockdowns and interruptions to business. Informal and peri-urban wage earners—those who work in factories, small workshops, or as casual day labor—often lost their jobs without any social protection[47,48,49,50,51]. In remote rural areas, the situation was different. Even though incomes stayed pretty stable, the lack of health services and mental health care meant that needs weren't being met. Psychological distress thus manifests a distinct socio-geographic pattern: urban-peripheral and informal industrial areas—especially migrant enclaves in Karachi—demonstrate heightened anxiety and depression due to unstable employment, overcrowded housing, and diminished social supports, disproportionately impacting women and low-income households. Rural localities, such as villages in Sindh, experience persistent suffering because sparse primary care, limited psychiatric services, and weak educational resources impede detection and treatment[52,53,54,55,56,57,58,59,60,61,62]. By contrast, places anchored

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by secure public-sector jobs, robust communal networks and higher educational attainment show relative resilience and lower prevalence of distress[63,64,65].

Earlier research from Pakistan—often conducted in clinics or limited to specific urban groups—has consistently linked household economic instability (for example, unstable income, precarious work and persistent money worries) with higher levels of depression and anxiety[66,67]; a clinic-based study in Karachi even showed that financial strain explained a meaningful portion of psychological distress after accounting for age and sex[68]. Those investigations, however, typically focused on narrow populations and relied on single measures of economic pressure. At the same time, a number of recent local studies in Faisalabad have explored related themes—pandemic-era distress among diagnosed and undiagnosed adults[69], postpartum depression[70], anxiety in hospitalized cardiac patients[71], the mental-health consequences of domestic violence[72,73], and school- and university-based surveys of young people—suggesting that worry about money, disrupted livelihoods and limited access to services are recurring concerns in the district[74,75]. By contrast, our study draws on a place-stratified household survey that deliberately samples both urban Faisalabad and rural Jaranwala, combines multiple objective and subjective indicators of financial hardship, and uses validated screening tools for depression and anxiety to permit a direct socio-geographic comparison; in doing so, it fills a gap in the Pakistani literature by testing how concrete financial shocks and residents' own sense of economic resilience operate across different local contexts.

2. Materials and Methods

2.1. The Study Area

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This study is conducted in the urban and rural areas of the industrial district of Faisalabad, Namely Faisalabad city[76,77] and Jaranwala tehsil[78], respectively. Urban Faisalabad city is located at 31°25'38.08"N, 73° 5'18.51"E whereas rural Jaranwala is at 31°20'8.93"N, 73°25'34.89"E (Figure 1). Total area of district Faisalabad is 5,857 km^2 (Faisalabad city area: 168 km^2; Jaranwala tehsil area: 1811 km^2). Total population of district Faisalabad is 7,882,444 (Faisalabad city: 3,244,259; Jaranwala tehsil rural: 1,267,317). Population density per km^2 in Faisalabad city is 19311.07 (urban proportion: 98.95), while it is 824.92 (urban proportion: 15.17) in Jaranwala[79].

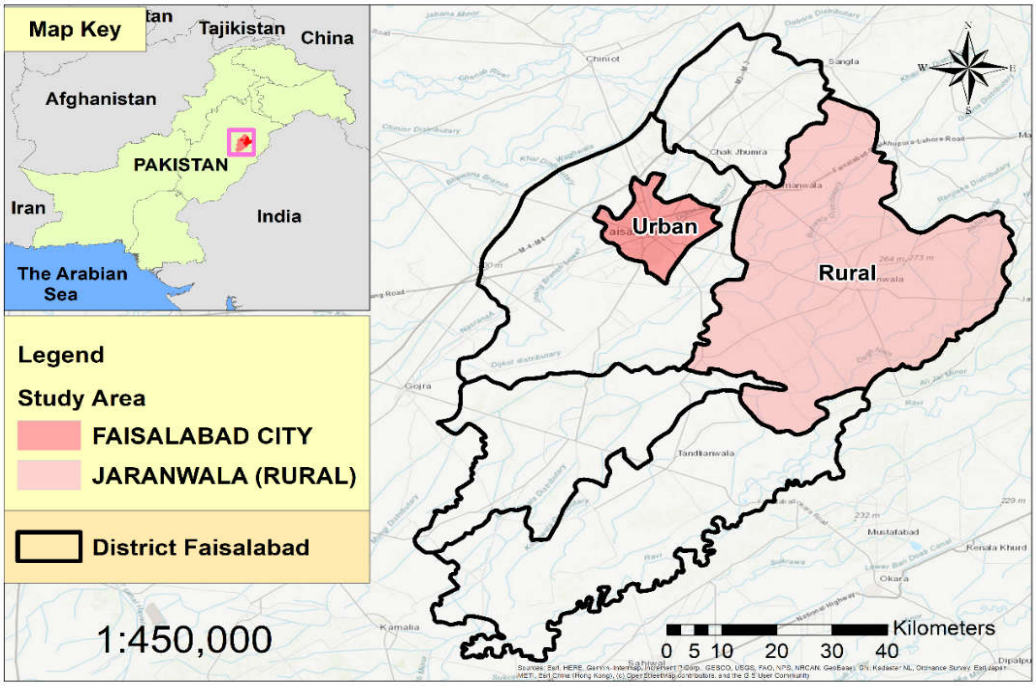

Figure 1: Study Area Map showing Faisalabad city and Jaranwala tehsil.

2.2. Methods

2.2.1. Study design and setting

We carried out a cross-sectional, household survey in urban Faisalabad city and the neighboring rural Jaranwala tehsil between 07 April, 2023 and 28 June, 2023. These two study areas (Faisalabad city & Jaranwala tehsil) were selected to capture contrasting socio-geographic contexts within the Faisalabad district: urban land use dominated by industrial, commercial and service employment and rural union councils with predominantly agricultural livelihoods[80,81,82].

