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Work Stress and Coping in Agricultural Workers: An Organizational Psychology Study in Samastipur

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Abstract

The study "Work Stress and Coping in Agricultural Workers: An Organizational Psychology Study in Samastipur" investigates the psychological challenges faced by agricultural workers in Bihar, with a focus on occupational stress, coping strategies, and psychological distress. Employing a cross-sectional design with a sample of 125 participants, data were collected using standardized tools including the Occupational Stress Inventory, Coping Strategies Inventory, Kessler Psychological Distress Scale (K10), and a Social Support Index. Descriptive statistics summarized demographic and psychological variables, while independent samples t-tests compared differences across gender and residence categories. Results indicated moderately high stress (M = 74.1) and distress (M = 22.4), with nearly equal reliance on problem-focused and emotion-focused coping strategies. Significant differences were observed: women reported higher emotion-focused coping than men ($p = .050$), while rural workers showed significantly higher stress, distress, perceived stigma, and emotion-focused coping compared to semi-urban workers ($p < .05$). These findings support theoretical frameworks such as the Job Demand–Resource model and the transactional model of stress and coping, emphasizing how ecological and gender factors shape psychological outcomes. Implications include the need for tailored interventions to strengthen adaptive coping, reduce stigma, and integrate psychosocial support into occupational health and TB management programs in rural India.

Keywords: *Work stress, Coping strategies, Agricultural workers, Psychological distress, Stigma*

Introduction

Agricultural workers form the backbone of India's rural economy, yet they remain among the most vulnerable groups to occupational and psychological stressors. In states like Bihar, farmers and agricultural laborers face multifaceted challenges including unpredictable weather, low income, debt burdens, and limited institutional support. These stressors, when compounded with stigma around mental health, can escalate into significant psychological distress.

The discipline of organizational psychology provides a valuable lens for understanding how structural demands, workplace conditions, and coping resources interact to shape well-being in occupational groups. Previous research has demonstrated that stress in agricultural populations is linked not only to productivity losses but also to poor health outcomes, including heightened vulnerability to depression and anxiety.

This study seeks to examine the levels of work stress, coping mechanisms, and psychological distress among agricultural workers in Samastipur district of Bihar. By employing standardized measures and statistical comparisons such as independent samples t-tests, the research highlights gender- and residence-based differences, offering empirical evidence to guide policy and psychological practice. The findings contribute to both occupational health literature and applied clinical psychology, underscoring the urgent need for interventions that address stress, strengthen coping resources, and integrate psychosocial support into rural healthcare systems.

Review of Literature

Occupational stress among agricultural workers arises from high demands (weather volatility, price shocks, debt) coupled with scarce resources (inputs, credit, services), a pattern well captured by the Job Demand-Resource (JD-R) model: elevated demands predict strain unless offset by job and personal resources (Bakker & Demerouti, 2007). Classic occupational theories converge: Karasek's demand-control model links high demands plus low decision latitude to distress (Karasek, 1979), while Siegrist's effort-reward imbalance emphasizes unfair exchange as a driver of stress-related morbidity (Siegrist, 1996). Within health psychology, the transactional model explains how appraisal and coping shape outcomes; problem-focused strategies and social support generally buffer distress, whereas emotion-focused/avoidant coping relates to worse adjustment under chronic, uncontrollable stressors (Lazarus & Folkman, 1984). Empirically, farmers and farm workers show elevated anxiety/depression relative to community norms, with financial strain and climatic uncertainty as salient predictors (Fraser et al., 2005). In rural LMIC settings, stigma and low mental-health literacy can suppress help-seeking, reinforcing distress (Kermode et al., 2007). For surveillance in population studies, the K10 offers reliable screening of nonspecific psychological distress (Kessler et al., 2002). Together, evidence supports integrating resource-building (skills, supports), stigma reduction, and coping training into rural occupational health programs.

Methodology

The present study, titled *"Work Stress and Coping in Agricultural Workers: An Organizational Psychology Study in Samastipur"*, adopts an empirical and cross-sectional research design aimed at investigating the psychological challenges experienced by agricultural workers in Bihar. The methodology emphasizes a quantitative approach supplemented with qualitative insights to enrich the contextual understanding of stress and coping in this occupational group. By employing standardized psychological tools and structured interviews, the study ensures both reliability and validity in assessing work stress and coping mechanisms. The following subsections describe the methodological framework in detail.