2.2.2. Sampling and participants

A stratified random sampling strategy[83] was used with strata defined by an urban grid (250x250) [n = 505] and rural union councils/villages [n = 505]. (We collected 1,360 questionnaires in total; after removing 350 incomplete records, 1,010 fully completed responses (used for the final analysis) remained.). Within each stratum we selected households using a systematic interval sampling approach from updated residential communities, yielding a target sample of 1,010 adults aged 20 years and

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older[84]. In households with more than one eligible adult, one respondent was chosen at random using the Kish grid (or the next-birthday method). Eligibility criteria included residence in the study area for at least six months, age ⩾20 years, and the ability to provide informed consent; visitors and respondents unable to answer due to severe cognitive impairment or acute illness were excluded[85,86].

2.2.3. Questionnaire development, translation and pilot testing

We used a semi-structured questionnaire comprising socio-demographic items, financial indicators and validated mental-health screening instruments. The instruments were translated into Urdu, back-translated into English, and pilot tested on a convenience sample of 30 respondents to ensure cultural relevance and clarity. Field adjustments to wording and response options were made following piloting[87].

2.2.4. Measures

2.2.4.1. Outcomes

Psychological distress was measured using two validated screening tools. Depressive symptoms were assessed with the Kessler Psychological Distress Scale (K6), a six-item instrument with responses scored 0 ("none of the time") to 4 ("all of the time"), yielding a total score of 0–24. Anxiety symptoms were measured using the GAD-7, a seven-item scale with responses scored 0 ("not at all") to 3 ("nearly every day"), total range 0–21; a cut-off of ≥10 was used to indicate probable moderate to severe anxiety. Internal consistency (Cronbach's α) for each scale was calculated in the study sample[88,89].

2.2.4.2. Exposures and covariates

Objective financial hardship indicators included monthly household income (categorized as <25k, 25–50k, 50–75k, 75k–100k, >100k PKR), employment status (employed/unemployed), and pandemic-related shocks (job loss during the COVID-19 period and self-reported financial difficulties during the pandemic)[90]. Perceived financial resilience was measured with five binary items (agree/disagree) covering the ability to handle a major unexpected expense, perceived security of future finances, enjoyment of life while managing money, concern about savings lasting, and perceived inability to obtain desired items due to low income. Socio-demographic covariates included age (grouped: 20–25, 26–30, 31–35, 36–40, 41–45, 46–50, >50), sex, marital status, education level, living area (urban/rural), and presence of chronic health complaints[91].

2.2.4.3. Data collection and quality control

Trained interviewers conducted face-to-face interviews following a standard operating procedure. Interviewers received training on informed consent, respectful interviewing, confidentiality and how to respond to participants with high distress scores (referral to local health services). Supervisors checked completed questionnaires daily, and 10% of interviewees were re-contacted for quality control[92].

2.2.4.4. Ethics and participant safety

The study protocol received approval from the "Ethical Review Committee of Government College University Faisalabad, Pakistan," approval number—"Ref. No. GCUF/ERC/235—Dated: 06 April 2023". All participants provided written informed consent. Respondents identified as high risk on screening instruments were given information on local mental-health services and, where necessary, referred to a clinician.

2.2.4.5. Data cleaning and management

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Completed questionnaires were entered into a secure database and checked for consistency. Records with missing key outcome data were excluded from analysis; all exclusion criteria are documented (1360 questionnaires collected; 1010 complete and eligible responses retained). We examined missingness patterns and used multiple imputation where appropriate for covariates included in multivariable models.

2.2.5. Statistical analysis

We report descriptive statistics (counts, percentages, means and standard deviations) stratified by urban/rural residence. Bivariate associations were tested using chi-square tests for categorical variables and t-tests or Mann–Whitney tests for continuous variables as appropriate. We estimated crude odds ratios (COR) and adjusted odds ratios (AOR) using multiple logistic regression for two binary outcomes: probable depression (Psychological distress was measured with the Kessler K6 scale (range 0 – 24)[93,94,95]. Following common population-survey practice, we used a cut-off score of $\geqslant 5$ to indicate elevated psychological distress; as a sensitivity check we also report results using the conservative cutoff $\geqslant 13$ for serious psychological distress[94].) and probable anxiety (GAD-7 $\geqslant 10$)[89]. Models adjusted for age, sex, education, marital status, employment status, chronic conditions and household income. We assessed multicollinearity using variance inflation factors, goodness-of-fit using the Hosmer–Lemeshow test and report 95% confidence intervals and p-values ($\alpha = 0.05$)[96]. Given the clustered sample design, we also fitted multilevel logistic models with random intercepts for urban grid/village to account for community-level variation and reported intra-class correlation coefficients. Sensitivity analyses included alternative cutoffs, exclusion of respondents with major chronic illness, and models using multiple imputation for missing covariate data[8,97,98,99]. All analyses were performed in SPSS version 22 (IBM SPSS Statistics).

2.2.6. Limitations and reproducibility

We acknowledge the cross-sectional design limits direct causal inference; however, we use temporally anchored exposures (e.g., job loss during the COVID-19 periods) and mediation analysis to explore plausible pathways. Figure 2 presents our working model: sudden financial shocks (for example, job loss, an abrupt drop in household income, or mounting debt) reduce available household resources and create day-to-day hardship. That material shortfall tends to generate chronic psychosocial stress—persistent worry, sleep disturbance and sustained negative affect—which undermines individual coping and strains social relationships. These processes increase the likelihood of depressive and anxiety symptoms. Over time the relationship may become self-reinforcing: psychological distress can reduce work performance and earnings, deepening financial difficulty and perpetuating the cycle. We emphasize that the model depicts a plausible causal pathway motivated by prior literature; however, with cross-sectional data we can only test associations and mediating pathways consistent with this model rather than prove temporally ordered causation[100,101].