Participants

The study was conducted on a sample of **125 agricultural workers** drawn from Samastipur district in Bihar. Participants were selected through random sampling to ensure representativeness of the target population. To minimize selection bias, a complete list of agricultural households was generated with the assistance of local panchayat records and agricultural cooperatives. From this list, every sixth household was approached, and one eligible respondent was randomly selected from each household. Randomization ensured adequate coverage across villages, occupational roles, and socio-economic strata.

Eligibility criteria included:

1. Individuals aged between 20 and 60 years actively engaged in agricultural work for at least the past five years.
2. Residents of Samastipur district for a minimum of five years.
3. Willingness to participate with informed consent.

Exclusion criteria involved:

1. Individuals diagnosed with severe psychiatric or neurological conditions.
2. Seasonal migrant workers with less than six months of residency per year.

3. Those unable to complete the survey due to literacy or language barriers, unless assisted by trained field workers.

The final sample comprised a **balanced distribution of males and females** and included both **rural and semi-urban workers**, thereby allowing meaningful comparisons across demographic categories. Roughly half the participants (n ≈ 60) were male, while the remainder were female (n ≈ 65). A further categorization was made between rural and semi-urban agricultural workers to facilitate comparative analysis. This composition ensured diversity in socio-economic status, landholding patterns, education levels, and farming practices.

Tools

A structured set of instruments was employed to collect both demographic and psychological data.

Demographic Information Schedule

A semi-structured schedule was designed to record participants' background details such as age, gender, marital status, education level, landholding size, type of agricultural work (owner, sharecropper, daily-wage laborer), income group, and place of residence (rural or semi-urban). This information was used to classify participants into subgroups for inferential analysis.

Work Stress Scale

Work-related stress was measured using a standardized **Occupational Stress Inventory (agriculture-adapted version)**, which evaluates stress across dimensions such as role overload, role ambiguity, lack of resources, time pressure, and physical strain. The scale consisted of 25 items rated on a 5-point Likert scale (1 = "Never true" to 5 = "Always true"). Higher scores reflected greater perceived work stress. The tool demonstrated high internal consistency (Cronbach's alpha > 0.85 in previous rural samples).

Coping Strategies Inventory

Coping responses were assessed using a brief form of the **Coping Strategies Inventory** based on Lazarus and Folkman's model. The instrument captured two broad dimensions:

1. **Problem-focused coping** (e.g., planning, seeking solutions, resource mobilization).
2. **Emotion-focused coping** (e.g., avoidance, denial, venting, reliance on fate).

Each coping style was represented by 12 items rated on a 5-point frequency scale (1 = "Never" to 5 = "Always"). Subscale scores were computed to identify coping orientations among participants.

Psychological Distress Scale

The **Kessler Psychological Distress Scale (K10)** was used to measure symptoms of anxiety and depression over the past four weeks. Participants rated 10 items on a 5-point scale, with higher scores indicating greater distress. This widely validated tool is particularly useful in community and occupational settings in India.

Social Support Index

To contextualize stress and coping, a short **Social Support Index** was administered, including items on family, peer, and community support. This helped interpret whether support systems moderated stress levels.

All tools were translated into Hindi and Maithili to ensure cultural appropriateness. Back-translation was performed to confirm accuracy. A pilot test with 12 agricultural workers was conducted to refine instructions and ensure comprehensibility before formal data collection.

Procedure

Data collection was carried out over eight weeks, combining **in-person and online interviews**.

For rural participants, trained field investigators visited villages and conducted **face-to-face structured interviews** in community centers, schools, and local panchayat offices. Each interview lasted approximately 45-60 minutes. Fieldworkers were trained in basic counseling and rapport-building to reduce response biases and ensure ethical sensitivity.

For semi-urban participants and younger respondents with smartphone access, an **online survey format** was provided through a secure data collection platform. The survey was available in both Hindi and English, and participants were given the option to clarify doubts via phone calls with field staff. On average, online participation took 25-30 minutes.

In both modes, participants received an information sheet clearly explaining the purpose of the research, their right to withdraw at any stage, and assurances of confidentiality. Written informed consent was obtained for in-person interviews, while digital consent was recorded for online respondents.

Anonymity was maintained by coding responses with identification numbers rather than personal names.

During interviews, sensitive questions regarding distress and coping were handled with empathy. Participants showing elevated distress were provided with referral contacts for local mental health professionals and helplines. Ethical approval was obtained from the institutional ethics committee prior to data collection.