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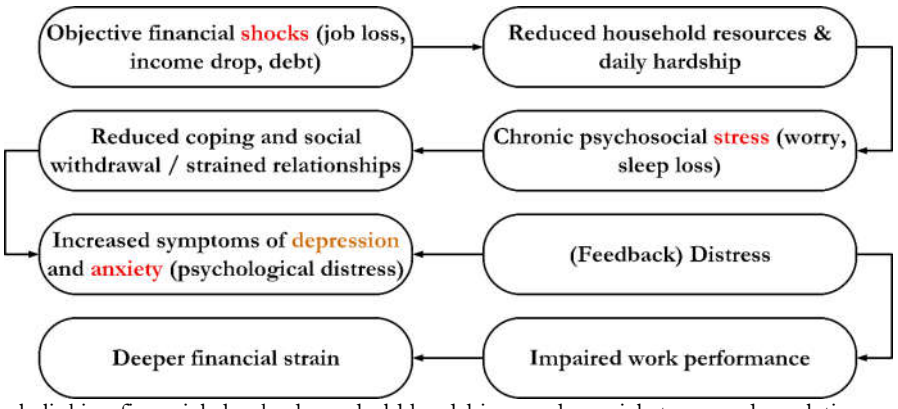

Figure 2: Causal cycle linking financial shocks, household hardship, psychosocial stress, and escalating psychological distress.

3. Results and Insights

3.1. Predictors of Probable Depression: Distribution and Adjusted Associations

Table 1 (Depression). In our sample of 1,010 adults, 316 (≈31%) screened above the distress threshold for probable depression; men comprised 500 (≈49.5%) of respondents and women 510 (≈50.5%), with depression present in about ≈24% of men (120/500) and ≈38% of women (196/510). In crude bivariate models, women showed slightly higher odds of depression (COR ≈ 1.13), and this association was essentially unchanged after adjustment (AOR ≈ 1.06). Age showed a strong, graded relationship: those above 50 had the lowest prevalence (3/40, 7.5%) and served as the reference, while younger working-age bands (20–45 years) exhibited markedly elevated adjusted odds (AORs roughly ≈ 4.9–6.3, all $p < 0.05$), indicating concentrated burden among the labor force (see table for group counts and interval estimates). Employment type and workplace sector were important while comparing the government (govt.) employees, people in semi-government, private, and "other" work settings had significantly higher adjusted odds of depression (AORs roughly in the 1.6-3.7 range), and unemployed respondents had no higher adjusted risk than employed participants. Marital status emerged as significant too: married and single respondents both exhibited over twice the odds of depression relative to widowed participants (AORs ≈ 2.6 – 2.8), whereas separated individuals did not differ significantly. Having education showed unclear linear pattern after adjusting it; all educational levels having similar odds linked to the illiterate respondents. A pure income gradient came in adjusted models: earning (PKR) 25 – 50k, 50 – 75k or 75 – 100k monthly was related to about 3.6, 4.9 and 4.5 times bigger adjusted odds of depression, respectively, as compared with < 25k. Living-area showed mixed-findings—crude analysis recommended lesser odds in urban participants (COR-0.69, p=0.001), but the linkage weakened in the full adjusted model (AOR≈1.32, p≈0.075)—thus place (alone) did not completely clarify risk once socioeconomic covariates were involved. Self-reported good-health was protective in crude but not in adjusted-models. Most remarkably, subjective financial resilience was very protective: participants who agreed they could handle an unforeseen expenditure or who felt protected about their financial upcoming had impressively lower adjusted-odds of depression (AORs~0.05–0.10, $p< 0.001$). Pandemic associated financial stress increased crude-odds and continued noteworthy in adjusted model for some factors/indicators (e.g. having income (money) difficulties during COVID-19 displayed AOR≈1.67). These patterns echo wider evidence that socioeconomic disruption and precarious work are central drivers of mental-health burden in Pakistan and similar contexts[44,45,99].

Table 1: Distribution of participant characteristics and predictors of probable depression (N = 1,010): crude and adjusted odds ratios.

Variables	Overall N=1010	Depression		Bivariate regression analysis		Multiple logistic regression analysis	
	N%	Negative n%	Positive n%	COR (95%CI)	P-value	AOR (95%CI)	P-value
Gender							
Male	500 (49.5)	380 (30.0)	120 (19.4)	Ref.	Ref.	Ref.	Ref.
Female	510 (50.5)	314 (38.6)	196 (11.9)	1.130(0.849-1.505)	0.003	1.055(0.768-1.451)	0.000
Age							
20-25	88(8.7)	65 (6.4)	23 (2.3)	4.364(1.227-15.525)	0.023	4.955(1.077-22.802)	0.004
26-30	120(11.9)	89 (8.8)	31 (3.1)	4.296(1.236-14.927)	0.022	5.344(1.200-23.805)	0.002
31-35	288(28.5)	208 (20.6)	80 (7.9)	4.744(1.422-15.820)	0.011	6.252(1.462-26.733)	0.001
36-40	246(23.1)	186 (18.4)	60 (5.9)	3.978(1.184-13.369)	0.026	4.877(1.135-20.952)	0.003
41-45	122(12.1)	93 (9.2)	29 (2.9)	3.846(1.104-13.400)	0.034	4.860(1.089-21.686)	0.038
46-50	106(10.5)	83 (8.2)	23 (2.3)	3.418(0.966-12.097)	0.057	4.278(0.946-19.344)	0.059
Above 50	40(4.0)	37 (3.7)	3 (0.3)	Ref.	Ref.	Ref.	Ref.
Employment status							
Employed	780 (77.2)	592 (58.6)	188 (18.6)	0.880(0.629-1.231)	0.001	0.840(0.587-1.202)	0.003
Unemployed	230	169 (16.7)	212 (12.0)	Ref.	Ref.	Ref.	Ref.

	(22.8)						
Work Organization							
Govt.	230(22.7)	176(17.4)	54(5.3)	Ref.	Ref.	Ref.	Ref.
Semi-govt	184(18.3)	96(9.5)	88(8.7)	0.055(0.022-0.140)	0.000	2.549(3.932-1.652)	0.000
Private	336(33.3)	210(20.8)	126(12.5)	0.022(0.010-0.050)	0.000	1.574(3.932-2.012)	0.000
Other	258(25.6)	179(17.7)	79(7.8)	0.006(0.002-0.022)	0.000	3.71(2.155-6.393)	0.000
Marital status							
Single	288	227 (22.5)	61 (6.0)	1.309(0.941-1.822)	0.010	2.832(5.215-1.538)	0.000
Married	(28.5)	503(49.8)	177 (17.5)	1.456(0.641-3.309)	0.037	2.627(5.518-1.250)	0.000
Separated	680	23 (2.3)	9 (0.9)	0.930(0.193-4.494)	0.092	1.062(.000)	1.000
Widow	(68.3)	8 (0.8)	2 (0.2)	Ref.	Ref.	Ref.	Ref.
	32 (3.2)						
	10 (1.0)						
Level of education							
Illiterate	94 (9.3)	67 (6.6)	27 (2.7)	Ref.	Ref.	Ref.	Ref.
Primary	28 (2.8)	24 (2.4)	4 (0.4)	2.821(0.903-8.811)	0.074	2.507(0.797-7.893)	0.116
Middle	60 (5.9)	47 (4.7)	13 (1.3)	1.167(0.263-5.173)	0.003	0.840(0.171-4.124)	0.030
SSE	72 (7.1)	53 (5.2)	19 (1.9)	1.936(0.575-6.522)	0.028	1.489(0.427-5.200)	0.053
Inter	90 (8.9)	68 (6.7)	22 (2.2)	2.509(0.778-8.097)	0.012	2.113(0.644-6.929)	0.021
BA/BSc	92 (9.1)	72 (7.1)	20 (2.0)	2.265(0.715-7.172)	0.015	1.956(0.610-6.268)	0.059
MSc/BS	378(37.4)	277 (27.4)	101 (10.0)	1.944(0.610-6.196)	0.026	1.775(0.552-5.709)	0.036
MPhil/MS	164(16.2)	125 (12.4)	39 (3.9)	2.552(0.874-7.457)	0.001	2.022(0.689-5.934)	0.002
PHD	32 (3.2)	28 (2.8)	4 (0.4)	2.184(0.721-6.611)	0.016	1.736(0.567-5.315)	0.034
Monthly income							
less than 25k	245	170 (16.8)	75 (7.4)	Ref.	Ref.	Ref.	Ref.
25k to 50k	(24.3)	187 (18.5)	77 (7.6)	3.206(1.214-8.466)	0.001	3.583(1.229-10.445)	0.001
50k to 75k	264	134 (13.4)	30 (3.0)	4.676(1.797-12.169)	0.002	4.873(1.693-14.022)	0.003
75k to 100k	(26.1)	55 (5.4)	13 (1.3)	4.365(1.680-11.338)	0.002	4.548(1.584-13.062)	0.005
Above 100k	164	53 (5.2)	5 (0.5)	2.373(0.874-6.443)	0.003	2.519(0.837-7.580)	0.002
	(16.2)						
	68 (6.7)						
	58 (5.7)						
Living area							
Urban	480	344 (34.1)	136 (13.5)	0.685(0.514-0.914)	0.001	1.324(0.972-1.803)	0.075
Rural	(57.5)	417 (41.1)	113 (11.2)	Ref.	Ref.	Ref.	Ref.
	530						
	(52.5)						
Self-reported health status							
Poor	639	368 (36.4)	271(26.8)	Ref	Ref.	Ref.	Ref.
Good	(63.3)	292(28.9)	79(7.8)	0.759(0.514-1.120)	0.001	1.441(0.935-2.220)	0.005
	371(36.7)						
I am able to handle a major unexpected expense.							
Disagree	754	484(48.2)	270(26.7)	Ref.	Ref.	Ref.	Ref.
Agree.	(74.6)	58(5.8)	136(13.5)	0.052(0.013-0.209)	0.000	0.049(0.012-0.199)	0.000
	194						
	(19.2)						
I am securing my financial future.							
Disagree	678(67.1)	508(50.3)	170(16.8)	Ref.	Ref.	Ref.	Ref.
Agree.	149(32.8)	174(17.2)	158(15.6)	0.123(0.039-0.389)	0.000	0.102(0.030-0.343)	0.000
I feel I will never have the things I want in life due to less income.							
Disagree	570(56.8)	420(41.6)	150(14.9)	Ref.	Ref.	Ref.	Ref.
Agree.	442(43.8)	306(30.3)	136(13.5)	0.675(0.151-3.012)	0.607	0.750(0.160-3.514)	0.715
I can enjoy my life because of the way I'm managing my money.							
Disagree	521(51.6)	359(35.5)	162(16.0)	Ref.	Ref.	Ref.	Ref.
Agree	484(47.9)	360(35.6)	124(12.2)	0.186(0.089-0.388)	0.000	0.184(0.087-0.388)	0.000
I am concerned that the money I have or will save won't last long.							
Disagree	684(67.7)	474(46.9)	210(20.8)	Ref.	Ref.	Ref.	Ref.
Agree.	322(31.9)	246(24.4)	76(7.5)	1.768(0.391-7.991)	0.459	2.117(0.445-10.076)	0.346
Did you lose your job during the covid-19 pandemic?							
No.	653(64.7)	358(35.4)	295(29.2)	Ref.	Ref.	Ref.	Ref
Yes.	357(35.3)	146(14.5)	211(20.9)	0.176(1.56-2.607)	0.002	1.254(2.432-1.845)	0.058
Did you face any financial difficulties during the time of pandemic?							
No.		131(12.9)	266(26.3)	Ref.	Ref.	Ref.	Ref.
Yes.	397(39.3)	214(21.2)	399(39.5)	2.089(1.877-3.899)	0.001	1.67(0.671-1.811)	0.002
	613(60.7)						