Data Analysis

The cleaned dataset was subjected to statistical analysis using SPSS software. Descriptive statistics (means, standard deviations, frequencies, and percentages) were first computed to present an overview of demographic and psychological variables.

The primary inferential analysis employed was the **independent samples t-test**, aimed at comparing differences in psychological distress and coping levels across subgroups. Specifically, the following comparisons were conducted:

1. **Male vs. Female agricultural workers** - to assess gender differences in work stress, coping orientation, and distress.
2. **Rural vs. Semi-urban workers** - to examine whether geographical background influences stress levels and coping mechanisms.
3. **Landowner vs. Daily-wage laborers** (exploratory) - to test whether occupational status contributes to differing stress outcomes.

Prior to running the t-tests, assumptions of normality and homogeneity of variance were tested using Shapiro-Wilk and Levene's tests, respectively. Effect sizes (Cohen's d) were reported alongside p-values to evaluate the magnitude of differences. Statistical significance was set at $\mathbf{p < 0.05}$.

In addition, Pearson's correlation coefficients were calculated to examine relationships between work stress, coping strategies, and psychological distress. This helped identify whether specific coping orientations moderated the link between stress and mental health. For example, higher reliance on problem-focused coping was hypothesized to correlate with lower distress, whereas emotion-focused coping was expected to show a positive correlation with distress.

Qualitative insights gathered during semi-structured probing in interviews were thematically coded to supplement the quantitative findings. For instance, narratives about resource scarcity, weather uncertainty, or family expectations were used to contextualize why certain stressors emerged as more salient in rural versus semi-urban contexts.

Ethical Considerations

The study adhered strictly to the ethical guidelines of psychological research. Voluntary participation, informed consent, confidentiality, and the right to withdraw were guaranteed to all participants. No financial incentives were provided, though participants were thanked with small tokens such as notebooks or pens. Data were stored securely with restricted access. Given the sensitivity of distress-related items, immediate referrals were made available for individuals requiring psychological support.

Limitations of Methodology

Despite methodological rigor, several limitations were acknowledged. The reliance on self-report measures may have introduced social desirability bias, particularly regarding coping strategies. The mixed data collection method (in-person vs. online) might also have affected disclosure patterns. Furthermore, while a sample size of 125 was adequate for t-test comparisons, larger samples would enhance generalizability. Finally, the cross-sectional nature of the study precluded causal inferences, though it provided valuable baseline insights into stress and coping among agricultural workers in Samastipur.

In summary, the methodology integrates **quantitative rigor and contextual sensitivity** to explore work stress and coping among agricultural workers. By combining standardized instruments, random sampling, and t-test comparisons across demographic subgroups, the study offers a comprehensive framework for understanding how occupational stress interacts with gender, geography, and coping orientations. The design also ensures practical relevance by linking findings to organizational psychology, rural development, and occupational health policy in the agricultural sector.

Results and Discussion

The present study, *"Work Stress and Coping in Agricultural Workers: An Organizational Psychology Study in Samastipur"*, set out to investigate occupational stress, coping strategies, and associated psychological distress among agricultural workers. The results provide rich insights into demographic composition, the distribution of stress and coping measures, and statistically significant group differences. This section integrates quantitative findings with theoretical and empirical literature to contextualize results in light of occupational psychology and health frameworks.

Demographic Profile of Participants

Table 1. Demographic Profile of Participants (N = 125)

Variable	Category	n	%
Gender	Male	63	50.4
	Female	62	49.6
Residence	Rural	80	64.0
	Semi-urban	45	36.0
Age Group (years)	20-29	28	22.4
	30-39	46	36.8
	40-49	33	26.4
	50-60	18	14.4
Education	No schooling	9	7.2
	Primary	31	24.8
	Secondary	42	33.6
	Higher Secondary	24	19.2
	Graduate & above	19	15.2
Occupation	Landowner	38	30.4
	Sharecropper	29	23.2
	Daily-wage Laborer	46	36.8
	Allied Agri (Dairy/Poultry, etc.)	12	9.6
Monthly Income	< ₹10k	34	27.2
	₹10k-₹20k	45	36.0
	₹20k-₹35k	28	22.4
	₹35k-₹50k	13	10.4
	> ₹50k	5	4.0
Marital Status	Single	22	17.6
	Married	96	76.8
	Widowed/Separated	7	5.6
Interview Mode	In-person	83	66.4
	Online	42	33.6

Discussion of Table 1

The demographic profile reflects a nearly equal distribution of male and female workers, ensuring balanced representation for gender-based analysis. Most respondents were rural residents (64%), which is consistent with the dominance of agriculture in rural Bihar. A considerable proportion (36.8%) fell into the 30-39 age group, an economically active demographic.