Note: COR = Crude Odds Ratio, CI = Confidence interval, AOR = Adjusted odds Ratio

3.2. Predictors of Probable Anxiety: Distribution and Adjusted Associations

Table 2 (Anxiety). Anxiety symptoms were also common and showed a related but not identical profile. In raw counts, women reported more anxiety than men (264/510 versus 170/500); crude models showed substantially higher odds for women (COR ≈ 1.81, p<0.001), but the adjusted model reversed this direction (AOR ≈ 0.55, p<0.001), indicating strong confounding by other covariates. Younger age groups again had higher crude odds of anxiety (for example, COR ≈ 3.00 for ages 20–25 versus >50), though several adjusted estimates moved toward lower AORs for specific bands (see table for details), reflecting the complex overlap of age, employment and education. Employment status and workplace sector behaved differently for anxiety than for depression: employed versus unemployed showed lower crude odds but higher adjusted odds (AOR ≈ 1.55, p≈0.005), and private/"other" workplace categories carried higher adjusted risk (AORs similar to the depression models). Marital status, level of education, living area and self-reported health all showed meaningful bivariate associations with anxiety: in simple comparisons, both single and married respondents tended to report more anxiety than widowed or separated participants, lower educational attainment was linked with higher crude anxiety prevalence, urban–rural comparisons produced small differences in raw rates, and respondents reporting poor health had noticeably higher anxiety scores. Yet, when the model adjusted for socio-demographics, employment and financial indicators, many of those associations weakened—education and marital status lost consistent, independent effects across specifications, and living area did not offer a stable protective or risk signal once income, employment type and perceived financial resilience were accounted for. Income associations likewise changed after adjustment: some mid-income bands had higher crude odds but lower adjusted odds (for example, the 25–50k and 50–75k bands show CORs >2 but AORs <0.5), underscoring how confounding and effect modification operate across socioeconomic strata. As with depression, perceived financial resilience reduced anxiety risk (e.g., being able to cover an unexpected expense or feeling able to enjoy life while managing money had protective AORs around 0.42–0.60). Pandemic-related financial difficulty was associated with higher crude odds of anxiety but lost significance in several adjusted specifications. (See Table 2 for the full distribution, CORs, AORs and CIs.) Overall, the anxiety findings reinforce the interpretation that financial insecurity, precarious employment and younger working age concentrate psychological risk in urban-industrial and peri-urban pockets[102,103] , while rural areas may register a different pattern driven by limited service access rather than uniformly higher prevalence; this socio-geographic framing aligns with local evidence on occupational hazards in Faisalabad's textile belts and with broader reviews of mental-health service shortfalls in Pakistan[74].

Table 2: Distribution of participant characteristics and predictors of probable anxiety (N = 1,010): crude and adjusted odds ratios.

Variables	Anxiety		Bivariate regression analysis		Multiple logistic regression analysis	
	Negative n%	Positive n%	COR (95%CI)	P-value	AOR (95%CI)	P-value
Gender						
Male	330(32.7)	170(16.8)	Ref.	Ref.	Ref.	Ref.
Female	246(24.4)	264(26.1)	1.809(1.403-2.331)	0.000	0.549(0.423-0.712)	0.000
Age (years)						
20-25	44(4.4)	44(4.4)	3.000(1.310-6.871)	0.009	0.310(0.130-0.739)	0.008
26-30	56(5.5)	64(6.3)	2.625(1.179-5.845)	0.001	0.377(0.163-0.871)	0.022
31-35	114(11.3)	174(17.2)	1.966(0.925-4.176)	0.005	0.505(0.228-1.114)	0.019
36-40	110(10.9)	136(13.5)	2.426(1.136-5.181)	0.002	0.396(0.179-0.880)	0.023
41-45	52(5.1)	70(6.9)	2.229(1.001-4.963)	0.005	0.447(0.193-1.033)	0.050
46-50	30(3.0)	76(7.5)	1.184(0.516-2.719)	0.069	0.857(0.359-2.049)	0.729
Above 50	10(1.0)	30(3.0)	Ref.	Ref.	Ref.	Ref.
Employment status						
Employed	300(29.7)	480(47.5)	0.614(0.457-0.826)	0.001	1.548(1.143-2.098)	0.005
Unemployed	116(11.5)	114(11.3)	Ref.	Ref.	Ref.	Ref.
Work organization						
Govt	150(14.9)	80(7.9)	Ref.	Ref.	Ref.	Ref.
Semi-govt	99(9.8)	85(8.4)	0.151(0.077-0.298)	0.000	2.548(3.942-1.656)	0.000
Private	170(16.8)	166(16.4)	0.478(0.231-0.988)	0.046	1.577(1.242-2.022)	0.000
Other	146(14.5)	112(11.1)	0.720(0.438-1.183)	0.195	3.713(2.165-6.395)	0.000
Marital status						
Single	126(12.5)	162(16.0)	0.194(0.041-0.932)	0.004	4.984(1.039-23.899)	0.045
Married	414(41.0)	266(26.3)	0.161(0.034-0.762)	0.016	6.134(1.292-29.121)	0.022
Separated	16(1.6)	16(1.6)	0.250(0.046-1.365)	0.025	4.000(0.733-21.838)	0.109
Widow	8(0.8)	2(0.2)	Ref.	Ref.	Ref.	Ref.
Level of education						
Illiterate	28(2.8)	66(6.5)	Ref.	Ref.	Ref.	Ref.
Primary	10(1.0)	18(1.8)	1.310(0.538-3.190)	0.553	0.614(0.261-1.445)	0.064
Middle	28(2.8)	32(3.2)	2.062(1.052-4.042)	0.035	0.794(0.267-2.360)	0.068
SSE	36(3.6)	36(3.6)	2.357(1.244-4.468)	0.009	1.355(0.556-3.304)	0.055
Inter	36(3.6)	54(5.3)	1.571(0.853-2.895)	0.014	1.547(0.643-3.720)	0.330

[102] Najaf Shah, "Assessment of the Workplace Conditions and Health and Safety Situation in Chemical and Textile Industries of Pakistan," *Science Journal of Public Health* 3, no. 6 (2015): 857, https://doi.org/10.11648/j.sjph.20150306.20.
[103] Iain Wilkinson, *Anxiety in a'risk'society* (Routledge, 2002).

BA/BSc	32(3.2)	60(5.9)	1.257(0.679-2.328)	0.046	1.029(0.441-2.403)	0.947
MSc/BS	186(18.4)	192(19.0)	2.283(1.405-3.712)	0.001	0.788(0.337-1.844)	0.058
M.Phil/MS	48(4.8)	116(11.5)	0.975(0.560-1.700)	0.039	1.588(0.743-3.394)	0.223
PHD	12(1.2)	20(2.0)	1.414(0.610-3.280)	0.041	0.571(0.254-1.284)	0.017
Income per-month						
less than 25k	126(12.5)	159(15.8)	Ref.	Ref.	Ref.	Ref.
25k to 50k	136(13.5)	168(16.7)	2.002(1.067-3.754)	0.031	0.457(0.235-0.889)	0.021
50k to 75k	74(7.3)	130(12.9)	2.057(1.101-3.844)	0.024	0.461(0.238-0.892)	0.022
75k to 100k	44(4.4)	69(6.8)	1.289(0.665-2.497)	0.425	0.730(0.363-1.466)	0.037
Above 100k	36(3.6)	67(6.6)	1.432(0.669-3.064)	0.035	0.673(0.303-1.492)	0.329
Living area						
Urban	208(20.6)	272(26.9)	1.184(0.921-1.522)	0.018	0.786(0.607-1.017)	0.005
Rural	208(20.6)	322(31.9)	Ref.	Ref.	Ref.	Ref.
Health reported status						
Poor	446(44.2)	148(14.7)	Ref.	Ref.	Ref.	Ref.
Good	315(31.2)	101(10.0)	1.062(0.769-1.468)	0.000	0.955(0.686-1.329)	0.005
I am able to handle a major unexpected expense.						
Disagree	282(27.9)	410(40.6)	Ref.	Ref.	Ref.	Ref.
Agree.	134(13.3)	184(18.2)	0.351(0.136-0.902)	0.030	0.422(0.181-0.982)	0.045
I am securing my financial future.						
Disagree	224(22.2)	332(32.9)	Ref.	Ref.	Ref.	Ref.
Agree.	96(6.8)	262(25.9)	1.066(0.394-2.879)	0.005	0.980(0.349-2.749)	0.059
I feel I will never have the things I want in life due to less income.						
Disagree	247(24.5)	357(35.3)	Ref.	Ref.	Ref.	Ref.
Agree.	69(6.8)	175(17.3)	1.813(0.574-5.723)	0.031	2.108(0.623-7.130)	0.023
I can enjoy my life because of the way I'm managing my money.						
Disagree Agree	201(19.9)	251(24.9)	Ref.	Ref.	Ref.	Ref.
	155(15.3)	281(27.8)	0.621(0.368-1.047)	0.047	0.603(0.347-1.047)	0.073
I am concerned that the money I have or will save won't last long.						
Disagree	257(25.4)	367(36.3)	Ref.	Ref.	Ref.	Ref.
Agree.	99(9.8)	165(16.3)	0.749(0.235-2.386)	0.056	0.680(0.202-2.289)	0.053
Did you lose your job during the covid-19 pandemic?						
No.	282	159	Ref.	Ref.	Ref.	Ref.
Yes.	245	324	0.453(1.145-2.455)	0.001	1.233(0.544-2.332)	0.004
Did you face any financial difficulties during the time of the pandemic?						
No.	331(32.7)	241(23.8)	Ref.	Ref.	Ref.	Ref.
Yes.	221(21.8)	217(21.5)	1.287(1.035-1.627)	0.003	0.967(0.225-2.987)	0.057

Note: COR = Crude Odds Ratio, CI = Confidence interval, AOR = Adjusted odds Ratio

4. Discussion

4.1. Socioeconomic and Demographic Drivers of Depression and Anxiety in Faisalabad Region

In our urban – peri-urban sample from the Faisalabad – Jaranwala area of Punjab, Pakistan, about one-third (≈31%) of adults met criteria for probable depression, and similarly high levels of anxiety were reported. These rates are consistent with other South Asian studies: for example, an online survey during Pakistan's COVID-19 lockdown found ~40% depression and ~58% anxiety in the general population[104]. Women bore a heavier burden: ~38% of women screened positive for depression vs. ~24% of men. This gender gap echoes longstanding findings in Pakistan and neighboring countries, where depression disproportionately affects females[43,105]. In our data, women's crude odds of depression were slightly higher (COR≈1.13) but became marginal (AOR≈1.06) after adjusting for other factors, suggesting that gender interacts with social conditions. Women had higher raw rates of anxiety as well, but adjusting for other factors changed the relationship (AOR≈ 0.55), showing that things like job status and income explain a lot of the difference between men and women. This pattern corresponds with regional observations: Mirza and Jenkins's systematic review identified female gender, low educational attainment, and financial stress as significant predictors of anxiety and depression in Pakistan[43]. In Bangladesh, studies of urban slums also found that women were more likely to be depressed, especially those who were unemployed and poor[106]. These similarities imply that women's mental health in Punjab is influenced by socioeconomic stressors (e.g., familial conflict, financial difficulties) as significantly as by gender itself[43,73,107,108].