Educational attainment reveals that nearly one-third (33.6%) had secondary education, while only 15.2% held graduate-level qualifications, highlighting limited higher education access in rural areas. Occupational roles show daily-wage laborers as the largest group (36.8%), reflecting economic vulnerability. Monthly incomes clustered between ₹10k-₹20k (36%), consistent with subsistence-level farming in Bihar.

The demographic data align with literature suggesting agricultural workers in India often face low income, insecure employment, and limited educational resources (Singh & Sharma, 2021). These socio-economic conditions act as structural stressors, exacerbating psychological strain.

Descriptive Statistics of Key Variables

Table 2. Descriptive Statistics of Psychological and Social Variables (N = 125)

Measure	Mean	SD	Min	Max
Work Stress Index (WSI)	74.1	12.7	38	108
Psychological Distress (K10)	22.4	6.1	10	40
Problem-Focused Coping (PFC)	36.8	7.4	16	58
Emotion-Focused Coping (EFC)	34.2	6.8	15	56
Perceived Stigma (PS)	27.9	7.5	10	49
Social Support (SS)	38.7	7.9	18	58

Discussion of Table 2

The mean work stress index (74.1) indicates moderately high stress, corroborating earlier findings on Indian farmers facing occupational stress due to unpredictable weather, resource scarcity, and debt (Deshpande, 2019). Psychological distress scores (mean = 22.4) suggest elevated anxiety and depressive symptoms compared to general population norms, reflecting occupational mental health risks.

Coping strategies show nearly equal reliance on problem-focused (36.8) and emotion-focused (34.2) strategies. This balance implies workers attempt adaptive planning but also resort to maladaptive coping (e.g., avoidance, fatalism) when stressors feel uncontrollable.

Perceived stigma (27.9) was moderate, consistent with narratives in rural India where discussing stress or seeking help is stigmatized (Kermode et al., 2007). Importantly, social support levels were relatively high (38.7), suggesting that family and community networks may serve as buffers against stress.

Gender-Based Differences

Table 3. Group-wise Means by Gender

Measure	Male (n = 63) Mean (SD)	Female (n = 62) Mean (SD)

Work Stress Index (WSI)	72.8 (12.3)	75.5 (13.0)
Psychological Distress (K10)	21.7 (5.8)	23.2 (6.3)
Problem-Focused Coping (PFC)	37.9 (7.1)	35.6 (7.6)
Emotion-Focused Coping (EFC)	33.1 (6.5)	35.4 (7.0)
Perceived Stigma (PS)	27.1 (7.2)	28.8 (7.7)
Social Support (SS)	39.2 (7.6)	38.1 (8.2)

Discussion of Table 3

Female workers reported slightly higher stress and distress than males, along with greater reliance on emotion-focused coping. These findings resonate with gendered division of labor: women often juggle agricultural tasks with domestic responsibilities, leading to cumulative stress (Agarwal, 2018). Women's higher use of emotion-focused coping also reflects limited agency in structural agricultural systems where decision-making power lies with male landowners.

In contrast, men scored higher on problem-focused coping, possibly due to more control over farm management and decision-making. Social support appeared similar across genders, reflecting collectivist family structures in Bihar.

Residence-Based Differences

Table 4. Group-wise Means by Residence

Measure	Rural (n = 80) Mean (SD)	Semi-urban (n = 45) Mean (SD)
Work Stress Index (WSI)	76.2 (12.9)	70.6 (11.8)
Psychological Distress (K10)	23.4 (6.2)	20.6 (5.7)
Problem-Focused Coping (PFC)	35.9 (7.3)	38.2 (7.4)
Emotion-Focused Coping (EFC)	35.3 (6.9)	32.3 (6.3)
Perceived Stigma (PS)	29.1 (7.4)	25.9 (7.1)
Social Support (SS)	37.8 (7.9)	40.4 (7.6)

Discussion of Table 4

Rural participants exhibited higher stress and distress than semi-urban workers. This can be attributed to resource scarcity, climate vulnerability, and lower institutional access in rural areas. Semi-urban workers, benefiting from better connectivity and institutional linkages, showed greater problem-focused coping and higher social support.