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[105] Areeba Altaf, "Sociodemographic Pattern of Depression in Urban Settlement of Karachi, Pakistan," *Journal of Clinical and Diagnostic Research*, ahead of print, 2015, https://doi.org/10.7860/JCDR/2015/12611.6093.

[106] Md. Saiful Islam et al., "Financial and Mental Health Concerns of Impoverished Urban-Dwelling Bangladeshi People During COVID-19," *Frontiers in Psychology* 12 (August 2021): 663687, https://doi.org/10.3389/fpsyg.2021.663687.

[107] Zarina Kausar et al., "Socio-Economic Problems Influencing Women Working In The Textile Industry: A Case Study of Khurrianwala, Faisalabad," *Pakistan Geographical Review* 73, no. 2 (2018): 136–48.

[108] Iqra Arshad et al., "Identifying Women's Vulnerability to Different Social Problems in Small Cities: A Case Study Of Samundri," *Pakistan Geographical Review* 74, no. 1 (2019): 09–19.

There was a clear gradient based on age and life stage. Depression was most common in younger adults who were working. People aged 20 to 45 were about five to six times more likely to be depressed than people over 50. In fact, only 7.5% of people over 50 (3 out of 40) tested positive. This concentration in prime working ages may be due to the stress of making a living and raising a family. Our findings contrast with some high-income settings where older age often brings higher depression, highlighting how context matters. Indeed, a rural Pakistani survey of adolescents reported extremely low depression (4.4%) in unmarried teen girls[109], indicating that significant mental distress may emerge later, under economic and family responsibilities. Mirza et al. similarly noted "middle age" as a risk factor in Pakistan[43], consistent with our pattern. It appears that the **labor force—especially younger adults in precarious jobs—carries the highest mental-health burden** in Faisalabad and environs, whereas rural youth without such pressures remain comparatively protected.

Employment sector and job security were also critical. Compared to government employees, people in semi-government, private, or "other" jobs had substantially higher adjusted depression odds (AORs ~1.6–3.7). This suggests that non-government work—often characterized by informal contracts, unstable hours or exploitative conditions—exacerbates stress. Indeed, Faisalabad is an industrial hub (notably textiles), where many workers face harsh environments. For instance, a recent study of power-loom textile workers in Punjab found 27% reporting depressive symptoms[110] alongside common occupational ailments. In contrast, **unemployment per se did not elevate** depression risk in our adjusted models. This somewhat surprising result might reflect that many unemployed individuals are supported by family networks, whereas low-wage earners in informal jobs bear constant anxiety about income. Nevertheless, other Bangladeshi data have linked job insecurity and unemployment to worse mental health (e.g., heightened depression during COVID-19 among jobless adults[106]. Overall, our findings reinforce the notion that precarious work—found in Faisalabad's peri-urban industrial zones—is a core driver of distress, in line with broader LMIC (Low- and Middle-Income Countries) evidence on job strain and mental illness.

Marital status and household stress emerged as important too. Married and single (never-married) respondents each had over twice the odds of depression compared to widowed individuals. In contrast, separated individuals did not differ significantly. The higher risk in married women likely reflects domestic responsibilities and conflicts: local research in rural Faisalabad identified *husband–wife and in-law conflicts, large family workload, and early motherhood* as major depression risk factors[73]. These social stressors fit our finding that married adults report more depression than widowed adults (who tend to be older and perhaps relieved of some family obligations). That single adults also had elevated risk (versus widowed) may indicate that younger unmarried people face their own socioeconomic hardships (e.g. underemployment) or social isolation. In contrast, lower education was not a strong independent predictor in multivariate analysis, suggesting its effects were captured by income and employment covariates. In Pakistan and the region, education often correlates with better jobs and resources, but when other SES (socioeconomic status) factors are accounted for, its direct effect on mental health may vanish (as in Maselko et al.'s rural Pakistan study[44].

Income, financial security, and pandemic impacts showed striking effects. Surprisingly, respondents with moderate incomes (25–100k PKR/month) had 3–5 times higher depression odds than the poorest (<25k). One explanation is that absolute poverty may not strictly predict distress; rather, financial uncertainty does. Indeed, subjective financial resilience was one of the strongest protective factors. Those confident they could handle an unexpected expense or that their financial future is secure had dramatically lower adjusted depression odds (AOR $\approx 0.05 - 0.10$). This mirrors broader findings: in Pakistan, objective measures of deprivation (few assets, food insecurity, debt) strongly elevated depression scores[44]. In our study, middle-income earners may have experienced unstable living costs or debt pressures, whereas the poorest might rely on subsistence living or family support (potentially blunting self-reported symptoms). Likewise, pandemic-related hardship mattered: reporting financial difficulties during COVID-19 raised depression odds (AOR≈1.67). Similar patterns were seen elsewhere in South Asia. For example, among Dhaka's urban poor, individuals who lost income or faced food scarcity were more likely to be depressed during the COVID-19 crisis[106]. Taken together, these data underscore that economic stress—not just low income, but the lack of financial buffer—is a central driver of mental illness in the region.

4.2. Geographic and urban–rural context

While raw depression prevalence was somewhat higher in rural respondents, this difference mostly disappeared after adjusting for socioeconomic variables. In our fully adjusted model, urban residence showed a modest (non-significant) trend toward higher odds (AOR≈1.32, p≈0.08). This suggests that location alone is not destiny: rather, it is the concentration of socioeconomic risk in particular areas that matters. Faisalabad's urban-industrial pockets and peri-urban fringes (e.g., textile belts near Khurrianwala and suburban Jaranwala) appear to be mental-health hotspots, likely due to high population density, pollution, and labor insecurity. In contrast, truly rural villages may have different profiles: for instance, isolated rural communities face challenges of access to care but may have traditional support networks that mitigate stress. Notably, a classic study in rural Punjab found very low depression among unmarried youth[109], whereas urban slum surveys often document high distress linked to crowding and poverty. Our findings fit a mixed landscape: urban and peri-urban working areas show heavy psychiatric burden driven by industry and commerce, while some rural areas may report less depression once material needs are met. This geo-social pattern is consistent with local observations that Faisalabad's sprawl of small

[109] Atif Rahman et al., "Young, Single and Not Depressed: Prevalence of Depressive Disorder among Young Women in Rural Pakistan," *Journal of Affective Disorders* 117, nos. 1–2 (2009): 42–47, https://doi.org/10.1016/j.jad.2008.12.008.

[110] Tanweer Islam, "Health Concerns of Textile Workers and Associated Community," *INQUIRY: The Journal of Health Care Organization, Provision, and Financing* 59 (January 2022): 00469580221088626, https://doi.org/10.1177/00469580221088626.

factories and markets (often lacking occupational safety) has created a "mental health risk environment" reminiscent of industrialized zones in other cities.

4.3. Implications for policy and interventions

These results point to clear targets. First, mental health services must extend beyond hospitals to reach blue-collar workers and low-income neighborhoods. For example, workplace mental-health programs in Faisalabad's textile mills or sewing factories (similar to occupational health initiatives) could address depression and stress early. Second, social safety nets should prioritize financial resilience: cash-transfer or emergency savings schemes for vulnerable households can reduce anxiety about unexpected expenses. Economic policies that stabilize jobs and incomes (e.g., protecting labor rights in the private sector and supporting small entrepreneurs) will likely yield mental-health dividends[44,106]. Third, community-based psychosocial support should focus on high-stress demographics: younger adults and women. Outreach through community health workers could integrate counseling and referral in both urban slums and rural villages. Domestic violence and family disputes must be addressed, especially for married women who are most vulnerable to such kind of issues. Our current, Faisalabad based studies suggest that reducing tensions with spouses and in-laws can significantly reduce women's risk of depression[73]. However, mental health is influenced by more than just what happens in the home. The way cities are planned is also important. Improved access to green spaces, lower air and workplace pollution, and relief from overcrowding in the industrial zones of Faisalabad and Jaranwala could all help to reduce psychological stress. Pakistan already has examples of effective interventions: rural programs like the Lady Health Worker initiative have been a huge success. These experiences provide a useful model for expanding support into peri-urban areas, where rising industrial employment creates new pressures, but mental health services are scarce.

5. Conclusion

In conclusion, our findings sketch a clear socio-geographic portrait of psychological distress in the Faisalabad region: roughly one in three adults screened positive for probable depression (≈31%) and anxiety was even more common (≈43%), with women and, above all, younger working-age adults carrying a disproportionate share of the burden. After adjustment, the strongest signals were occupational and financial: people employed in semi-government, private or informal "other" sectors faced substantially higher odds of depression (AORs roughly 1.6 – 3.7), while middle income bands showed unexpectedly higher adjusted depression odds compared with the poorest group; reporting financial difficulties during COVID-19 raised depression risk (AOR ≈ 1.67). Perhaps most striking, perceived financial resilience — the belief that one could meet an unexpected expense or secure the family's financial future — was powerfully protective (depression AORs ≈ 0.05 – 0.10 and anxiety AORs ≈ 0.42 – 0.60), suggesting that subjective coping capacity matters as much as objective income. The crude urban–rural difference largely evaporated once socioeconomic factors were taken into account, indicating that place matters mainly because of the concentration of precarious work, crowded living and limited services in particular urban and peri-urban pockets rather than by geography alone. Taken together, these results argue for a two-pronged response: economic measures that stabilize livelihoods and build short-term financial buffers (targeted cash support, labour protections, and employment security in industrial zones) alongside expanded, place-sensitive mental-health services (workplace screening and counselling, primary-care integration and outreach in underserved rural union councils). Targeting young adults, women burdened by household responsibilities, and informal-sector workers in Faisalabad's textile and peri-urban belts should be a policy priority if we are to blunt the mental-health consequences of ongoing economic strain and prevent transient distress from becoming chronic illness.

6. Author Contributions

Conceptualization: S.A.A.N., L.A.W & R. I.; Data collection: R. I., L.A.W., S.A.A.N., Z. N., K. F., & N. A.; Investigation: S.A.A.N., L.A.W & R. I.; Methodology: S.A.A.N., L.A.W., R. I., Z. N., & B. J.; Resources: S.A.A.N., L.A.W., R. I., Z. N., K. F., & B. J.; Software: S.A.A.N., L.A.W., R. I., B. J., & Z. N.; Supervision: S.A.A.N., & Z. N.; Validation: S.A.A.N., Z. N., L.A.W., R. I., & B. J.; Visualization: S.A.A.N., R. I.; & LAW.; Writing—original draft, S.A.A.N., L.A.W., & R. I.; Writing—review and editing, S.A.A.N., LAW., R. I., Z. N., K. F., N. A., & B. J.; All authors have read and agreed to the published version of the manuscript.

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8. Ethical Approval

This research received ethical clearance from the Ethical Review Committee of Government College University Faisalabad, Pakistan (Notification No: Ref. No. GCUF/ERC/235—Dated: 06 April 2023). Prior to data collection, participants were informed about the purpose and procedure of the survey. Their voluntary participation was ensured by obtaining explicit informed consent before proceeding with the questionnaire.

9. Data Availability Statement

The statistical and related data analyzed in this study are not publicly available. However, they can be obtained from the corresponding author upon reasonable request.

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11. Conflicts of Interest

The authors declare that there are no conflicts of interest related to this study.