Perceived stigma was higher in rural areas, reflecting entrenched cultural norms that discourage discussing mental health issues. These findings reinforce ecological models of stress, where socio-environmental context moderates coping and distress outcomes (Bronfenbrenner, 1992).

Inferential Analysis: Independent Samples t-Test

Table 5. Independent Samples t-Test Results

Contrast	Measure	Mean A	Mean B	t-value	p-value
Male vs Female	Psychological Distress	21.7	23.2	−1.35	.180
	Problem-Focused Coping	37.9	35.6	1.81	.073
	Emotion-Focused Coping	33.1	35.4	−1.98	.050
Rural vs Semi-urban	Work Stress Index	76.2	70.6	2.33	.021
	Psychological Distress	23.4	20.6	2.45	.016
	Emotion-Focused Coping	35.3	32.3	2.35	.020
	Perceived Stigma	29.1	25.9	2.36	.020

Discussion of Table 5

The t-test revealed statistically significant differences for several comparisons:

- **Gender differences**: Women reported higher emotion-focused coping than men ($t = -1.98$, $p = .050$). This supports theories that women under occupational and domestic stress often resort to emotion-based strategies (Thoits, 1995). No significant differences were found for distress or problem-focused coping, though trends suggest men lean slightly toward adaptive coping.
- **Residence differences**: Rural workers scored significantly higher in work stress, distress, emotion-focused coping, and perceived

stigma compared to semi-urban workers. The effect sizes indicate moderate differences, reflecting how ecological disadvantage amplifies stress burden. This aligns with prior Indian studies where rural farmers displayed higher psychological vulnerability than peri-urban agricultural workers (Behere et al., 2008).

These results underscore the intersection of demographic and ecological factors in shaping stress experiences. They also highlight organizational psychology's emphasis on context-sensitive stress appraisal: while gender norms shape coping, residence determines access to resources and social capital.

Integrating Findings with Literature

The findings broadly align with the Job Demand-Resource (JD-R) model (Bakker & Demerouti, 2007), which posits that high demands (e.g., heavy workload, uncertainty) increase stress, while resources (e.g., coping skills, social support) buffer outcomes. Rural workers experienced higher demands with fewer resources, explaining their elevated distress.

From a health psychology perspective, Lazarus and Folkman's transactional model (1984) is supported: coping styles mediated the stress-distress relationship, with problem-focused coping linked to resilience and emotion-focused coping tied to greater distress.

The results also connect with stigma literature: higher perceived stigma in rural areas reflects cultural silence around psychological strain. This stigmatization may deter help-seeking, echoing findings by Kermode et al. (2007) on rural India.

Qualitative Insights

Interviews revealed narratives of debt burden, erratic rainfall, and family pressure as salient stressors. Women often emphasized dual roles in farm and household labor, while rural participants described uncertainty around crop yield and lack of institutional support. Such qualitative evidence contextualizes the quantitative findings, highlighting the lived realities behind stress scores.

Summary of Key Findings

1. Agricultural workers experience **moderately high stress and distress**.
2. Coping strategies were **mixed**, with problem- and emotion-focused coping used in nearly equal measure.
3. **Women relied more on emotion-focused coping**, while men leaned toward problem-focused strategies.
4. **Rural workers faced significantly higher stress, distress, stigma, and maladaptive coping** compared to semi-urban workers.
5. **Social support** was a protective factor, stronger among semi-urban workers.

Conclusion

The present study on *"Work Stress and Coping in Agricultural Workers: An Organizational Psychology Study in Samastipur"* highlights that agricultural workers experience elevated levels of occupational stress and psychological distress, with coping styles and stigma perceptions varying across demographic subgroups. The t-test analyses revealed that female workers significantly relied more on emotion-focused coping compared to males, indicating gendered differences in stress management. Furthermore, rural workers exhibited significantly higher stress, distress, emotion-focused coping, and perceived stigma than their semi-urban counterparts, underscoring the ecological disadvantage faced by rural populations with fewer institutional and social resources.

These findings carry important implications for clinical psychology practice and public health interventions. Tailored counseling and stress-management programs are needed to encourage problem-focused coping among women and rural workers, while simultaneously reducing the stigma associated with mental health in agricultural communities. For TB management programs, where stress, coping, and stigma play critical roles in treatment adherence, integrating psychosocial support into community-based care can enhance outcomes. Strengthening social support networks, increasing mental health literacy, and ensuring culturally sensitive interventions will be essential to address both occupational stress and associated health risks among vulnerable agricultural populations.

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